FRIENDS OF RYE NATURE CENTER

October 29, 2026

Mr. Brian Shea, City Manager
Rye City Hall
1051 Boston Post Road
Rye, NY 10580

Re: Permission to Apply for a NYS DEC CoRe Grant

Dear Mr. Shea,

Thank you for your continued support of Friends of Rye Nature Center (FRNC) and for your partnership in advancing improvements to the Nature Center's facilities and grounds.

As the sole owner of the Rye Nature Center property, the City of Rye is an essential partner in its stewardship and improvement. Under a long-term operating agreement lasting through 2056, FRNC is entitled to use, operate, and manage the property as a licensee.

Per this agreement, FRNC must notify the City of its intention to apply for any capital project-related grant of $25,000 or more. FRNC is requesting that the City of Rye endorse Friends of Rye Nature Center's application for a grant through New York State's 2026 DEC Community Reforestation (CoRe) program and authorize FRNC, if awarded, to accept these grants. The CoRe Grant Program supports projects that restore forested natural areas in New York's urban communities. It is part of the Clean Water, Clean Air and Green Jobs Environmental Bond Act and contributes to Governor Hochul's "25 Million Trees Initiative".

FRNC is seeking $300,000 in funding to be spent over five years in order to create three new deer exclosures and plant new trees that will support the long-term health of the forest. The scope of the project includes the installation of three new 8-foot-tall deer fences that will protect 10.80 acres; planting 540 native trees, shrubs, and herbaceous plants; and invasive species management. If permission is granted, we will apply for the necessary permits for installation of deer fencing. Any resulting grant agreements will be entered into between FRNC and the respective awarding agencies.

Attached to this memo you will find a project workplan, a map, and photographs.

Thank you for your consideration and continued partnership.

Sincerely,

Christine Siller

Christine Siller, Executive Director

873 Boston Post Road, Rye, NY 10580 ◆ Phone: 914.967.5150 ◆ Fax: 914.921.5968

Friends of Rye Nature Center

NYSDEC CoRE Grant Deer Fence Work Plan

Background:

The New York Natural Heritage Program defines an Oak/Tulip Tree Forest as a "mesophytic hardwood forest community that occurs on moist, well-drained sites in southeastern New York. The dominant trees include a mixture of oaks, tulip tree, American beech, black birch, and red maple. The subcanopy often includes flowering dogwood, and common understory associates include witch hazel, sassafras, and lowbush blueberries. The herb layer is moderate to sparse and may include New York fern and white wood aster." This definition matches RNC's Oak/Tulip Tree Forest, with much of the forest dominated by red oak (*Quercus rubra*), red maple (*Acer rubrum*), hickories (*Carya* spp.), sweetgum (*Liquidambar styraciflua*), and some tulip trees (*Liriodendron tulipifera*). The Oak/Tulip Tree Forest covers nearly 28 of the 47 acres at Rye Nature Center, making it the largest habitat within the park.

This habitat is experiencing a few major issues, the first of which is excessive deer browsing, leading to large forest patches that are empty of shrub and ground cover, large patches filled with invasive plant cover, or monocultures of catbrier (*Smilax rotundifolia*). Catbrier is a native vine that can provide suitable hiding places for small mammals but will quickly take over empty spaces. In doing so, it can reduce the number of seeds that reach the ground. White-tailed deer have evolved to eat native plants due to their palatability and nutritional value. Invasive plants are often bitter and lacking in important nutrients, making them undesirable to deer. Deer populations have increased to unsustainable levels over the years, leading to overbrowsing of ground cover plants and tree seedlings.

Regeneration is largely stunted within the park due to deer browsing on young tree saplings. In the previous Forest Management Plan, written by Laura Green, the average basal area for the Oak/Tulip Tree Forest was 115 ft^2, with an average of 241 trees per acre. In 2024, the forest was found to have a basal area of 132 ft^2, with an average of 189 trees per acre. These numbers demonstrate how regeneration has slowed, with fewer trees in the forest due to the loss of older trees and a lack of new growth. This has provided space for mature trees to grow outward, creating a greater amount of basal area within the forest.

The effects of deer browsing on the forest's understory and regeneration are easily noticed when walking through the park. This browsing has created space for introduced species to invade, to a greater extent than in ecologically healthy forests, where native species provide a natural barrier. The invasive species of greatest concern are Japanese stiltgrass (*Microstegium vimineum*), Japanese wisteria (*Wisteria floribunda*), lesser celandine (*Ficaria verna*), and Japanese knotweed (*Reynoutria japonica*).

As a result, it is imperative to have a deer management program in place to reduce both impacts.

Larger-scale strategies have involved the creation of large deer exclosures with permanent 8-foot-tall fencing structures. The goal of these fencing structures is to inhibit deer movement into the chosen habitats to protect regeneration (Fig. 3). The first deer exclosure was implemented in 2014 and covers about 4 acres on the north end of the property. A second deer exclosure was installed in December 2022 and surrounds 1.5 acres near the center of the preserve.

2014 North Existing Deer Fence Results

Due to the reduction in deer browsing, saplings have increased. The average DBH (diameter at breast height, measured 4.5 feet above the ground) was found to be 9 inches, compared with an average of 11.34 inches in the forest outside the fence. This suggests a greater number of young saplings, which has led to a greater number of trees and slightly more basal area. The future forest structure will most likely include a midstory canopy of black gum and sassafras, as well as a canopy layer of black cherry, sweetgum, oaks, and red maples.

The understory in this location is much more robust, with a greater diversity of native species found in the spring. Plant growth covers a substantial portion of the area, with 57% of each plot covered by vegetation. Sixteen percent of the plot space was covered by shrubs. This dense ground cover and sparse shrub layer are typical of Oak/Tulip Tree Forests. There is a much lower percentage of invasive species coverage in this area, with only 18% of the ground cover consisting of invasive or introduced species. Slightly over 1% of the space was covered by woody or shrubby invasive plant species. This is a great improvement over the same forest type directly outside the fenced area.

Work Plan

<u>Fence</u>

Construct three new 8-foot-tall deer fences encompassing a total of 10.80 acres to restore natural regeneration and ecosystem function to the forest. The areas enclosed by the existing fence and the proposed locations of future fences are shown in Figure 1 below. The proposed fence areas are as follows:

- 1,778 feet and 4.32 acres
- 2,365 feet and 4.28 acres
- 1,456 feet and 2.20 acres

This will add to the existing 6.89 acres enclosed by two deer fences, bringing the total fenced area to 17.69 acres out of the 47 acres at Rye Nature Center. This should immediately promote the regeneration of species already present in the overstory and midstory, including *Quercus alba*, *Quercus rubra*, *Quercus coccinea*, *Lindera benzoin*, *Acer rubrum*, *Betula lenta*, and *Prunus serotina*.

Plantings

Reducing deer browsing will significantly improve the forest's short- and long-term health, but the fence alone will not immediately put the forest's composition, structure, and function on the desired trajectory. Native plantings will be needed to reintroduce species that may have been excluded over time due to heavy deer browsing, provide structural diversity to the forest to help prevent even-aged stands, and accelerate forest regeneration in a forest that has not experienced consistent regeneration in over 25 years.

The majority of our upland forests are either Oak-Tulip Tree Forests or Pitch Pine-Oak Forests. The planting density will be 50 plants per acre, for a total of 540 trees, shrubs, and herbaceous plants. We will use the following planting palettes from the New York Natural Heritage Program to help guide planting decisions.

Oak-Tulip Tree Forest

Trees greater than 5 m tall

- *Acer rubrum* var. *rubrum* (common red maple)
- *Acer saccharinum* (silver maple)
- *Betula lenta* (black birch)
- *Carya cordiformis* (bitternut hickory)
- *Carya glabra* (pignut hickory)
- *Fagus grandifolia* (American beech)
- *Liriodendron tulipifera* (tulip tree, tulip poplar, yellow poplar)
- *Quercus alba* (white oak)
- *Quercus coccinea* (scarlet oak)
- *Quercus rubra* (northern red oak)
- *Quercus velutina* (black oak)

Shrubs 2–5 m tall

- *Hamamelis virginiana* (witch-hazel)

Shrubs less than 2 m tall

- *Lindera benzoin* (spicebush)
- *Vaccinium angustifolium* (common lowbush blueberry)
- *Vaccinium pallidum* (hillside blueberry)

- *Viburnum acerifolium* (maple-leaved viburnum)

Tree saplings

- *Carpinus caroliniana* ssp. *virginiana* (musclewood, ironwood, American hornbeam)
- *Castanea dentata* (American chestnut)
- *Cornus florida* (flowering dogwood)
- *Prunus serotina* var. *serotina* (wild black cherry)
- *Rubus allegheniensis* (common blackberry)
- *Sassafras albidum* (sassafras)

Vines

- *Parthenocissus quinquefolia* (Virginia-creeper)

Herbs

- *Allium tricoccum* var. *tricoccum* (common wild leek)
- *Arisaema triphyllum* ssp. *triphyllum* (common jack-in-the-pulpit)
- *Asarum canadense* (wild ginger)
- *Athyrium angustum* (northern lady fern)
- *Chimaphila maculata* (spotted-wintergreen)
- *Claytonia virginica* (eastern spring-beauty)
- *Conopholis americana* (oak-drops)
- *Epifagus virginiana* (beech-drops)
- *Eurybia divaricata* (white wood-aster)
- *Geranium maculatum* (wild geranium)
- *Maianthemum racemosum* ssp. *racemosum* (false Solomon's-seal)
- *Mitchella repens* (partridge-berry)
- *Monotropa uniflora* (Indian-pipe)
- *Polygonatum biflorum* var. *biflorum* (small Solomon's-seal)
- *Polystichum acrostichoides* (Christmas fern)
- *Pyrola elliptica* (common shinleaf)

- *Thelypteris noveboracensis* (New York fern)
- *Trillium erectum* (purple trillium, stinking Benjamin)

Pitch Pine-Oak Forest

Trees greater than 5 m tall

- *Acer rubrum* var. *rubrum* (common red maple)
- *Pinus rigida* (pitch pine)
- *Pinus strobus* (white pine)
- *Quercus alba* (white oak)
- *Quercus coccinea* (scarlet oak)
- *Quercus rubra* (northern red oak)
- *Quercus velutina* (black oak)

Shrubs 2–5 m tall

- *Quercus ilicifolia* (scrub oak, bear oak)
- *Vaccinium corymbosum* (highbush blueberry)

Shrubs less than 2 m tall

- *Gaylussacia baccata* (black huckleberry)
- *Vaccinium angustifolium* (common lowbush blueberry)
- *Vaccinium pallidum* (hillside blueberry)

Herbs

- *Carex pensylvanica* (Pennsylvania sedge)
- *Gaultheria procumbens* (wintergreen, teaberry)
- *Maianthemum canadense* (Canada mayflower)
- *Pteridium aquilinum* ssp. *latiusculum* (eastern bracken fern)

Invasive Species Management

One of the most effective management actions for controlling invasive species is usually deer management, as demonstrated by the reduced population of Japanese stiltgrass (*Microstegium vimineum*) in our 2014 North Existing Deer Fence area. This is due to deer selectively browsing native species over invasive species because of their natural preference for the native plants with

which they have coevolved over millions of years. Reducing this pressure helps native species become established and outcompete invasive populations. However, an invasive species management plan will also be needed to help control invasive populations and prevent them from outcompeting native regeneration and our new plantings while the forest restores itself.

The upland forest already has established invasive species populations, as illustrated in Figure 2, which shows our 2026 invasive species population map. There will likely always be a need for invasive species maintenance in our forest, but the first three to five years after deer fence construction will be the most critical for ensuring that the forest's composition, structure, and function remain on the desired trajectory. This management plan may consist of:

- Year-to-year monitoring of invasive species populations
- Foliar herbicide spraying
- Cut-stump herbicide treatments
- Cutting and mowing
- Hand-pulling



Existing South Deer Fence



Proposed South Deer Fence Area



Proposed West Deer Fence Area



Proposed North Deer Fence Area



Proposed East Deer Fence Area

FRIENDS OF RYE NATURE CENTER

NYDEC CoRE Grant - Deer Fencing

Legend

- Trails
- Proposed Deer Fences
- Existing Deer Fence
- ProposedPlantingAreas

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0 0.02 0.04 0.09 Miles

