

The View from Connecticut: EMF Health and Safety Policy Concerning High Voltage Power Lines

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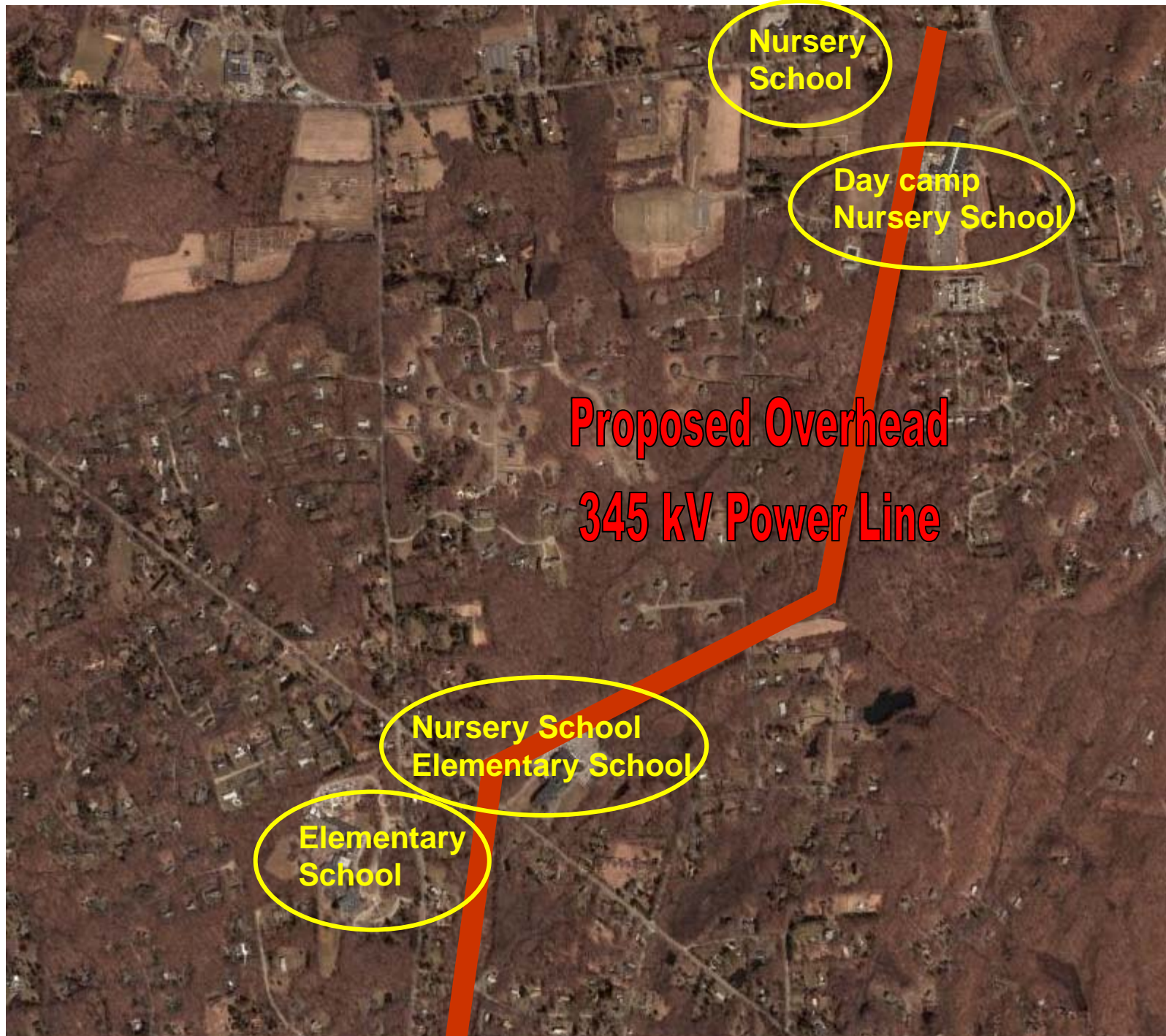
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Overview

- Power Line Application to upgrade grid in Connecticut
- Process
- Lessons Learned and Conclusions

Proposed Power Line Upgrade in Connecticut

- Application to Siting Council for 69 mile North/South power line upgrade
- Included plans to traverse 6 miles in Woodbridge CT, adjacent to 2,000 children.



Nursery School

Day camp Nursery School

Proposed Overhead
345 kV Power Line

Nursery School
Elementary School

Elementary School

EMF Calculations

- Application included estimates of 96.5 mG at peak, 25 mG at avg load and increasing through the life of the line to 30 mG at average load and 110 mG at peak

Power Line Proximity to Children in Woodbridge Educational Institutions



Community Response

- Town of Woodbridge
- Woodbridge Educational Institutions
- Creation of Keep the Children Safe
 - Concerned citizens including parents, health professionals, scientists, economist, experts in drug regulatory affairs, attorneys and a political scientist.



- Review of scientific evidence
- Develop precautionary approach to minimize risk to children
- Engage public, presented and promoted finding to regulatory bodies and legislature

Development of Precautionary approach based on original analysis of data

EMF Exposure	Odds Ratio	95% Confidence Intervals	P Value
2 – 5mG	1.30	1.03 – 1.64	0.013
3 – 5mG	1.81	1.25 – 2.62	0.001

Analyses from data in Table 3, Greenland S et al. Epidemiology. 2000;11:624-634

- Exposure of children to an EMF level of at least 2mG and no more than 5mG is associated with a dose-dependent and statistically significant 30 – 81% increase in risk of childhood leukemia.

Background Level

- Based on original analysis, determination that acceptable safe long-term exposure level for children should be less than 2 mG.
- In schools and residences and in target child population, the acceptable background level of EMF in an industrialized society is 0.6 mG.

Healthy Children Deserve Special Protection with Health Regulation

1. Small subpopulation (of healthy but vulnerable population) entitled to health regulatory policies
2. Public benefit to reduce risk.
 - WHO lists as an acceptable risk 1 per 100,000
 - Over-exposed population is a large proportion of children –2-5 per 100,00
 - Leukemia risk doubled in this group with increase 4 per 100,00
3. Locations of Special Concern
 - areas where children work and play

Algorithm for Protection of Children from Adverse Effects of EMF from Power Lines

- Underground
- Distance 300 foot safety buffer
- Other forms of Mitigation such as split phasing and pole heights.

FACT SHEET



John G. Rowland, Governor
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Electromagnetic Fields (EMF): Health Concerns



What Should I Do If A Home I Want To Buy Has High Voltage Power Lines Nearby?

If the power lines are more than 300 feet away, there should be no cause for concern. At this distance EMF levels from the power lines are no different from typical EMF levels outside or inside the home.

Adoption of Connecticut Law – Public Act 04-246

- EMF from high voltage transmission lines are a matter of public health concern.
- Focus on areas where children live, learn and play.
- Undergrounding in these areas and overheading in industrial areas shall have a rebuttable presumption of meeting a public benefit
- If Utility overcomes presumption of undergrounding by proving technically infeasible, must create safety buffer around overhead power lines to protect areas of special concern from EMF exposure.
- All prudent costs to comply with these requirements to be recovered by the electric distribution company in its rate base.

Connecticut Siting Council Decision

- Required Split Phasing near educational institutions.
- Increased height of towers adjacent to certain Statutory Facilities so as to increase the distance between the power lines and children.
- Approved original Application without consideration of legislation, protective measures of safety buffer zone.

Legal Response

- Woodbridge Educational Institutions filed an Appeal
- Failed to prove technologically infeasible to maximize undergrounding within close proximity to children
- Failed to provide disclosures of EMF levels of average, peak and maximum load.
- Settlement reached

Lessons Learned

- Diverse community-based approach to address public health concern
 - Scientific, medical, statistical, regulatory, economic, financial, legal, political
- Persistence
 - Statewide Siting Council
 - Statewide Legislative
 - State Department of Health
 - State Executive
 - Media

Conclusion

- Establish international standards for protecting children from harmful exposure to EMF.
- Algorithm is consistent with a policy to protect children.
- Implications of the Connecticut experience for other communities.