The Center for Biodiversity and Ecosystem Stewardship
Villanova University
Villanova, PA 19085

April 13, 2022

Regarding: 1800 W Montgomery and 1835 County Line
Application number: 3833 pp

Planning Commission of Lower Merion Township
Building and Planning Committee of Lower Merion Township
Board of Commissioners of Lower Merion Township
Any Other Officials, Boards or Groups with Jurisdiction

Dear Madams and Sirs,

We are writing to register a comment on the proposed destruction of the forest at 1800 W Montgomery and 1835 County Line.

As a team of ecologists and biodiversity experts, the Center for Biodiversity and Ecosystem Stewardship (CBEST) values natural ecosystems, including local ones. We have worked to preserve and restore natural ecosystems on campus at Villanova, and our concern extends to the surrounding area. Villanova sits adjacent to a 14-acre forest (1835 County Line Road/1800 Montgomery Avenue) which includes many large, mature, native trees that the Lower Merion School District has proposed to eliminate for supplementary athletic fields. CBEST opposes the removal of this forest, and encourages the school district to seek other non-destructive solutions for meeting demand for playing fields.

An analysis by an ecology class estimated that removal of this forest would release 4640 metric tonnes of CO_2 over 15 years, the time frame that climate scientists say is key to slowing climate change. Replanting trees to offset the loss of the forest does little to mitigate this emission over this time frame. Over fifty years, the net emissions grows to 5500 metric tonnes CO_2 as soil continues to lose carbon from the disturbance before the young trees begin to gain an appreciable amount of the carbon. The net CO_2 released from removing this forest will negate over half the annual CO_2 emissions savings (8,300 metric tons) attributable to Lower Merion's conversion to 100% renewable energy. Beyond storing carbon, the forest also provides direct cooling effect of shade and evapotranspiration, the interception of particulate and ozone pollution from automotive traffic, absorption and purification of stormwater, and hosts ample biodiversity.

We estimated the CO_2 emissions above because they are relatively easy to quantify, but exacerbating climate change should not be the only consideration in whether to remove a forest. If humanity eliminated greenhouse gas emissions tomorrow, we would still be in the midst of another ecological crisis, the loss of biodiversity. While climate change and biodiversity loss are intertwined in important ways, the two crises exhibit key differences. For example, climate change is a very global problem. The CO_2 we emit rapidly spreads out to warm the entire world. The biodiversity crisis is much more local in its causes and effects. The primary driver of the biodiversity crisis is habitat loss, most commonly in the form of a natural ecosystem being converted to agricultural or developed for some other human use. The phrase "habitat loss" evokes images of tropical rainforest being slashed and burned for pasture or agriculture, but we in the eastern US have a much longer and more intensive legacy of destroying habitat. Nearly every wooded acre in Pennsylvania has been logged, and a large portion of land in relatively southeastern PA has been intensively tilled for cultivation of crops. As farming has waned in the region, the dominant post-agrarian land-use change has been to pavement, buildings and lawns. While looking at the western suburbs of Philadelphia from above shows a highly vegetated area, stands

of intact, mature, native forest are rare. Large native trees are the base of our food web that supports insects, amphibians, reptiles, birds and mammals, but many older trees are dying and not being replaced. Where we allow them to grow, many of our trees are immature, isolated and non-native, all properties that hamper the flourishing of local biodiversity.

A commonly overlooked but critical part of mitigating both crises, climate change and biodiversity loss, is preservation of natural lands. Natural ecosystems sequester vast amounts of carbon and sustain our rarest species. Tree-planting has been suggested as a tactic to mitigate climate change, and young trees are often planted to offset loss of older trees during development. We maintain that tree planting cannot offset the losses of biodiversity or carbon from mature forests in the time frame required to forestall our biodiversity crisis or to slow climate change. Our most valuable tool in combatting these competing crises is the forest that is *not* destroyed. CBEST encourages local municipalities to properly value the unique benefits of native biodiversity. We must recognize that the while the initial loss of biodiversity results from a local decision, the consequences cascade beyond property lines to affect us all.

The views expressed herein reflect the scientific opinions of the authors and not the views of Villanova University.

Sincerely,

The Center for Biodiversity and Ecosystem Stewardship (CBEST)
Villanova University

For questions: contact Adam Langley adam.langley@villanova.edu