



## Level 3 Screening Criteria: Results

The North DuSable Lake Shore Drive (NDLSD) Phase I Study is currently evaluating the five remaining NDLSD Build Alternatives (“Level 3 Screening”). As part of this evaluation, nearly 30 different criteria are being considered, including Performance, Social, Economic and Environmental factors. The project team has separated criteria into two categories: 1) distinguishing criteria that contain results that vary amongst alternatives, and 2) non-distinguishing criteria that contain results that are the same or similar amongst alternatives. This Study Spotlight addresses the non-distinguishing criterion of impacts to trees associated with each of the remaining alternatives and discusses the unique opportunities the project offers to enhance the urban forest and associated ecosystems. For additional details regarding the overall Phase I Study, please visit the project website at [northdusablelakeshoredrive.org](http://northdusablelakeshoredrive.org).

## THE URBAN FOREST AND STUDY APPROACH IN LINCOLN PARK

All of the trees in our city and region make up what is referred to as the urban forest, from neighborhoods to metro areas to regional landscapes. This includes trees in local and regional parks, all trees along streets and on public and private properties, as well as trees within the county forest preserves. Lincoln Park represents a portion of the overall urban forest of Chicago, and tree-related policies and strategies in Lincoln Park should consider and relate to the overall urban forest within the region.

A few different approaches have been taken by the project team to study and categorize trees within Lincoln Park. Detailed tree surveys focused on the areas adjacent to NDLSD were conducted in 2019 and 2021. These surveys accounted for approximately 64% of the total park area. Within that area 6,780 trees were quantified. Trees outside of the survey area were quantified using aerial mapping. Although aerial mapping generates less detailed information, it provides a better understanding of the total number and locations of trees within the entire park. The aerial map of the park was divided into grids, and each grid was individually analyzed resulting in 9,580 individual trees being quantified.

*It is estimated that Lincoln Park has approximately 19,000 trees.*

Utilizing mapping techniques, it has also been possible to analyze the distribution of trees throughout the corridor. The surveyed areas of Lincoln Park within the Uptown community area have the most trees, while the areas of the park within the Near North community area have the fewest. This finding generally corresponds with the distribution of overall lakefront park space along the corridor.



## Tree Size and Health

The tree survey catalogued tree size by measuring the diameter at breast height (DBH) in inches. Multi-stem trees were categorized separately in this analysis, noting that ornamental trees often reach maturity at smaller DBH sizes than shade trees.

Tree health is also an important factor to assess, and the tree survey followed the International Society of Arboriculture (ISA) standard categories for evaluating tree health. These categories are general and include Good, Fair, Poor and Dead. Trees in good health show vigorous growth, with normal foliage and structure, with no hint of disease. Trees in fair health are stressed and not growing optimally, showing mild disease or structural problems. Trees in poor health are actively in decline, new growth is absent, parts of the tree are dead, and the structure can be unstable. These trees are in danger of dropping significant branches and limbs. Dead trees are no longer living and produce no new growth. Although some dead trees can still provide valuable ecological habitat, these trees are often unstable and are generally considered a liability in urban settings.

*Of the 6,780 trees surveyed, 84% are in Fair or Poor condition.*

This share of Fair or Poor condition trees is higher than usual in urban parks throughout Chicago where typically 50%-75% of trees are in "Good" condition. There are two likely reasons for this, one is that the survey limits focus on areas closer to the roadway and include median trees, which are subjected to a harsher growing environment including salt spray in the winter. The second factor is that trees closer to the lake are subjected to harsh conditions in general, including extreme wind exposure and severe winter weather conditions.

## Tree Species and Diversity

Assessment of tree species was also an important factor in the analysis. A healthy urban forest will have a highly diverse and balanced distribution of species. The surveyed trees in Lincoln Park comprised a large and disproportionate number of Honey Locust, Hawthorn and Crabapple. These trees are tolerant of harsh growing conditions and have been heavily used along the roadway and within the median of DuSable Lake Shore Drive. However, this over-reliance on just a few species is of concern, as an imbalance in tree biodiversity can impact related ecosystems and also create a potential for devastating losses from any future pests or diseases that affect one or more of the overrepresented species.

The below chart provides a way to visualize the tree species diversity and health data. Note that an ideal distribution would be nearly flat, and ideally a much greater share of trees would be in Good health.

More than 90 unique tree species were categorized by the survey, although some of them are undesirable or invasive. While all trees add value, the trees listed on the right are problematic in urban park settings. These trees are generally non-native, and often display aggressive uncontrolled growth and

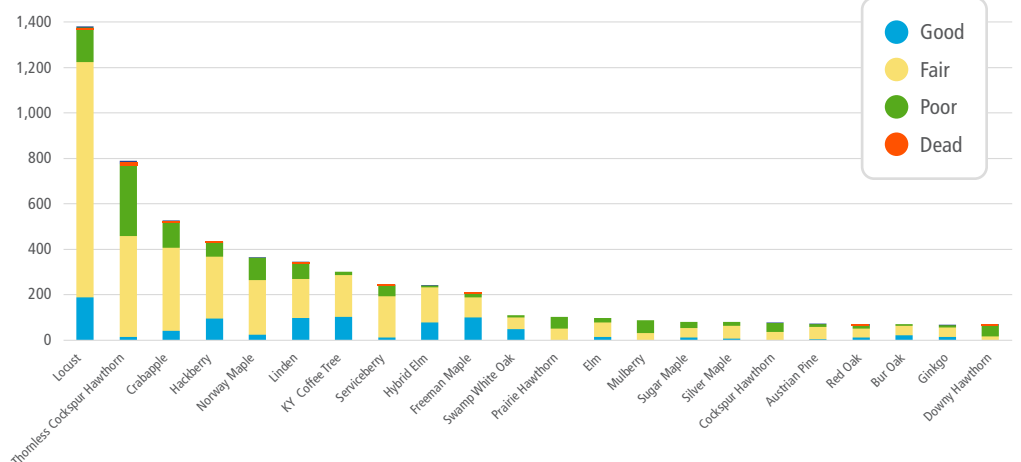
re-seeding that threatens native species. Some of these trees are more prone to disease, have "weak wood" that can pose a risk for collapse during storms, or create other nuisances. Around 12% of the surveyed trees are in this category.

### Potential invasive and undesirable species

- Boxelder
- Amur Maple
- Norway Maple
- Tree of Heaven
- Persian silk tree
- European black alder
- Russian and Autumn Olive
- Glossy buckthorn
- White and Green Ash
- Butternut
- White Mulberry
- Princess Tree
- Japanese and Amur corktree
- Austrian Pine
- White poplar
- Maheleb Cherry
- Bradford/Callery Pear
- Sawtooth Oak
- European Buckthorn
- Black Locust
- Siberian and Slippery Elm



Existing Trees by Species / Condition



## Tree Opportunities

This project is proposing to add a significant amount of new park space that will provide space for new trees. This is especially apparent on the southern end of the project where there is currently very little or no green space and few trees along the lakefront. This need to plant an extensive number of new trees represents a significant opportunity to rebalance the species diversity and improve the overall health of the urban forest along the north lakefront. This project will, at a minimum, replace trees on a one-to-one basis. So every tree removed will be replaced with at least one new tree.

Areas for proposed trees will be studied further but are expected to include a planted median as well as trees spaced along the edges of the roadway areas in accordance with the Chicago Landscape Ordinance. Within new and reconfigured park spaces, there will be additional opportunities for new tree plantings. These park space designs will be developed in coordination with the Chicago Park District and community stakeholders to ensure that new tree plantings fit with their overall vision and goals.

The NDLS project presents a rare opportunity to rebalance the tree species biodiversity within Lincoln Park and the overall urban forest in Chicago, creating a significant benefit for the natural ecosystems along the north lakefront. Replacement trees will draw from a list of native and adapted species that bring high value to this part of the region. The Chicago Bureau of Forestry has published an [Urban Forest Management Plan](#) in January 2023 that states the importance of diverse tree species, including the following: When assessing tree population diversity, a common urban forestry industry guideline is that no more than 10% of an urban tree population should be composed of a single species (e.g., sugar maple) and no greater than 20% should be composed of a single genus (e.g., maple). As part of rebalancing biodiversity, the goal for new trees will be no more than 5% from a single species. There is also an opportunity to re-introduce many native Oak tree species to enhance the Oak tree ecosystem in particular, which aligns with [goals set forth by the Chicago Region Trees Initiative](#).



## Tree Impacts

In many areas along the NDLSL corridor, the proposed roadway alignment differs from the existing alignment, and areas within the new transportation footprint are considered potential tree impact areas. This includes planned future green space in medians and infield areas between ramps, where construction and grading activities are expected to occur. Proposed trails and parking areas are also part of the tree impact evaluation. In addition, there are some areas where existing roadway or medians would be removed and converted to future park space, but demolishing the existing infrastructure and adjusting grading is expected to impact existing trees. Plans for construction staging and maintaining traffic during construction are to be determined, and potential tree impacts associated with these temporary measures are not yet known.

Overall the Essential Alternative has the lowest estimated number of impacted trees, while the number is slightly higher for the Addition and Exchange/Flex alternatives. However, the range of impacted trees is narrow, and all alternatives are estimated to impact between 12-13% of the trees in Lincoln Park. A large share of the impacted trees fall within the existing transportation footprint – in median or ramp infield areas, rather than in the park space itself. Of the trees that are expected to be impacted, 62% are in Fair condition, and 23% are in Poor or Dead condition, or a total of 85% categorized as Fair, Poor or Dead. Relative to the overall size of the existing Lincoln Park, the number of impacted trees works out to approximately two per acre for all alternatives.



### ***Additional Key Points regarding Tree Impacts***

- The roadway and trail alignments and park feature configurations will undergo design refinements to further minimize impacts to existing trees, particularly those of large size and in good health.*
- A project this large will be divided into several phases over many years, so not all impacted trees will be replaced at the same time.*
- There will be no impacts to trees within sensitive areas such as the Bill Jarvis Bird sanctuary.*

### ***Spotlight Summary***

*As the NDLSL project moves into the final stage of concept design the project team will utilize the assembled tree data, identify trees of high value, and further refine plans to minimize tree impacts where feasible. The project presents a rare opportunity to increase biodiversity in Lincoln Park and will target native species to rebalance the overall health of the urban forest, while re-establishing and enhancing the Oak tree ecosystem. All impacted trees will be replaced, and new parkland will be designed to significantly improve the urban forest and natural ecosystems that relate to it.*