

Recommendations to Prevent and Reduce Long Term Power Outages

Prepared by: Westford Energy Committee

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1 Introduction

On October 29th, an unprecedented early season snowstorm struck New England, causing widespread power outages. The town of Westford sustained heavy damage, with trees blocking up to 30 roads, and power out for 80% of the residents. Blocked roads persisted for up to 4 days after the storm, and power restoration took up to 7 days.

On November 9th, the Board of Selectman asked the Energy Committee to investigate actions that could be taken to:

- Reduce the likelihood of prolonged power outages
- Lessen the duration and impact of power outages when they occur

The following document outlines the findings of the Energy Committee. It details the investigative process, and presents recommendations.

2 Gathering Information

The Energy Committee gathered information from multiple sources, including:

- The Massachusetts Department of Public Utilities
- NGrid (via email, phone, and direct face to face communications)
- Select Massachusetts Municipal Utilities
- Select Westford Department Heads (Police Chief, Fire Chief, Tree Warden, Town Manager, Assistant Town Manager)

Members of the Committee attended the DPU's public hearing concerning the investigation of NGrid's response to the October 29th storm. Documents submitted to the DPU as testimony have also been reviewed. (For example, the NGrid "Final Event Report", available at <http://www.env.state.ma.us/dpu/docs/electric/11-119-a/122011ngferpt.pdf>.)

The Committee, along with the Town Manager, Police Chief, and Tree Warden met with the following NGrid representatives:

- Dave Gendall (Communications)

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- Aleta Fazzone (Communications)
- Bob Pendrake (Engineering)
- Ken Lomax (Operations)
- Jim MacArthur (Forestry)

One purpose of the meeting was to follow up on the questions and answers exchanged in numerous emails.

While it is always possible to get more information, the Committee feels it has enough to move forward with recommendations to the Board of Selectmen.

3 Recommendations

These recommendations are separated into two groups:

- NGrid Focused Actions
- Westford Focused Actions

4 NGrid Focused Actions

NGrid has outlined a number of improvements they plan to implement. These are steps they can take to benefit the entire service area, including Westford. These are steps such as:

- Instituting and expanding the Community Liaison Program.
- Improving the Outage Central website.
- Expanding the mutual aid pool.
- Installing GPS in contractor and mutual aid crew vehicles.
- Training “Cut & Clear” crews.
- Inspecting 300 distribution feeders (7,000 circuit miles) impacted by the storm.
- Conducting high level damage assessment during the first 8 hours of the storm.

While the Energy Committee believes these are reasonable steps, it also wonders if these steps would have been considered had the investigation into the October 29th storm not been undertaken by the DPU.

While NGrid must demonstrate their actions to the DPU, they are not obligated to Westford concerning progress updates. That said, the Committee believes it is in Westford’s interest to stay informed on progress on these steps. Therefore:

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Recommendation 1: Westford should request progress information from NGrid and the DPU concerning the DPU's investigating and resulting outcomes, including progress on improvements.¹

5 Westford Focused Actions

During discussions with NGrid, the Committee asked what steps could be taken to "Help Westford help NGrid" in preventing prolonged outages, and improving public safety and restoration efforts. What follows is a set of recommendations that must be implemented cooperatively between Westford and NGrid.

5.1 Communication

Communication and coordination between Westford and NGrid can clearly be improved. This takes many forms.

NGrid keeps a list of critical facilities (hospitals, nursing homes, etc.) for each municipality. Dave Gendall (NGrid) noted they were in the process of updating these lists.

Recommendation 2: Verify with NGrid the list of critical facilities. This should include type of facility, address, and a primary contact for each facility.

Recommendation 3: Westford public safety officials should coordinate information concerning residents having life-sustaining equipment in their home with NGrid, if possible. NGrid maintains a "Life Support Program" of such needs.

While the Committee received very favorable feedback on the Community Liaison mechanism, such a process should not rely solely on interpersonal relationships, leading to:

Recommendation 4: A clear understanding of the protocols and procedures concerning the Community Liaison interaction should be developed with NGrid. This should be a written agreement including such items as:

- The protocol for communication and action when a major storm event is forecast.
- The protocol for communication and action during a major storm event.
- The protocol for communication and action during the restoration process.

These protocols should detail the interaction between the NGrid liaison and Westford public safety officials. The liaison should be present or available during the daily Emergency Management meetings.

¹ The DPU docket number for the investigation is 11-119-A and can be accessed at http://www.env.state.ma.us/DPU_FileRoom/frmDocketListSP.aspx.

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This should also include data items such as:

- Contact information for town officials, including phone numbers, email addresses, etc.
- Contact information for NGrid representatives, include phone numbers, email addresses, etc.

Provisions for periodic maintenance and updating of this protocol should be included.

Recommendation 5: A public education awareness program targeted at Westford residents should be developed. This could contain items such as:

- Emergency preparedness.
- How to get information during a storm event.
- How to report downed wires.
- Safety around downed wires and trees.
- Safe operation of generators.
- Rights and responsibilities concerning tree trimming and service wires.

5.2 Engineering

One area of exploration was the condition of the electrical distribution equipment in the town – could it be improved to lessen the possibility and impact of power outages? While the Committee was assured the condition of the equipment was “good”, conclusive evidence was not presented. In fact, using NGrid’s data, 19% of the reported outages in Westford over the past 5 years were due to *deterioration, device failed, and insulation failure.*

NGrid referenced a number of diagnostic and maintenance procedures focused on the equipment in Westford. These included:

- Infrared scanning (thermal imaging)
- Transformer maintenance
- Cutout replacement
- Overhead line construction review

Recommendation 6: Westford should request reports and review information concerning these actions on an annual basis.

5.3 Operations

The operational aspect of restoration is where Westford and NGrid can greatly improve to shorten the duration of power outages.

Recommendation 7: Westford and NGrid should develop “wire down” protocols to insure that public safety is the top priority. For example, the Westford Police Chief prefers residents call 911 to report a wire down, so his department can

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coordinate with NGrid. NGrid prefers an address or cross street and **not** pole numbers in identifying the location of wires down.

In order to keep public safety as the top priority, NGrid is training “Cut & Clear” crews. These crews are only trained to repair lines up to a certain level, however they can augment the better trained crews by clearing road ways.

Recommendation 8: Clear protocols should be developed outlining the interaction of Westford public safety personnel and “Cut & Clear” crews.

NGrid noted a goal of completing the initial damage assessment phase of restoration within 8 hours of the storm event.

Recommendation 9: A clear understanding of Westford’s role and responsibility in the damage assessment phase, including input on prioritization of public safety issues should be developed with NGrid.

NGrid was impressed with the GIS information and “downed tree” assessment performed by Westford town employees.

Recommendation 10: NGrid and Westford should share and integrate town GIS information with NGrid’s distribution and transmission facilities within the town. This would improve the prioritization of damage, speeding recovery.

5.4 Forestry

While the Committee understands the damage of the October 29th storm was largely due to health trees which didn’t normally encroach on the power lines, NGrid’s data shows that 25% of outages in Westford over the past 5 years were due to trees on “blue sky days” (i.e. – not storm related).

NGrid produced data showing approximately 50 miles of power lines were in the process of maintenance pruning. Whether this was in response to the 25% metric, is unknown, however this maintenance represents a significant effort in Westford.

Recommendation 11: Continue the good working relationship between the NGrid head of Forestry (Jim MacArthur) and Westford Tree Warden (Chip Barrett).