Street Trees: An Analysis of Undergrounding Power Lines in the Northeastern Suburbs

Lavallee, Lucia (School: Pelham Memorial High School)

Trees, especially older and mature trees, provide communities with numerous environmental benefits. These environmental benefits lead to improved community health and reduced spending. This beneficial tree growth, however, is often limited by above ground power lines and the poor tree maintenance practices used to prevent these lines and tree branches from touching one another. Because global warming is leading to weather events that will likely increase the number of tree/power line interactions, many have proposed placing these power lines underground. The opposition to this solution claims that this new infrastructure would be too expensive, but previous research has failed to examine the net cost while accounting for the values trees provide to a community. This study looked to examine the value of trees in an existing suburb to obtain a baseline of this value. Street blocks were randomly sampled and trees were mapped. The value of these mapped trees was then calculated using the National Tree Benefit Calculator. It was found that the value of trees reduced the undergrounding cost by 0.5%. While this is not enough to offset the cost of undergrounding or substantially reduce it, it does suggest that trees hold value in communities. As adverse weather events increase, it is possible that this procedure will become more necessary in the future and the cost could be reduced by planting more community trees.

Awards Won: