December 21, 2011

To: Members of the Two Storms Panel

Re: Roadside Trees and Utility Reliability

As you consider how to prevent the extensive electrical power and other utility outages that Connecticut residents recently endured due to two storms, the Garden Club of New Haven[1] and the Urban Resources Initiative[2] urge adoption of a comprehensive and balanced approach that recognizes the many benefits of protecting healthy trees along Connecticut's streets and roads from unnecessary removal and improper aggressive pruning. Such an approach is compatible with ensuring a reliable, protected supply of electric power and other utility services, and avoids the many negative consequences of tree loss in Connecticut's urban, suburban and rural communities.

Trees along Connecticut's streets and roads ("roadside trees") have environmental and economic benefits that should not be lost. A combination of focused and appropriate removal of dead, diseased and demonstrably weak trees, appropriate pruning of healthy trees to preserve their health, and strengthening of the utility distribution system to make it far less susceptible to storm damage is the balanced approach we favor. We first discuss the benefits of roadside trees, and then the policies we think should be adopted to preserve trees and provide reliable electric and other utility services.

The benefits of trees along Connecticut's streets and roads:

The Two Storm Panel has received a number of submissions outlining the significant benefits of roadside trees. (For example, see statement of Eric Hammerling, Executive Director of the Connecticut Parks & Forest Association, Attachment B, November 9, 2011 minutes.) We briefly

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[1] Promoting the preservation of natural resources is one of the primary missions of the Garden Club of New Haven ("GCNH") and of the organizations with which it is affiliated, the Garden Club of America ("GCA") and the Federated Garden Clubs of Connecticut, Inc. ("Federated"). GCNH has over 100 members in the greater New Haven area. Members of Connecticut GCA clubs total 1,565 and Federated members total 8,143.

[2] The New Haven Urban Resources Initiative (URI) is a not-for-profit organization whose mission is to foster community-based land stewardship, promote environmental education and advance the practice of urban forestry.

discuss some of these benefits,[3] and describe calculations of the monetary value of street trees in the City of New Haven, City of Milford and Portland, Oregon.

Energy conservation: Roadside trees lower ambient air temperatures and wind speeds, reducing the need for both air conditioning and heating in buildings. Thus, wholesale removal of trees along streets and roads would result in higher energy costs for Connecticut's residents and businesses, contrary to the Governor's goal of achieving lower energy costs.[4]

Air quality improvement: Lowered energy use due to trees helps air quality by leading to fewer emissions of pollutants. In addition, air pollutants are filtered from the air by being deposited on trees.

Carbon dioxide reduction: All plants absorb carbon dioxide (the most important greenhouse gas contributing to climate change), transforming it into stored energy. The relatively long life of trees makes them important repositories of carbon dioxide, which is especially critical in urban areas that are significant sources of carbon dioxide from traffic and industry.

Stormwater runoff reduction: Roadside trees and other vegetation filter pollutants collected on roads and parking lots, protecting water quality. They also slow water flow, preventing erosion, help to protect streams and rivers from sediment, and prevent flooding. Fishing, oyster farming and tourism all benefit from such protection.

Aesthetic appeal increases property values: Trees along streets and roadways increase the aesthetic appeal of adjacent properties, positively impacting the property values of those properties. A part of that positive impact may be due to the increased appeal of the roadways for social and physical activity, and the feelings of well being generated by the roadside tree environment.

Adaptation to climate change: Street trees, as part of the urban forest, help cities cope with climate change. According to he United Nation's Food and Agriculture Organization (FAO) urban forests protect cities from strong winds and flooding and buffer them from hot weather,

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[3] Suzanne Oversvee, Yale School of Forestry and Environmental Studies Master's Project, "Assessment of the Environmental Service Benefits of the City of New Haven's Street Tree Population," Spring, 2007, provides much the explanation of the first five benefits listed, at 4-7.

[4] Attachment E: DEEP Commissioner's Testimony to The Two Storm Panel Regarding Opportunities for Improved Storm Response and Potential Strategies for Improving Infrastructure Resiliency. Submitted by Commissioner Daniel C. Esty, Department of Energy and Environmental Protection, December 7, 2011 minutes at 3.

mitigating the effects of and helping cities adapt to climate change.[5] Again, lower density towns also benefit.

Traffic calming for safer travel: Roadside trees are important to traffic calming and thus to travel safety. Tree-lined roads cause motorists to drive more slowly and carefully.

Applying the U.S. Forest Service STRATUM [Street Tree Resource Analysis Tool for Urban-Forest Managers] model to a citywide inventory of New Haven, Connecticut's street trees in 2000, the economic value of New Haven's street tree population was estimated to be $4,036,796, with the highest proportion of the value due to energy savings ($1,699,820) and aesthetics/increased real estate value ($1,556,403). [6] The model does not include all the benefits listed above, focusing solely on energy conservation, air quality improvement, carbon dioxide reduction, stormwater runoff reduction, and aesthetics (measured by increased real estate values).[7] Milford, CT, using the same factors, calculated total benefits from its street trees of $2,090,748. (See submission of Chris Donnelly, Urban Forestry Coordinator, CT DEEP Forestry, Attachment A, November 18, 2011 minutes of Two Storm Panel.)

Portland, Oregon has measured the costs and benefits of its "urban canopy" and found that the city gets a $3.80 return on every $1 invested. It is initiating a tree asset management program that may lead to making its trees a bondable asset.[8]

Policies that should be adopted:

(1) Require all power and other utility lines to be placed underground in new business and residential developments, where geographically feasible.

(2) Replace old and deteriorating power lines and poles with underground lines where geographically feasible, provided that the construction would not result in extensive damage to trees along the road or street in question.

(3) If undergrounding is not feasible, replace weak poles and thin wires with strong poles and wires that are less vulnerable to damage from

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[5] "Cities on the frontline of global fight against climate change, UN officials warn," UN News Centre, October 3, 2011. http://www.un.org/apps/news/story.asp?NewsID=39917

[6] Oversvee, at 18.

[7] Oversvee, at 10-11.

[8] http://www.cnt.org/news/2011/10/26/money-doesnt-grow-on-trees-for-now/ [Center for Neighborhood Technology, founded in 1978]

falling branches or even trees. In his submission to the Two Storm Panel, the Director of Public Works in Manchester, CT, Mark Carlino, stated that there was substantially less damage in sections of town where CL&P had "hardened" the overhead power system than in areas with older construction. (Attachment F to Minutes of November 30, 2011 Two Storm Panel meeting.) In testimony to the Two Storm Panel on December 7, 2011, Erick S. Sonju, P.E., VP Power Delivery Planning & Design, Power Systems Engineering, Madison, Wisconsin, stated that New Hampshire Electric Cooperative had upgraded mainly to spacer cable "because of the tree issues" and that had increased power reliability. (December 7, 2011 minutes of the Two Storm Panel, at 1.)

(4) Require the electric utilities to remove unhealthy trees and prune trees appropriately both within their right-of-way and on the opposite side of the street or road that could cause an interruption of utility service. Many power outages occurred from trees falling across the roads to hit utility lines during both of the storms.

(5) Require that the tree warden survey roadside trees on a regular basis and promptly notify the appropriate utility of the need for removal or pruning of trees or vegetation in order to prevent damage to the utility's lines and poles. Such removal and pruning should continue to be done at the utility's expense, regardless of whether the tree is in the utility's right-of-way or across the road.

(6) The tree warden should continue to approve and supervise all removal and pruning of trees within each municipality. This will ensure that only unhealthy trees or trees that cannot be pruned to be compatible with utility lines will be removed. Proper pruning will lead to stronger, healthier trees, better able to withstand storms. (See http://hort.ufl.edu/woody/wind-research.shtml, a University of Florida study showing that pruning reduces damage to trees from 120 mph winds.) The Connecticut Tree Wardens Manual, 2nd edition, May, 2001 sets forth pruning guidelines and states that rigid corridor distances should not be followed indiscriminately by pruning crews, recommending that consideration be given to the individual tree structure and species in order to leave strong limbs and branches.

(7) Property owners should be regularly informed by the tree warden and/or utility as to what trees are compatible with utility lines along the roadside so that any planting or replanting after tree removal follows the principle of "right tree for the right place." They should also be requested to alert the tree warden to trees that may require pruning or removal.

(8) Require that all tree wardens and their deputies be certified by the Tree Warden Association of Connecticut or be Connecticut licensed

arborists, and ensure that municipal budgets are sufficient to permit them to properly perform the work required. Many tree wardens are not certified, and many tree warden budgets are clearly inadequate in many municipalities. (Attachment A, November 18, 2011 minutes of the Two Storm Panel, Urban Forestry: A Brief Overview of a Few Key Issues, 11/17/2011, submitted by the CT DEEP Forestry.)

Thank you for considering our comments. We are confident that Connecticut can continue to preserve the significant benefits of its roadside tree canopy by hardening the utility infrastructure and properly caring for roadside trees.

Very truly yours,

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