

# Dwyer Park

## Forest Inventory & Risk Tree Inventory Community Forest Management Plan (CFMP)

### CFMP Drafting and Planning Stakeholders Meeting

Cortland County, NY

Produced by:

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## **Introduction**

### ***How it Started/Vision Statement***

Who are all the stakeholders and what is the project vision for Dwyer Park?

Stakeholder list:

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Develop a vision statement for the CFMP with the stakeholder group:

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### ***DEC Program***

This project was funded by the NYS Department of Environment Conservation's Urban and Community Forestry Program.

### ***Purpose/Process/Scope***

LBS Ecological and AMRO Forestry, on behalf of Cortland County, are preparing this Community Forestry Management Plan as a technical and planning document for trees and forest stands located within Dwyer Park. As a technical guidance document, the Community Forestry Management Plan will identify current conditions of trees and forested areas within the Park. As a planning document, the Community Forestry Management Plan will provide a baseline of information regarding the issues/opportunities/constraints for Urban Forestry in Dwyer Park and identifies and provides management recommendations. Ultimately, the purpose of this meeting is to get stakeholders involved in the project at an early stage, and to solicit thoughts and guidance in planning.

The project will address forest health and ecological deterioration of the community forest in Dwyer Park, which is triggered in part by a lack of natural regeneration, wildlife conflicts (deer, beavers), invasive plants and competing vegetation, forest pests and diseases (emerald ash borer, etc.), and a lack of regular tree management and maintenance (planting, routine tree maintenance). The project will promote the re-creation of the conditions for a healthy ecosystem, investing early in a long-term and self-sustaining forest health that delivers enormous value to residents and visitors for decades.

The project is comprised of a Complete Forest Inventory including a Risk-Tree Inventory and Planting Site Inventory, and the development of a custom Community Forest Management Plan (CFMP) for Dwyer Park. LBS Ecological and AMRO Forestry during the course of the project have

met with County staff, DEC staff, Cortland County Soil and Water Conservation District staff, as well as a group of project stakeholders (Friends of Dwyer Park, Little York Lake Preservation Society, others...), to agree on and document the long-term vision for the forest, and to identify the key challenges to the management of the park. A public meeting will be held later in the fall to engage county residents, as public outreach and education is critical to long-term tree stewardship.

### *Complete Forest Inventory*

The inventory included all trees within the right-of-way of roads, trails, and park/pavilion/parking/picnic/access points. The tree inventory contains the following information:

1. Column headings and description of column content
2. Genus, species, and common names (cultivars when known)
3. Measurement of tree DBH (diameter at breast height) in inches
4. Address (park area and X and Y GPS coordinates)
5. Multi-stem tree
6. Condition
7. Maintenance needs (including planting sites with size)
8. Risk/Defects (Root, Trunk, Crown)
9. Tree risk assessment and rating
10. Residual risk
11. Further inspection
12. Overhead utilities
13. Notes, comments, and observations
14. Date and staff of inventory
15. Inventory report (hardcopy and electronic for distribution)
16. i-Tree Eco Report

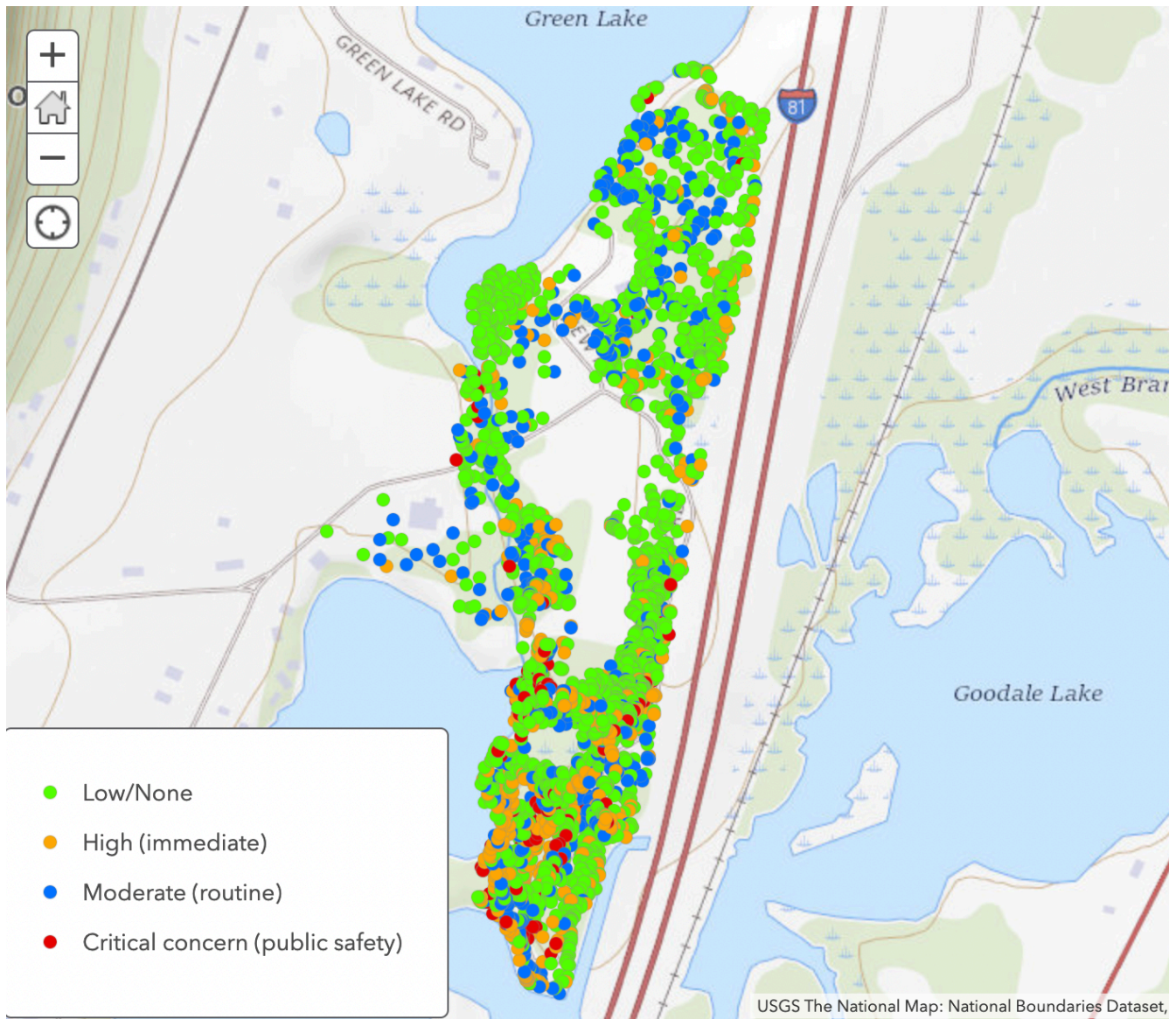
### *Risk Tree Survey*

As part of the complete inventory, all trees were inventoried within 30' of hiking trails, and 50' of trafficked and open areas within Dwyer Park for Risk. Risk trees were identified, GPS located, and then assessed as mentioned above.

For Maintenance Recommendations, the inventory reveals that there are:

- 124 Critical Concern (Public Safety) Trees;
- 606 Immediate (High Risk) Trees;
- 561 Routine (Moderate Risk) Trees;
- 2202 None (Low Risk) Trees

## Risk Tree Map



### *Risk Tree Maintenance Recommendations and Prioritization*

A five-year risk tree management cycle based on the tree inventory data is being developed to support Cortland's vision for preserving Dwyer Park's urban forest. The program is being designed to reduce risk through prioritized tree removal and pruning, and a routine pruning cycle for moderate risk trees.

Any notes or questions about Complete Inventory and Risk Tree Survey?

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*Planting Site Inventory*

Urban forests provide a diverse assortment of benefits ranging from environmental and ecological to social and economic. While maintaining existing trees for long term sustainability can help protect the sources of these benefits, re-planting or establishing new trees is an important factor as well.

Preliminary goals for planting in the Dwyer Park are:

1. Plan to grow the urban forest. Plant 10-20 trees each year in order to increase urban tree canopy.
2. Plant trees in areas of the Park that have low canopy coverage and small planting numbers.
3. Add to the diversity of the urban forest tree composition.
4. Avoid the planting of undesirable trees or invasive trees
5. Plant appropriate trees in appropriate places (use proper species and zone choices, avoid infrastructure/wire conflicts)
6. Create appropriate spaces for planting

A planting site inventory will also be completed for the park to direct future planting and diversification. Planting sites identified will be prioritized based on functional and structural values and needs. Factors noted on the planting site inventory will be *Stratum, Location (Lat/Long), Small/Medium/Large Tree Suitability*. A Tree Planting List by Stratum will be created to accompany the planting site inventory, offering options of best suited tree species for the Parks different land use areas.

What are other planting goals? Where do the stakeholders prefer plantings to be located?

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*Community Forest Management Plan*

A forest management plan will be developed to help managers recognize priority and proactive tree management tasks, know the value of community trees, and project realistic, multi-year budgets for their care. The tree inventory data is the basis for assessing the composition, structure, and function of the Park’s tree population.

Data analysis includes a structure and composition analysis for species condition and distribution, leaf area and biomass, species importance values, diversity indices and relative performance, and a functional impact analysis for pollution removal and human health impacts, carbon sequestration and storage, hydrology effects (avoided run-off, interception, transpiration), building energy effects, and tree bio-emissions. The plan will detail findings from the data analysis, and using that data along with industry standards, risk management goals, and best management practices, will report on the status of the county’s community forest at Dwyer Park and prioritize tree maintenance needs, including a multi-year maintenance schedule and cost spreadsheet.

The inventory and plan will provide maintenance personnel and county decision makers information on

risk and maintenance needs, and data to support impacts and costs associated with various management options. LBS Ecological and AMRO Forestry will produce a Community Forest Management Plan based on an environmental benefits analysis that includes:

- An executive summary and a vision for the long-term community forest including strategies to care for the community trees.
- The use of the tree inventory which identifies management needs i.e. pruning rotations, removal implementation, and prioritization of workload.
- The development of budgets and work plans, including timelines and tasks, to meet that vision.
- i-Tree Eco benefit analysis of environmental issues such as: water quality, air quality, reduce urban heat island effect, energy efficiencies, storm water management, and health.
- Operations review of Park Maintenance, and role delineation for Advisory Committee and stakeholder groups (Friends of Dwyer Park, etc.)
- Basic in-house training/meeting of responsible staff by the contracted consultant that will provide guidance to all those involved with ongoing maintenance of the Tree Inventory, and implementation of the CFMP.
- Basic storm preparedness and response planning.
- Basic invasive species preparedness and response planning – how will the community plan address threats specific to each species.
- Planting recommendations to address the unique characteristics of park such as: species diversity, understory plantings, and erosion control/water quality.
- References, Glossary, and Appendices

Any questions or comments about the CFMP?

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## **Dwyer Park Background**

### ***History***

Dwyer Park is situated on Little York Lake, one of a series of kettle bail lakes around Cortland County. The earliest information about Little York Lake is found on a map of the Onondaga Trail accompanying an article by Paul A.W. Wallace entitled "Conrad Weiser and His New York Contacts" published in the New York State's Historical Association's quarterly magazine "New York History", April 1947.

Next to the lake on the west is a mountain labeled "Onogarechny Mountain", or Mount Toppin, with the notation "where Indian corn, tobacco, squash and pompions were first found by the natives". Other, wilder legends about the lake include a well-hidden medicinal spring which gave the drinker everlasting youth; a submerged city with temples, mills and streets, and a macabre reference to redheads burning up if they so much as took a sip of the lake's water.

Legends notwithstanding, Little York Lake was a hidden treasure, with the low visibility granted to rural locations before widespread use of the automobile. It caught the eye of the Cortland Traction Company, which sought to boost its profits by installing a park with the goal of luring a large number of county residents to recreational opportunities in this peaceful and remote country setting. The company already operated Salisbury Park off of Elm Street in the city, but wanted to extend their opportunities outside city boundaries, thereby increasing their fares.

The company purchased farmland at the quieter northern end of the lake, the southern end being used at the turn of the twentieth century for summer resorts. A striking pavilion was built by Cephas B. Barker of Newark Valley, and probably designed by him also. It was patterned in stick-style architecture with a tall, angular form, and steep, intersecting gables with visible roof rafters. Much of the wood used in the construction was sawn on site, with some being salvaged from the old structure at Salisbury Park. The latter was torn down and brought on flat car to the Little York site. The large porches with their diagonal bracing and second level with stick work railing were later added.

The park entertained the public through picnics, dances, band concerts, and water activities. It remained a popular destination until the 1930's, when competition with the automobile simply drove the Cortland Traction Company out of business. The park lay dormant until the 1950's, when Cortland County purchased it with remaining funds from the Post-War Planning account for use as a county park.

The park was renamed "Dwyer Park" in 1959, to honor longstanding county superintendent of highways William Dwyer, "...as a memorial to the vision, loyalty and devotion to public service of this great public servant." Today there are nature trails, boating, softball, horseshoes, picnic and play areas to entertain the public, along with yearly fireworks on July 3rd. The pavilion is still busy with catering and fine theater in the summer.

While the park is a widely used resource, there is little record of the ecological makeup of the property. The tree inventory and Community Forest Management Plan project to determine the types, quantities, location and health of its community forest, and to develop a plan for future management activities is a priority.



Any more insight or info on park history or historical photos to add to this description?

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***Current Park Planning, Management, and Maintenance***

Planning, Management, and Maintenance of Dwyer Park is accomplished by the County Highway Department. In recent years additional capacity to support for the park has been offered from the CCSWCD.

How does this work exactly?

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***Previous Dwyer Park Conservation Projects***

CCSWCD partnered with Finger Lakes Partnership for Regional Invasive Species Management (PRISM) in 2020 to conduct an exploratory terrestrial invasive species survey throughout the park in order to record which invasive species are present and to understand their population distributions. The survey was conducted to provide local land managers and environmental decision makers with essential baseline data in order that they may understand and properly address the current conditions of the park. This data is available to enhance the Community Forest Management Plan.

*Can we get a copy of this?*

CCSWCD, with support from Cortland County, has planted trees in the park as a riparian buffer. Protecting local water resources adjacent to the community forest area is a priority. A local community group, Friends of Dwyer Park, has also been actively promoting tree management and planting in the park for aesthetics and diversity. The Friends will be engaged by CCSWCD as a stakeholder group during CFMP development.

Any other projects to mention here? Signage to protect trillium, etc., others?

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***Education, Community Involvement and Public Input***

Recognizing that increasing residents' ownership of the health of our trees will positively impact the community forest, the project has an emphasis on outreach and education of the public in the benefits of trees and maintenance of the forest.

Any Prior Education or Tree/Park related Community Involvement?  
Via Friends of Dwyer Park and the Little York Lake Preservation Society?

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There will be a public presentation when the Plan is near-complete, to present the project to County citizens, solicit public opinion, and galvanize support for Park and volunteer efforts.

## Forest Inventory Analysis

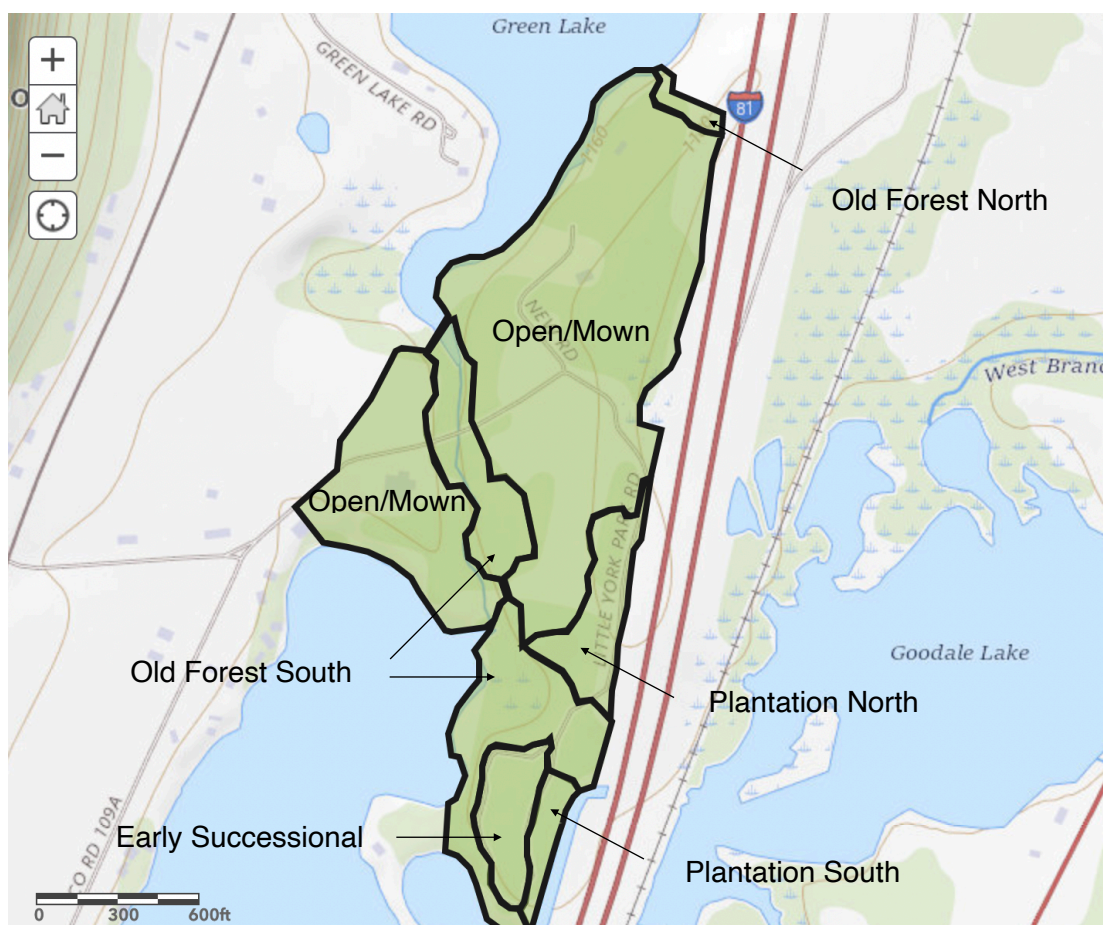
### *Methodology*

Understanding an urban forest's structure, function and value can promote management decisions that will improve human health and environmental quality. An assessment of the vegetation structure, function, and value of Dwyer Park's urban forest was conducted during 2022. Complete inventory data from six forest stands/strata were analyzed using the i-Tree Eco model developed by the U.S. Forest Service, Northern Research Station.

### *Forest Stand Delineation, Stratum*

A forest stand is a contiguous community of trees sufficiently uniform in composition, structure, age and size class distribution, spatial arrangement, site quality, condition, or location to distinguish it from adjacent communities. The forest of Dwyer Park is a collection of these stands, or strata. For management purposes, Dwyer Park was broken into 6 separate stands/strata, numbered 1-6. Each stand is biologically and geographically distinct.

Stands are depicted on a map below, and described in detail in the following section.



## **Data Analysis**

ITREE ECO analysis consisted of several factors: *tree characteristics of the urban forest, urban forest cover and leaf area, air pollution removal by urban trees, carbon storage and sequestration, oxygen production, avoided runoff, structural and functional values, and potential pest impacts.*

### *i-Tree Ecosystem Analysis, Urban Forest Effects and Values*

Data from the inventory of Dwyer Park were analyzed using the i-Tree Eco model. i-Tree Eco is designed to use standardized field data from forest plots and local hourly air pollution and meteorological data to quantify urban forest structure and its numerous effects (Nowak and Crane 2000), including:

- Tree Characteristics and urban forest structure (e.g., species composition, tree health, leaf area, etc.).
- Amount of pollution removed hourly by the urban forest, and its associated percent air quality improvement throughout a year.
- Total carbon stored and net carbon annually sequestered by the urban forest.
- Effects of trees on building energy use and consequent effects on carbon dioxide emissions from power sources.
- Structural value of the forest, as well as the value for air pollution removal and carbon storage and sequestration.
- Potential impact of infestations by pests, such as Asian longhorned beetle, emerald ash borer, gypsy moth, and Dutch elm disease.

All field data were collected during the leaf-on season to properly assess tree canopies. Data collection included tree cover, and individual tree attributes such as species and stem diameter (Nowak et al 2005; Nowak et al 2008).

\*See iTree Printout for data analysis

## **Recommendations – FORESTRY**

*Municipalities throughout NY and around the world are investing in urban forest restoration to protect native forest ecosystems as a form of green infrastructure. The aim is that these forests will develop into naturally-regenerating native forest stands. However, woody plant regeneration and recruitment is often cited as the most limiting factor to creating self-sustaining urban forests. As such, there is interest in site treatments that promote recruitment of native woody species and simultaneously suppress woody non-native recruitment. Findings from several studies suggest that combinations of site intervention (tree planting, invasive removal, etc), paired with an full canopy forest, may be most effective for promoting regeneration of native species resulting in more self-sustaining urban forests (Doroski et al. 2018).*

*These studies have also shown that, compared with unrestored sites, improvements in species diversity, greater forest structure complexity, and evidence of the regeneration and retention of native tree species is found in restored sites. In addition, differences were revealed in restoration outcomes depending on the level of intervention: clearing exotic shrubs and vines and planting native trees and shrubs improved tree diversity and canopy closure to a greater extent than clearing exotics alone, and the mechanical removal of invasive plants after the native plantings further improved some measures of restoration, such as tree species diversity and native tree regeneration. The results of these study suggest that the goal of a sustainable forest ecosystem dominated by native trees and other plant species may not be achievable without continued human intervention on site (Simmons et al. 2016, Johnson and Handel 2015).*

### **Mitigating the Forest Health Issues in Dwyer Park -**

Most regeneration of hardwood forests occurs naturally, without planting trees, but many factors can affect forest regeneration. To regenerate naturally, the current forest must produce seedlings, stump sprouts, and root suckers that will become the next forest. The right conditions are necessary for forests to regenerate naturally. Unfortunately, the "right conditions" have not been met in Dwyer Park.

In Dwyer Park there are three defining factors affecting forest regeneration, which we will address with practices to help grow the forest sustainably. These three factors are *wildlife conflicts - deer and beavers, competing invasive vegetation*, and *ash death and light on the forest floor*.

Wildlife Conflicts - Deer and Beavers –Like many communities in NY, the Cortland County has a significant white-tail deer population that has resulted in numerous negative impacts, including car-deer collisions, Lyme disease, property damage, and in Dwyer Park an overbrowsing of the forest. Through selective feeding, deer have broadly affected the forest plant communities. Specifically, they have reduced tree seedling numbers, seed availability, species composition, and seedling height. They have also affected herbaceous plant composition as they browse on some species and ignore others (which tend to be invasive plants). In Dwyer Park, overbrowsing has begun to deplete the habitat, and the deer are creating significant effects.

Beavers are another native animal that is affecting the Park's trees. Beavers live in the surrounding lakes and waterbodies, and due to their feeding/building habits the beavers are killing many large and small trees along the lake and riparian corridor.

Competing Invasive Vegetation - Competing vegetation consists of plants that interfere with the germination and growth of desirable seedlings by casting dense shade across the forest floor. Some competing plants also provide cover for small mammals that feed on tree seeds and seedlings. Several factors favor the development of competing vegetation. Many interfering plants tolerate shady understory conditions and are not typically browsed by deer. Some, such as buckthorn, are also invasive, meaning they spread rapidly and suppress native plant communities. Competing plants are similar to weeds in your garden--they interfere with the establishment and growth of your future crop. Undesirable trees and plants can take over a forest just as weeds can take over a garden.

Ash Death - Light on the Forest Floor - The amount of sunlight reaching the forest floor plays a key role in determining which tree seedling species will germinate and grow. Tree species have different requirements for sunlight, a factor referred to as shade tolerance. Examining the shade-tolerance classes of the majority of desirable trees in Dwyer Park, we find they fall into two different shade-tolerance classes: intermediate and tolerant. Most undesirable and invasive trees and shrubs fall into the intolerant class. Understanding the shade-tolerance characteristics of desirable and undesirable species forms the basis for developing forestry operation prescriptions. With the death of many Ash trees due to Emerald Ash Borer, the canopy in Dwyer Park is opening in spots and allowing for more light to reach the forest floor.

## ***REVIEW OF CURRENT MAINTENANCE PRACTICES***

A comprehensive review and evaluation of Cortland County's current tree management practices was conducted for Dwyer Park. Aspects of management included in the evaluation were routine trimming and pruning, summer watering, mowing and mulching around trees, protection from beaver damage in appropriate locations, brush pick-up and chipping, new tree plantings, and removal of hazardous trees. Recommendations for improving management practices follows.

routine trimming and pruning – we noticed little in terms of routine pruning on any public trees, with most trees being pruned only to correct major defect failures. There seems to be only minor young tree formative pruning, or mature tree maintenance pruning. The County can take more responsibility to maintain urban trees to improve tree structure and health, and to reduce risk.

summer watering – The County could prioritize early tree care and maintenance including watering so that newly planted trees establish more successfully.

mowing and mulching around trees – it is common to see trees affected by mowers and string trimmers. This could be reduced by applying mulch around trees regularly, and instructing employees to avoid the root crown area when mowing/trimming. Damage may become common if mulch has biodegraded and isn't replaced on a schedule.

protection from beaver damage in appropriate locations – in waterfront areas, beaver damage has proven destructive to new and existing trees. No trees have been protected with fencing, and there needs to be a comprehensive plan in place to add protection where needed, and maintain fencing over the years (if found to be broken, split, or girdling the trees that they were aimed to protect).

brush pick-up and chipping – after yearly cleanups, storms, and maintenance of park trees, there is a need to dispose of debris. The debris is taken to the compost/debris pile in the south end of the park. This process has been working effectively for the County and no brush or debris was noted to be accumulating in the park.

new tree plantings – we are impressed by some tree plantings that the County has been undertaking. Most plantings have been installed well, with proper trees for the zone/region. More plantings could be accomplished, as current plantings are few and far between. Also, as mentioned above, summer watering and establishment of plants in the long term should be addressed so that plantings do not fail.

removal of hazardous trees – several hazard trees were noted in Dwyer Park that could have been removed previously if their risks were understood better. Several were dead and would have been safer (for the community and for the actual removal) if removed more prudently.

### ***Forest Management Preliminary Recommendations by Stand***

Taking into account the overall issues, opportunities, and constraints mentioned above for the entire forest, we can then consider management by forest stand in order to prescribe BMPs for the differing conditions found in the forest stands.

#### Stand 1 - Open/Mown

##### Description

The open/mown stand is the largest stand in Dwyer Park at 34.40 acres. It is located centrally in the park, and consists of arboretum-like areas that are mown with large trees throughout. This stand is dominated by sugar maples, with basswood, black cherry, red maple, bitternut hickory, red oak, white ash, beech, sweet cherry, hophornbeam, and hemlock present. In certain areas and edges this stand has understory and herbaceous plants growing as well, with native plants such as blackhaw viburnum, silky dogwood, Joe-pye weed, boneset, meadowsweet, elderberry, currants, jewelweed, sedges, and rushes present.

Due to the fact that the stand is mown, there is no chance for natural regeneration of trees in most of the stand. An assessment of the understory reveals that there is limited regeneration of native species also where the stand is not mown, with a significant portion of regeneration being plants that are unpalatable to deer. Establishment of new tree, shrub and herbaceous plants in the stand is somewhat limited by deer. Invasive buckthorn and honeysuckle were also surveyed in this stand. An area of Japanese knotweed was also noticed near the bathrooms on the slope toward Route 81.

##### Preliminary Recommendations

All invasive shrubs shall be managed before other forestry operations take place. Species to target are buckthorn and honeysuckle. Most all of the invasive plants are located on edges, steep areas, and other areas where understory exists. Woody debris generated can be piled together in these unmown edges to create wildlife habitat, mulched and applied to trees, or removed.

The planting of native canopy trees, and understory trees/shrubs will be accomplished after invasive plants are removed, focusing on areas where canopy has been opened by ash death from EAB, in areas that were native trees have declined or been lost to storms or other disease, or open areas caused by a lack of tree cover or natural mortality.

This open/mown stand also has no opportunity to have any tree replacements via natural regeneration, because mowing eliminates all new seedlings. Therefore this stand is in need of plantings to establish more trees as trees die. Several areas have thinning or a lack of canopy where plantings could take place.

##### Best Management Practices

Invasive Brush Management (Hand Tools, Woody Vegetation),  
Structures for Wildlife (Brush Pile - Small),  
Tree & Shrub Establishment (Individual Tree - Hand Plant with Tree Protection Tubes),



## Stand 2 - Early Successional

### Description

The early successional stand/strata is a 2.60 acre stand that is located south in the Park, within a road loop. This stand is dominated by white ash but other northern hardwood trees such as black cherry and red maple are abundant as well. There is also a ring of maturing plantation Norway spruce and larch around the perimeter of the stand. Chokecherry also makes up a smaller component of the stand understory.

An assessment of the understory reveals that there is some regeneration of native species, but mainly this regeneration is white ash, which will be killed by Emerald Ash Borer (EAB). Invasive honeysuckle, buckthorn, and swallow-wort were also inventoried.

### Preliminary Recommendations

All dead and declining ash and invasive shrubs shall be managed before other forestry operations take place. This stand has moderate to high invasive shrub pressure. Buckthorn and honeysuckle are the main invasive shrubs to target. This stand also harbors invasive swallowwort, which should be managed. Woody debris generated should be piled together to create wildlife habitat.

The planting of native overstory and understory trees/shrubs shall be accomplished after the invasive brush herbaceous plants have been managed, focusing on areas where canopy has been opened by ash removal. New plantings should add to diversity in this stand, which has a relatively simple composition.

Any maintenance and planting activities that occur in stand 2 should be accomplished while minimizing any impact to goldenseal and other native plants.

### Best Management Practices

Invasive Brush Management (Hand Tools, Woody Vegetation),

Structures for Wildlife (Brush Pile - Small),

Tree & Shrub Establishment (Individual Tree - Hand Plant with Tree Protection Tubes),

### Stand 3 - Old Forest South

#### Description

Stand 3 is a 9.90 acre native forest remnant stand. This stand has sugar maple as a dominant, and has other species associated with Northern Hardwood stands such as black cherry, basswood, hawthorn, red maple, ironwood, red oak, butternut hickory, hemlock, beech, and chokecherry. This stand also has a very large component of white and green ash, which are in decline due to EAB. In the understory this stand has a rich composition of plants which is not found in all the other stands. Virginia creeper, grape vines, false Solomon's seal, flowering raspberry, blackberry, jack in the pulpit, doll's eyes, black cohosh, bloodroot, and Canada mayflower were all surveyed. Also worth noting is a patch of native yew, which is becoming more rare in the area due to deer pressure. The Old Forest South stand is unique in that it includes wetland areas, lakeshore, and some areas of deep mesic soils.

An assessment of the understory reveals that there is native plant regeneration, but deer browse is steering regeneration towards unpalatable species to deer. Invasive barberry, honeysuckle, and buckthorn were also inventoried.

#### Preliminary Recommendations

All dead and declining ash and any invasive shrubs shall be managed before other forestry operations take place. There is a large amount of dead and dying ash in this stand, opening the canopy in several locations as trees die. Highest pressure from invasives was barberry, honeysuckle, and buckthorn which are found throughout the stand, with more occurrence in edges and disturbed areas. Woody debris generated should be piled together to create wildlife habitat.

Beavers have become a big issue in this stand, because the stand is surrounded by shallow lake edges in several areas. Several large trees were found girdled completely, and many more have been extensively damaged.

The planting of native overstory and understory trees/shrubs shall be accomplished after the invasive brush and ash has been managed, focusing on areas where canopy has been opened by ash removal, and where there are areas with no midstory/understory. Natural regeneration will be successful in most areas but plantings should be accomplished where invasive pressure and deer pressure have left little regeneration.

There are areas within this stand that have a more complex ecosystem than other areas, and the plant life and ecology of these areas should be protected. An area with native yew for example should be disturbed as little as possible. This stand also contains a wetland complex. The wetland has had a portion of its area diminished from the construction of Route 81, however much of the hydrology is intact. These wetlands should be protected to the maximum extent possible during forest operations. There is also an area adjacent to the municipal compost area that has open canopy and therefore an increased pressure and diversity of invasives.

#### Best Management Practices

Invasive Brush Management (Hand Tools, Woody Vegetation),

Structures for Wildlife (Brush Pile - Small),

Tree & Shrub Establishment (Individual Tree - Hand Plant with Tree Protection Tubes),

## Stand 4 - Plantation North

### Description

Plantation North is the first of two stands that are plantations. This is a 3.28 acre plantation that is mainly planted to Norway spruce, larch, and white pine. The understory has regeneration of some hardwood trees and shrubs including chokecherry, basswood, white ash, and black locust (considered invasive).

An assessment of the understory reveals that there is some native hardwood regeneration, but this is being limited by competing and invasive vegetation. Invasive black locust and honeysuckle are the largest threat, but herbaceous plants such as dame's rocket, garlic mustard, and japanese knotweed (near field edge) were also inventoried. Swallowwort has not become a large issue in this stand but should be managed to keep the plant from proliferating as it exists in surrounding areas (mainly the southern plantation).

### Preliminary Recommendations

Invasive shrubs are a threat in Stand 4. All invasive shrubs shall be managed before other forestry operations take place. Highest pressure from invasives was honeysuckle, barberry, black locust, and knotweed (a patch on the field edge). Woody debris generated should be piled together to create wildlife habitat.

Minimal natural regeneration was noted in this stand, with most regeneration being invasive brush and invasive herbaceous plants such as dames rocket and garlic mustard. Because this stand is a young plantation however, it has adequate trees currently growing to replace any mortality in the canopy. Any hardwoods should be retained in the stand. Red pine is not thriving in the stand and can be removed to make room for other trees.

### Best Management Practices

Invasive Brush Management (Hand Tools, Woody Vegetation),

Timber Stand Improvement (Pine Cull),

Structures for Wildlife (Brush Pile - Small)

Tree & Shrub Establishment (Individual Tree - Hand Plant with Tree Protection Tubes),

## Stand 5 - Plantation South

### Description

Plantation South is a 1.18 acre stand that is the second stand which is a plantation. It is a predominantly Norway spruce and larch plantation, with some pines. There is some minor maple and ash regeneration. The stand exists at the most southeastern section of Dwyer Park, and borders a waterway that connects Goodale Lake to Little York Lake. Along this edge, the stand has an intrusion of invasive plants including swallowwort.

An assessment of the understory reveals that there is little to no regeneration of native species, other than a limited amount of maple and ash. Establishment of new tree, shrub and herbaceous plants in the stand is limited by competing vegetation and deer. Invasive swallowwort is the largest threat, with barberry and honeysuckle present. This stand also has a large Norway maple that has successfully seeded out into the stand around it.

### Preliminary Recommendations

All invasive shrubs shall be managed before other forestry operations take place. Highest pressure from invasives was found in the eastern side of the stand bordering the channelized river, but pressure was noted throughout the stand. Target species are honeysuckle and barberry. Also this stand has one of the only areas with invasive Norway maple. An adult tree is seeding out into the plantation and will cause a proliferation of the species if it is not eradicated. Woody debris generated should be piled together to create wildlife habitat.

Minimal natural regeneration was noted in this stand, with most regeneration being invasive brush and invasive herbaceous plants such as swallowwort. Because this stand is a young plantation however, it has adequate trees currently growing to replace any mortality in the canopy. Any hardwoods should be retained in the stand. Red pine is not thriving in the stand and can be removed to make room for other trees.

### Best Management Practices

Invasive Brush Management (Hand Tools, Woody Vegetation),  
Timber Stand Improvement (Norway Maple Cull, Pine Cull),  
Structures for Wildlife (Brush Pile - Small),  
Tree & Shrub Establishment (Individual Tree - Hand Plant with Tree Protection Tubes),

## Stand 6 - Old Forest North

### Description

Old Forest North is a .57 acre native forest stand located on the transition from the uplands of the open/mown stand to the bottomland/wetlands to the east of Green Lake. It is a Northern Hardwoods stand dominated primarily by sugar maple and beech. Also the stand has hemlock, ash, basswood, black cherry, and red oak in its makeup. This stand has limited invasive tree/shrub pressure, mostly honeysuckle and barberry at numbers. Cohosh and white snakeroot were also surveyed (herbaceous plants that are not palatable to deer).

An assessment of the understory reveals that there is some regeneration of native species, but plants such as white snakeroot (which is unpalatable to deer) are becoming more abundant. Establishment of new tree, shrub and herbaceous plants in the stand may be limited by deer. Invasive honeysuckle and barberry were also inventoried in low numbers.

### Preliminary Recommendations

Invasive brush is found in low numbers in this stand, making it possible to eradicate most while supporting native species. Target species are honeysuckle and barberry. Woody debris generated should be piled together to create wildlife habitat.

The planting of native understory trees/shrubs and herbaceous plants shall be accomplished after the invasive brush has been managed, focusing on areas with no midstory/understory.

### Best Management Practices -

Invasive Brush Management (Hand Tools, Woody Vegetation),

Structures for Wildlife (Brush Pile - Small),

Tree & Shrub Establishment (Individual Tree - Hand Plant with Tree Protection Tubes),

## Recommendations – Planning and Administrative

The recommendations of the Community Forest Management Plan will guide planning and budget development on the County level, as well as informing the work of the County’s Highway Department.

Cortland has recently been working to develop its urban tree and forest management for Dwyer Park, below are recommendations to further improve and enhance management in relation to this project and beyond:

### ***Arborist Staffing/Training***

Would it be worth hiring or training up an arborist/forester? Or is consultation with DEC/others working well now?

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### ***Equipment, Capacity to accomplish work, and the use of Consultants***

What does County have? Needs? Wish list?

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## Trees, Shrubs, and other Plants for planting in the 6 Forest Stands of Dwyer Park

Other plants to add to this preliminary list?

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### Trees:

Acer rubrum (red maple)  
Acer saccharinum (silver maple)  
Acer saccharum (sugar maple)  
Betula lenta (black birch)  
Carpinus caroliniana (musclewood)  
Carya cordiformis (bitternut hickory)  
Carya glabra (pignut hickory)  
Carya ovata (shagbark hickory)  
Carya tomentosa (mockernut hickory)  
Cornus florida (flowering dogwood)  
Liriodendron tulipifera (tulip tree)  
Nyssa sylvatica (black tupelo)  
Ostrya virginiana (American hophornbeam)  
Pinus strobus (white pine)  
Platanus occidentalis (sycamore)  
Populus deltoides (cottonwood)  
Populus tremuloides (quaking aspen)  
Prunus serotina (black cherry)  
Quercus alba (white oak)  
Quercus coccinea (scarlet oak)  
Quercus palustris (pin oak)  
Quercus prinus (chestnut oak)  
Quercus rubra (red oak)  
Quercus velutina (black oak)  
Tsuga canadensis (eastern hemlock)  
Sassafras albidum (sassafras)

### Shrubs:

Alnus sp. (alder)  
Aronia arbutifolia (red chokeberry)  
Cephalanthus occidentalis (buttonbush)  
Clethra alnifolia (sweet pepperbush)  
Cornus amomum (swamp or silky dogwood)  
Cornus racemosa (gray-stem dogwood)  
Hamamelis virginiana (witch-hazel)  
Lindera benzoin (spicebush)

Rhus typhina (staghorn sumac)  
Rubus alleghaniensis (common blackberry)  
Rubus occidentalis (black raspberry)  
Salix discolor (pussy willow)  
Taxus canadensis (American yew)  
Vaccinium corymbosum (highbush blueberry)  
Vaccinium pallidum (hillside blueberry)  
Viburnum acerifolium (maple-leaf viburnum)  
Viburnum dentatum (arrowwood viburnum)  
Viburnum prunifolium (blackhaw viburnum)

Vines:

Apios americana (groundnut)  
Parthenocissus quinquefolia (Virginia creeper)

Herbs:

Apocynum cannabinum (Indian hemp dogbane)  
Aralia nudicaulis (wild sarsaparilla)  
Arisaema triphyllum (Jack-in-pulpit)  
Asarum canadense (wild ginger)  
Aster cordifolius (heart-leaved aster)  
Aster divaricatus (white wood aster)  
Dianthus armeria (Deptford pink)  
Dicentra cucullaria (Dutchman's breeches)  
Erythronium americanum (trout lily)  
Eupatorium maculatum (spotted Joe-Pye-weed)  
Eupatorium perfoliatum (boneset)  
Eupatorium purpureum (sweet-scented Joe-Pye-weed)  
Eupatorium rugosum (white snake root)  
Euthamia graminifolia (grass-leaved goldenrod)  
Geum canadense (white avens)  
Helianthus decapetalus (thin-leaved sunflower)  
Helianthus divaricatus (woodland sunflower)  
Lobelia inflata (Indian tobacco lobelia)  
Maianthemum canadense (Canada mayflower)  
Medeola virginiana (Indian cucumber-root)  
Oenothera biennis (common evening primrose)  
Panax trifolius (dwarf ginseng)  
Peltandra virginica (arrow arum)  
Polygonatum biflorum (true Solomon's seal)  
Sanguinaria canadensis (bloodroot)  
Scutellaria lateriflora (maddock skullcap)  
Silene caroliniana (wild pink)  
Smilacina racemosa (false Solomon's seal)  
Solidago bicolor (silverrod goldenrod)



Solidago caesia (blue-stemmed goldenrod)  
Solidago juncea (early goldenrod)  
Solidago odora (sweet goldenrod)  
Solidago rugosa (rough-stemmed goldenrod)  
Thalictrum dioicum (early meadow rue)  
Verbena urticifolia (white vervain)

Grasses:

Leersia virginica (white grass)  
Panicum clandestinum (deer-tongue panic grass)

Ferns:

Athyrium filix-femina (lady fern)  
Dryopteris intermedia (evergreen wood fern, fancy wood fern, common wood fern)  
Polystichum acrostichoides (Christmas fern)  
Thelypteris noveboracensis (New York beech fern)