Village of Kirkland Urban Forest Plan

Introduction

The Kirkland Tree Commission has developed this urban forest plan to provide clear direction and achievable goals to help manage the preservation, protection and enhancement of the urban forest within the community. This plan provides a foundation and guidance for community ordinances and regulations that allow the Village Board and other decision makers to be able to support high quality management, planting and preservation of the urban forest by public and private landowners.

The urban forest consists of the trees on public and private property throughout the Village of Kirkland. These trees are located along rights-of-way, parks, around buildings, along pathways, in out-lots, in natural areas, backyards, commercial and industrial areas throughout the entire community. This urban forest provides an interconnected network of services. These services and benefits include improved air and water quality, reduction in stormwater run-off, increased property values, energy reduction, improved psychological and physical health and habitats for wildlife.

Vision Statement

We seek a fully diverse, stocked, healthy and safe urban forest, one that will include a variety of native and cultivar species to provide wildlife habitat and seasonal color that will enhance the attractiveness of the community to residents, visitors and prospective businesses; one that will ensure the general welfare by reducing energy costs, increasing property values, improving air quality, managing stormwater and promoting a sense of well being. In addition to caring for trees in parks and public green spaces, the Urban Forest Plan will seek to educate and inspire residents to maintain trees on private property in an environmentally responsible manner.

Urban Forest Plan Committee

This plan was developed with input from the Kirkland Tree Commission members who are appointed by the Kirkland Village Board that include:

- Appointed Village Board Member-Chairperson
- Public Works Department Head
- Residents from the community

These individuals were selected because of their diverse interests and perspectives. Their engagement in the planning process will serve to further support the implementation of this urban forestry management plan. Their collective input has formed the content for this plan in recognition of the need to preserve, protect and enhance our urban forest, the value of the forest to them individually and to the community collectively.

This plan provides support and detail for the Village of Kirkland ordinances and recognizes that the urban forest is critical infrastructure within the Village of Kirkland. This infrastructure works in conjunction with other infrastructure such as utilities, roads, stormwater systems, etc. However, trees and other green infrastructure

help to improve our environment and reduce impacts from built or “gray” infrastructure. The function and health of our green infrastructure directly relates to our overall quality of life. The primary goal of this urban forest management plan is to provide for a robust, healthy, long- lived urban forest. This is only possible when we recognize that trees are a long-lived species. It takes tens of years for a tree to reach maturity, when it can provide the most benefits and services. When a mature tree is removed, replaced with a small tree or not replaced at all, an entire generation, or multiple generations, of service is lost. Larger trees provide larger benefits so it is critical to support a mature, healthy, urban forest so we can maintain our quality of life not only for this generation but also for the generations to come.

The Issues

The Village of Kirkland spends resources, through volunteers and municipal staff, on urban forestry-related activities. By these expenditures and effort, the Village demonstrates that it understands the important role that a healthy urban forest plays in neighborhood quality and environmental moderation. Some general and specific issues identified:

General

- Increase the overall tree canopy.
- Protect the existing healthy tree canopy.
- Support a tree planting program that features a diverse range of species with the focus on high-quality natives. Focus on trees that will continue the vertical landscape of the Village by intermixing small and large trees.
- Over time there has been a slow loss of high-quality native species, with few younger trees of these species being planted to perpetuate this unique, and valuable population.
- To prolong the health and longevity of the Village's investment in the planting, early tree care is critical
- Develop a tree maintenance plan and schedule for the Village's urban forest.

Specific

- Increase the percentage of the urban forest tree canopy that is not maples, as these are over-planted, as shown in the tree inventory.
- Continue to promote the 50-50 tree program; provide resident participants with information about tree care for the newly-planted trees, and increase community outreach on topics such as tree care, pests, tree diseases and other relevant tree issues.

Conclusion

The Village of Kirkland faces many of the same issues that small communities across the United States face in regard to urban forestry. Limited budgets and staff do not allow most communities to manage their tree resource as well as they would like. The Village of Kirkland has a number of attributes unique to the area. The trees of the Village play a role in this quality. The Village will continually search for responsible ways to enhance and work within the available budget to implement a proactive, measured program.

A sustainable urban forest is founded on Village support, community cooperation, quality care, continued funding and personal involvement. It is created and maintained through a shared vision and cooperation between individuals and the public and private sectors. The ever-present focus is on maximizing benefits and minimizing costs. When these elements are considered together, they demonstrate the need for shared vision and responsibility, for direct intervention with the resources and programs of care that are ongoing and responsive.

Status of the Urban Forest: Inventories and Assessments

Context

History and Land Use Changes:

The first inhabitants of this predominantly wooded area along the Kishwaukee River were the Pottawatomie. They grew rice and corn and refined maple sugar. In 1835 the Pottawatomie were removed at the conclusion of the Black Hawk War. The next year, the first farm settlers arrived. In 1837 Thomas Kirk, the Village founder, built a log cabin here. By 1882, Kirk had acquired 1,472 acres of land. He gave a portion of the land to the railroad in 1875 in return for passenger service. Kirk raised cattle and sheep. He rented his sheep sheds to John MacQueen in 1892. MacQueen became a major landowner and expanded the sheep feeding and shearing yards which had been started by Frank Hunter. Frank Hunter ran the sheep yards after MacQueen, though they were owned by the Milwaukee Railroad. Hunter was followed by the Brennan brothers who leased the yards in 1946 and later bought them in 1959. The Brennans had a large cattle business. In 1943 the U.S. government chose Kirkland as a site for a hemp mill and local farmers pledged 4000 acres to hemp production. Turkey farms flourished from the late 1930s until 1963.

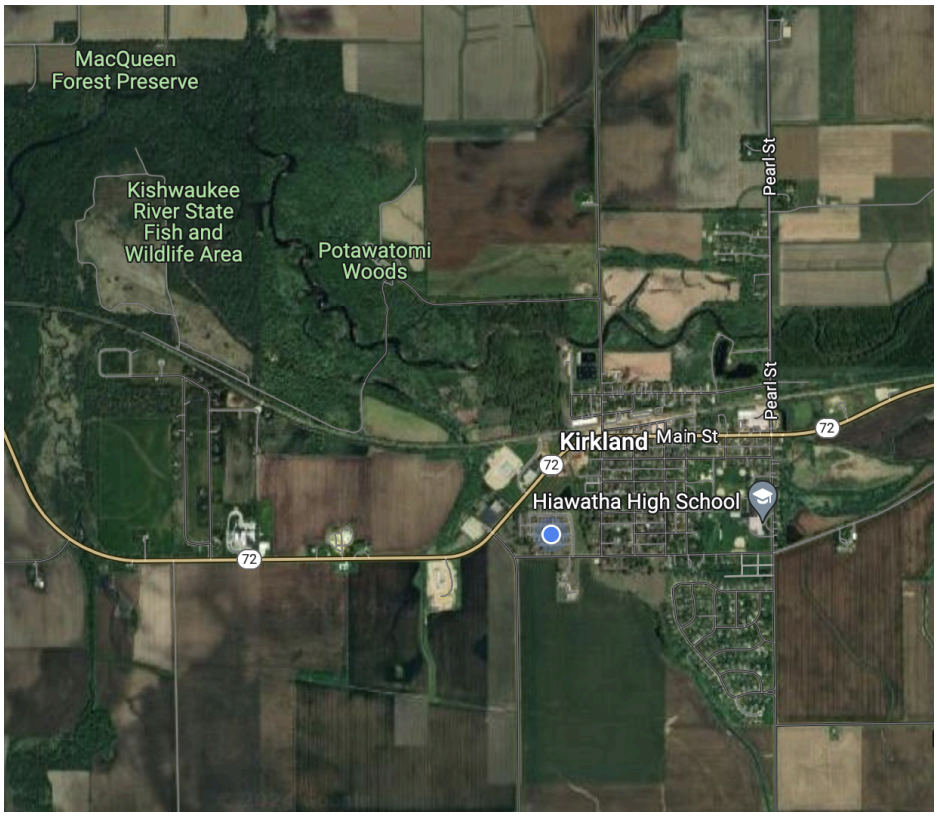
Today, the Village of Kirkland has some light industry. It is the hub of considerable surrounding agricultural activity, as a part of DeKalb County.

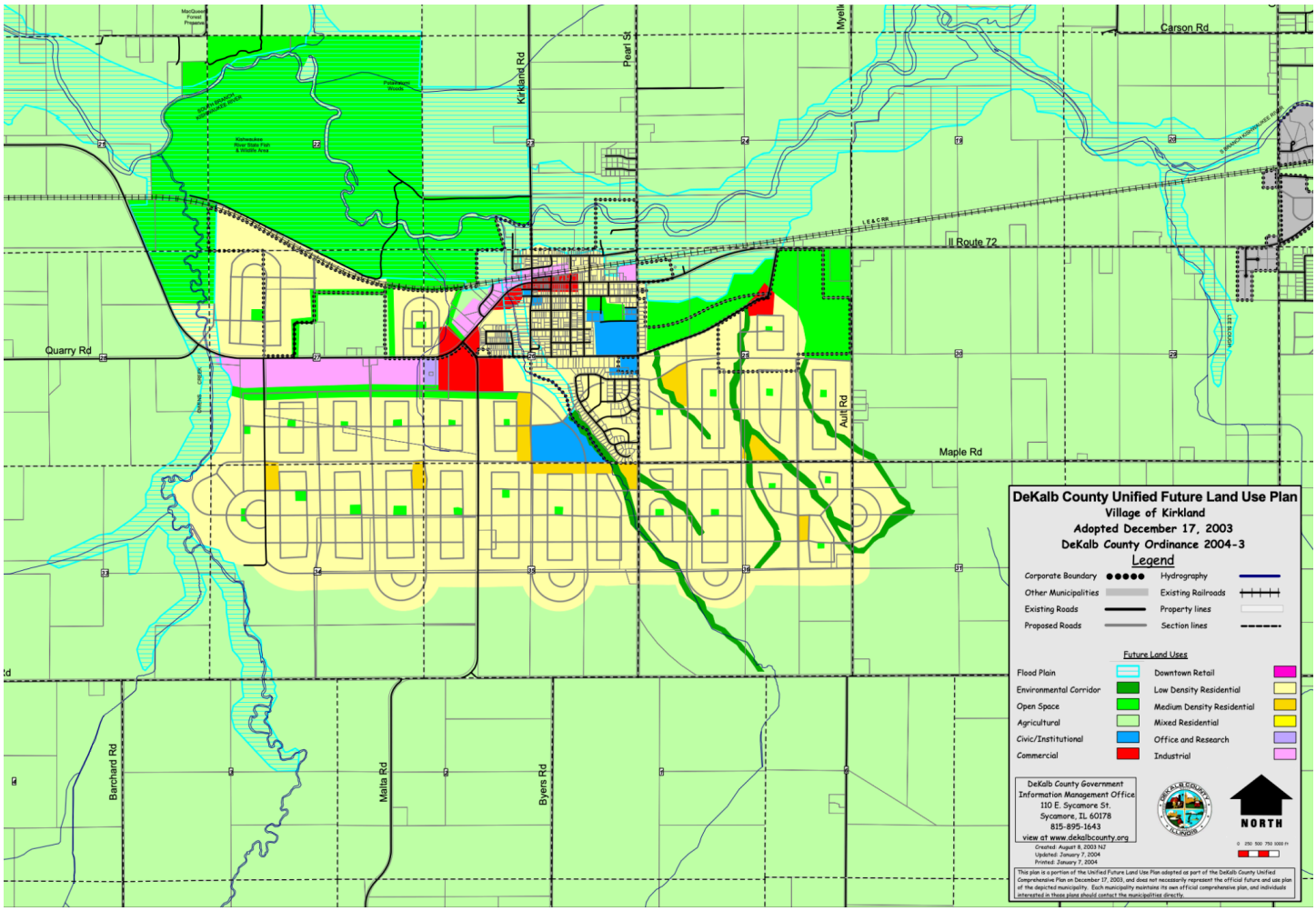
> *Agriculture plays an important role in both the history and economy of DeKalb County. The rich prairie soils that cover most of the county made this one of the wealthiest farming regions in the Midwest. DeKalb County was the first in the nation to create a county Farm Bureau and appoint an Agricultural Extension Advisor. Barbed wire, which along with John Deere's moldboard plow, made cultivation of the open prairies possible, was manufactured in the county. In more recent years DeKalb Agricultural Research Corporation, a producer of hybrid seed corn, has grown into a major center for genetic research of crops, swine*

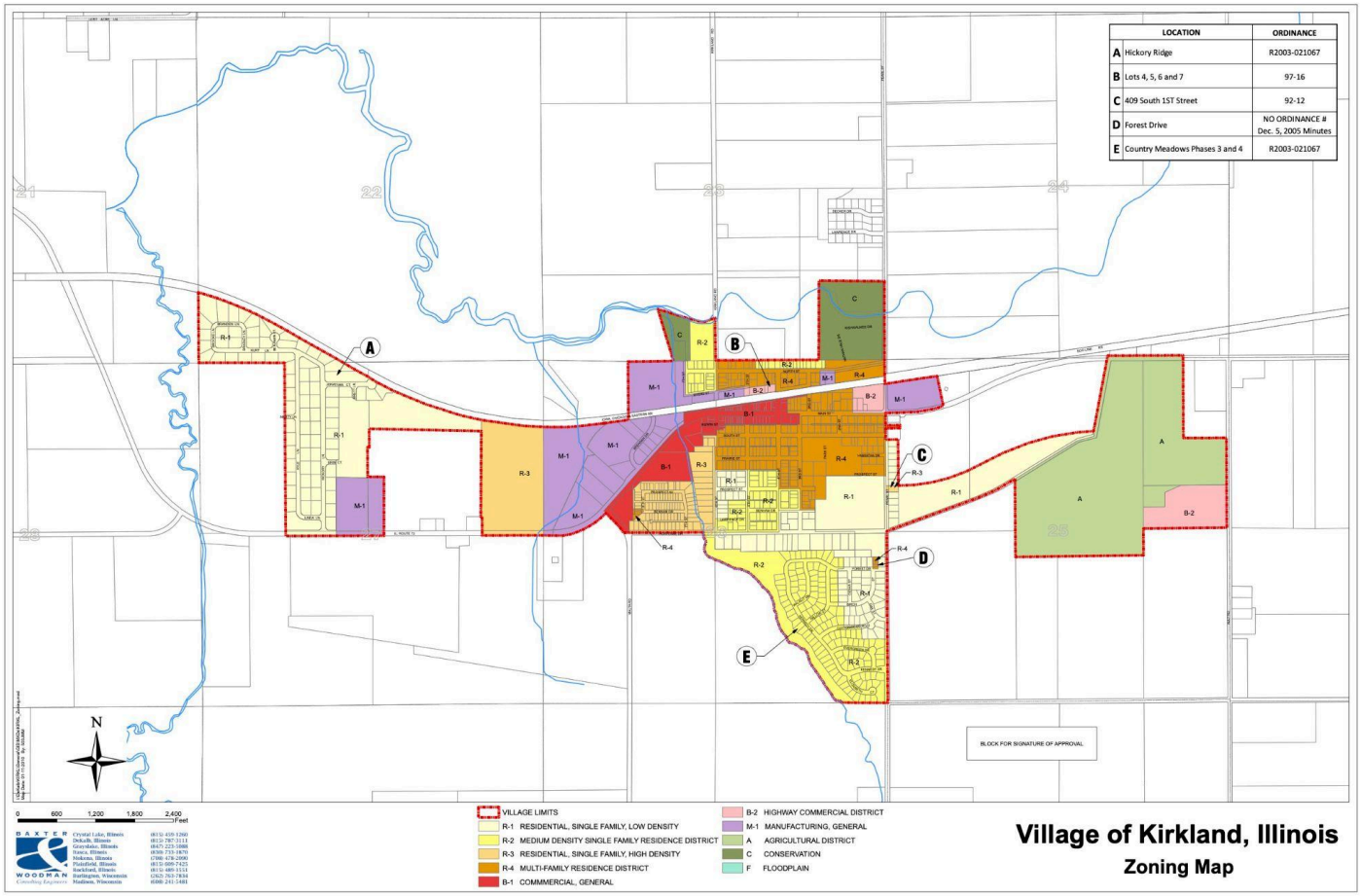
and poultry. Farmland and buildings contribute almost $115 million in assessed valuation to the county property tax base (10.4 percent). In 1992, although farmers made up only 3.5 percent of the local workforce, they paid $3,217,000 in property taxes and had a net cash return of $24,853,000, making them a major part of the local economy. Farms in DeKalb County were generally larger than 180 acres in size, according to the 1992 Census of Agriculture, with about one-third of the farms more than 500 acres. Two-thirds of the farms made an annual profit averaging almost $50,000 in 1992. Most of the farms grew corn and soybeans, while 20 percent raised livestock. There were only 12 dairy farms in the county in 1992. About one-third of the farmers owned all of their land (53,295 acres) while one-third were part owners (65,051 acres owned, 152,046 acres rented) and one-third were tenants (107,120 acres). More than two-thirds (69 percent) of the farmland in the county was rented, while 70 percent of the farmers listed farming as their principal occupation and lived on their farms. Most of the farmers in the county (67 percent) had farmed more than 10 years, and the average age in 1992 was 51. Like most areas of the Midwest, the number of farmers in DeKalb County has declined as the size of farms increased. About 90 percent of the county is farmland, and 98 percent of the farmland in the county is classified as prime by the U. S. Department of Agriculture.

—From a working paper of the Center for Agriculture in the Environment:

A 2024 satellite image of Kirkland (Google Maps):




Carson Rd
Kirkland Rd
Pearl St
Myell
Il Route 72
Quarry Rd
Ault Rd
Maple Rd
Barchard Rd
Malta Rd
Byers Rd
DeKalb County Unified Future Land Use Plan
Village of Kirkland
Adopted December 17, 2003
DeKalb County Ordinance 2004-3
Legend
Corporate Boundary
Other Municipalities
Existing Roads
Proposed Roads
Hydrography
Existing Railroads
Property lines
Section lines
Future Land Uses
Flood Plain
Environmental Corridor
Open Space
Agricultural
Civic/Institutional
Commercial
Downtown Retail
Low Density Residential
Medium Density Residential
Mixed Residential
Office and Research
Industrial
DeKalb County Government
Information Management Office
110 E. Sycamore St.
Sycamore, IL 60178
815-895-1643
view at www.dekalbcounty.org
Created: August 8, 2003 NJ
Updated: January 7, 2004
Printed: January 7, 2004
NORTH
This plan is a portion of the Unified Future Land Use Plan adopted as part of the DeKalb County Unified Comprehensive Plan on December 17, 2003, and does not necessarily represent the official future and use plan of the depicted municipality. Each municipality maintains its own official comprehensive plan, and individuals interested in these plans should contact the municipalities directly.



Environmental Assessments

Here are some environmental factors that affect tree management, selection, and maintenance in Kirkland, Illinois:

Climate:

- Temperature: Kirkland experiences a wide range of temperatures, from hot summers to cold winters. This can affect the types of trees that can thrive in the area.
- Precipitation: The amount and timing of rainfall can impact tree growth and health. Droughts can be a concern, as can periods of heavy rainfall that can lead to soil erosion and waterlogging.
- Wind: Strong winds can damage trees, especially newly planted ones. Windbreaks may be necessary in some areas.
- Snow and ice: Heavy snow and ice can break branches and damage trees.

Soil:

- Soil type: The type of soil in Kirkland can vary, from clay to sandy loam. Different trees have different soil preferences.
- Soil pH: The pH of the soil can affect nutrient availability and tree health.
- Soil drainage: Poor drainage can lead to root rot, while excessively well-drained soil can result in drought stress.

Pests and Diseases:

- Insects: Various insects can damage trees, including the emerald ash borer, which has been a major problem in Illinois.
- Diseases: Trees can be susceptible to fungal and bacterial diseases.
- Wildlife: Deer, rabbits, and other animals can damage trees by browsing on leaves and bark.

Other Factors:

- Air pollution: Air pollution can stress trees and make them more susceptible to pests and diseases.
- Urban heat island effect: Urban areas tend to be warmer than surrounding rural areas, which can affect tree growth.
- Salt spray: Salt spray from roads can damage trees, especially those near roadways.

Tree Selection:

When selecting trees for the Village of Kirkland, it is important to consider the environmental factors listed above. Native trees are a good choice, as they are well-adapted to the local climate and soil conditions. It is also important to choose trees that are resistant to common pests and diseases in the area

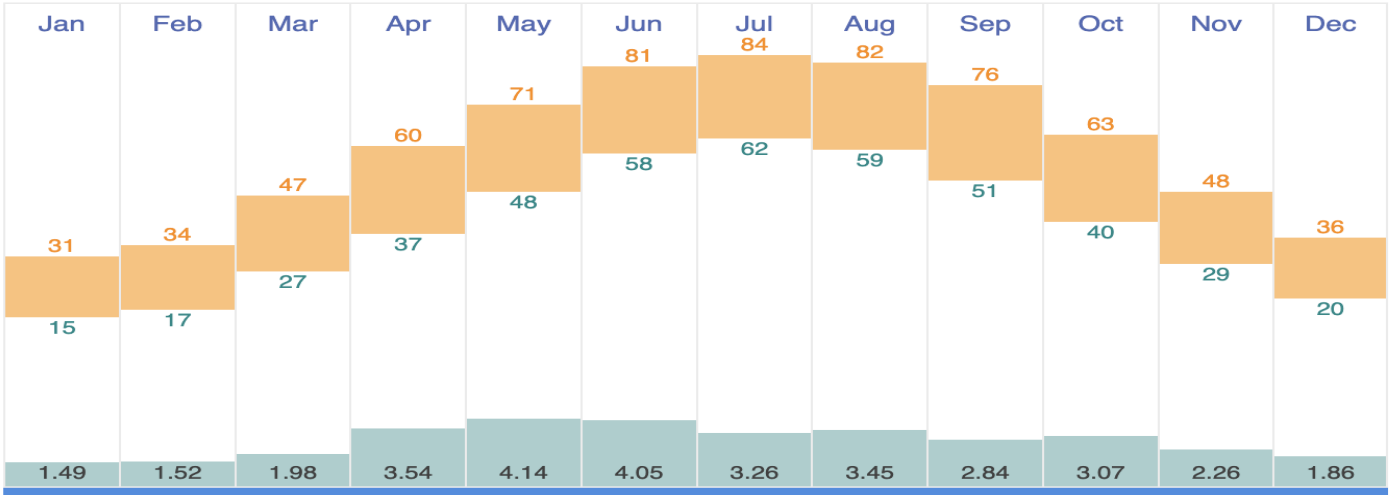
Climate
The Village of Kirkland experiences a continental climate with four distinct seasons. Overall:

- Four distinct seasons: Kirkland experiences the full range of four seasons, with significant temperature variations between summer and winter.
- Precipitation: The area receives a moderate amount of precipitation throughout the year, with snow in the winter and rain in the other seasons.
- Humidity: Humidity levels can be relatively high, especially in the summer.

Annual Weather Averages Near Kirkland

Averages are for De Kalb Taylor Municipal Airport, which is 13 miles from Kirkland.

Based on weather reports collected during 1992–2021.



Showing: All Year

All Year Climate & Weather Averages in Kirkland

High Temp: **84 °F**	Precipitation: **2.79"**	Wind: **16 mph**
Low Temp: **15 °F**	Humidity: **73%**	Pressure: **30.04 "Hg**
Mean Temp: **49 °F**	Dew Point: **41 °F**	Visibility: **9 mi**

Soil Conditions

The soil in and around Kirkland, Illinois, is primarily characterized by dark, fertile prairie soils, typical of the region. These soils are generally very productive and well-suited for agriculture. The fertile prairie soils in and around Kirkland are a major reason why agriculture is so important to the region's economy. These soils are highly productive and support the growth of corn, soybeans, and other crops. Drummer silty clay loam is the official state soil of Illinois and is likely the most prevalent soil type in the Kirkland area. Drummer soils are deep, poorly drained, and formed under tallgrass prairie vegetation. They are known for their high organic matter content, excellent fertility, and "black dirt" appearance.

Fire Risk

While wildfires might not be the first thing that comes to mind when you think of Illinois, they are still a concern, even in Kirkland. Here's why:

- **Grassland and agricultural areas:** Kirkland is surrounded by grasslands and agricultural fields, which can become dry and easily combustible, especially during periods of drought. These areas can provide fuel for wildfires to spread.
- **Climate change:** Climate change is increasing the risk of wildfires in many areas, including Illinois. Warmer temperatures, changes in precipitation patterns, and more frequent droughts can create conditions that are more conducive to wildfires.
- **Human activity:** Human activities, such as unattended campfires, improperly discarded cigarettes, and equipment sparks, are a common cause of wildfires.

Invasive Species
Invasive pests and weeds can be a problem in the Village of Kirkland. Here's why:

Invasive Weeds:

- Competition: Invasive weeds can outcompete native plants for resources like sunlight, water, and nutrients. This can lead to a decline in native plant populations and a decrease in biodiversity.
- Habitat degradation: Some invasive weeds can alter the structure and composition of habitats, making them less suitable for native wildlife.
- Agricultural impacts: Weeds can reduce crop yields and increase the costs of farming.
- Examples: Some common invasive weeds in Illinois include:
    - Garlic mustard: A highly aggressive plant that spreads quickly and can displace native wildflowers.
    - Japanese honeysuckle: A vine that can smother trees and shrubs.
    - Common buckthorn: A shrub that forms dense thickets and outcompetes native plants.
    - Knotweed: A group of plants that can form dense stands and are difficult to control.
    - Poison hemlock: A highly poisonous plant that can be found in disturbed areas.

Invasive Pests:

- Damage to crops and trees: Invasive pests can cause significant damage to crops, trees, and other plants.
- Spread of diseases: Some invasive pests can carry and transmit diseases to plants and animals.
- Economic impacts: Invasive pests can cause economic losses to agriculture, forestry, and other industries.
- Examples: Some common invasive pests in Illinois include:
    - Emerald ash borer: An insect that has killed millions of ash trees in North America.
    - Asian longhorned beetle: An insect that can damage a variety of hardwood trees.
    - Gypsy moth: An insect that can defoliate trees.
    - Soybean aphid: An insect that can reduce soybean yields.

What can be done?

- Prevention: The best way to deal with invasive species is to prevent them from arriving in the first place. This can be done by inspecting plants and other materials before bringing them into an area.
- Early detection and rapid response: If invasive species are detected early, they can be easier to control.
- Control methods: Various control methods can be used to manage invasive species, including manual removal, chemical control, and biological control.
- Public awareness: Educating the public about the dangers of invasive species is important for preventing their spread.

Species of Concern
See Tree List "Not Recommended" section of our Village tree list.

Vegetation

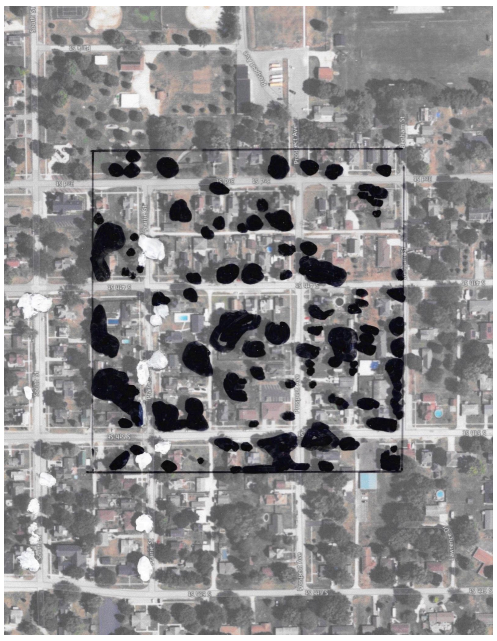
Village of Kirkland's Existing Tree Canopy Cover

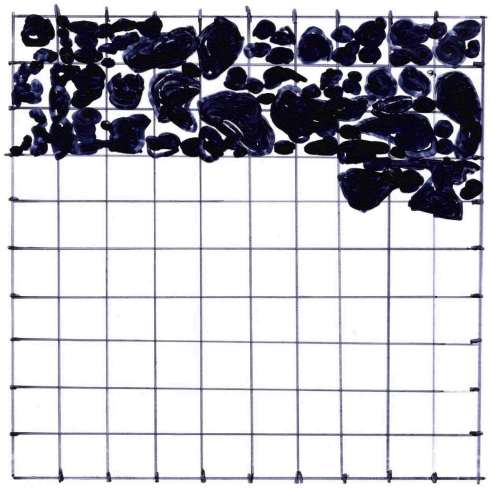
Historic Kirkland- 30%
Kennedy Homes-13%
Kirkwood -12%

Methodology:

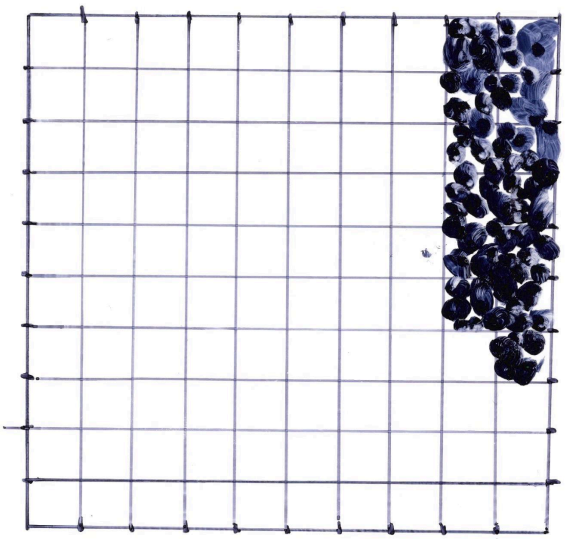
Aerial photographs at a standard elevation were used to sample each of three Kirkland neighborhoods (Historic, Kennedy and Kirkwood). Next, a 10 x 10 centimeter grid was overlaid and the tree canopy of each neighborhood shaded onto the grid. The shaded areas were migrated to a new 10 x 10 cm. grid and counted to calculate the percent of existing tree canopy.

HISTORIC KIRKLAND- 30% TREE CANOPY

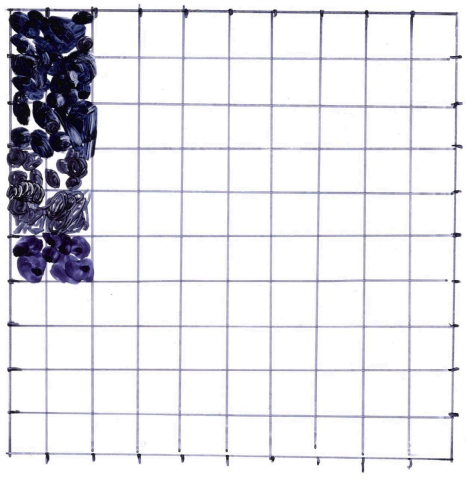




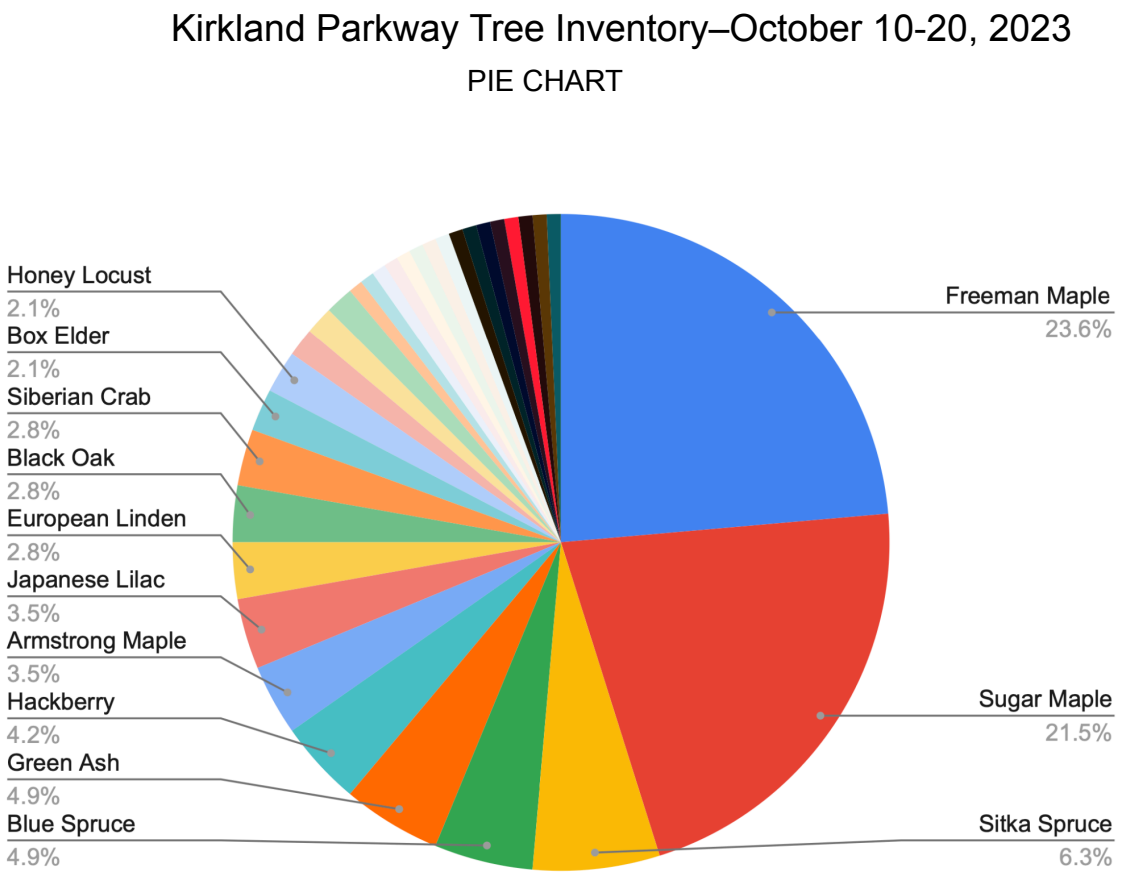
KENNEDY HOMES SUBDIVISION-13% TREE CANOPY



KIRKWOOD SUBDIVISION-12% TREE CANOPY

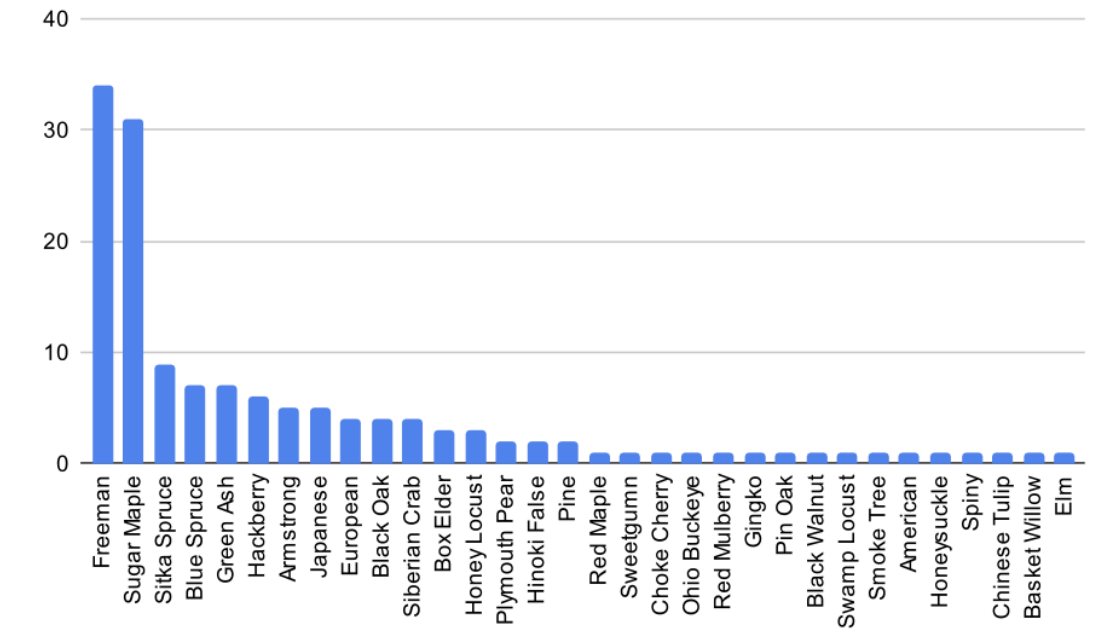


Tree Inventory



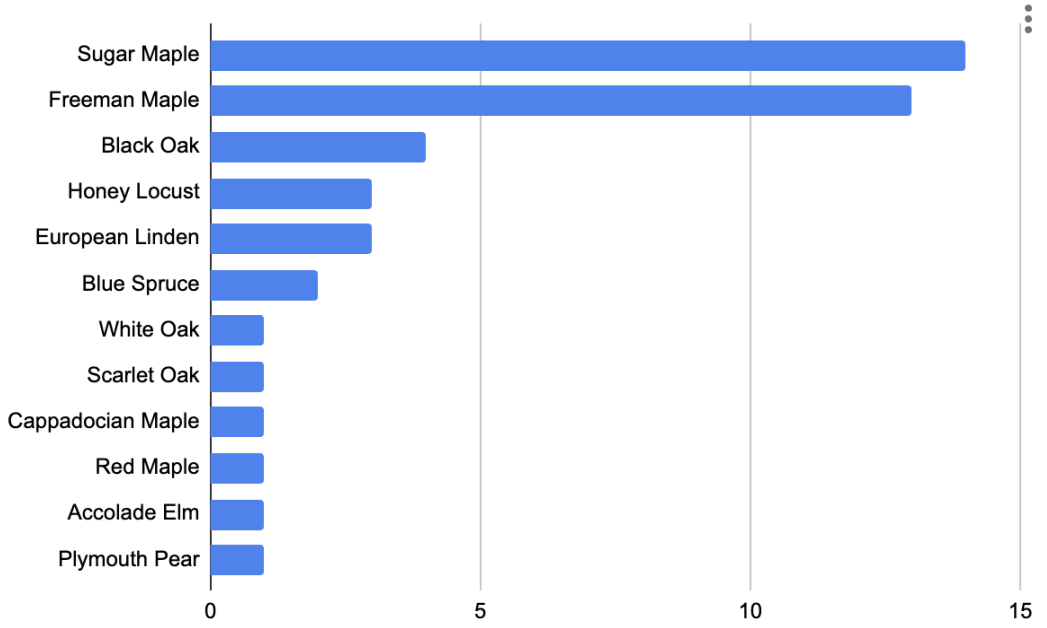
Kirkland Parkway Tree Inventory–October 10-20, 2023

BAR GRAPH



TREES IN OPEN SPACES

Franklin Township Park–Tree Inventory, October 10-20, 2023



Management

Responsibilities

Kirkland Tree Commission	growing space; exotic species invading natural areas
Public Works	tree health; growing space; utility line clearance; damage to sidewalk and other hardscape due to tree roots; exotic species invading natural areas; fire hazards at the urban wildland interface
Village Board	ordinances governing trees on public spaces in the Village

Management Practices

Are best practices employed? Are standards and practices up to date?

The Village of Kirkland should consider adopting a set of best practice standards (Genoa's specification manual, or American National Safety Institute (ANSI) Tree Care Standards or the International Society of Arboriculture Best Management Practices Standards).

Is there adequate species and age diversity within the urban forest?

No. See inventory results.

Are declining trees evaluated for risk? Are hazards removed?

Public Works has been focused on this (especially in Pioneer Park; and also removal of remaining ash trees)

Is there adequate equipment?

Progress: watering system acquired through DCCF grant; stump grinder; gator bags for watering trees; nylon mesh to protect trees from cicadas. Still needed: Bucket truck

Prunings are scheduled and unscheduled (such as in response to calls or weather events)?

Values and Issues

Is there a stewardship ethic in the community for urban forestry?

Yes, with the development of the Kirkland Tree Advisory Board, the interest, education, and stewardship has expanded.

Goals

2024 Short Term Goals

Goal	Timeline	Resource Needs	Budget	Was Goal Met ?
Apply for DeKalb Community Foundation Grant for more 50-50 trees and portable water tank and pump.	March 1, 2024 is the DEADLINE			YES
Celebrate Arbor Day with a tree planting ceremony in a public open space	3 PM on Friday, April 26, 2024	Buy/plant a tree	$300	YES
Apply for Tree City status	Before Arbor Day, April 26, 2024.	Must have: ⦿ tree board or dept. ⦿ a public tree care ordinance ⦿ an urban forestry budget of at least $2 per capita ⦿ an Arbor Day observance and proclamation		YES
Fall 2024 Plantings 50-50 Program 17 residents participate	Information to the public by June 30; info sent out with the July water bill; applications for permits turned in by August 15, 2024.	Post signs in yards.	Cost of printing.	YES
July 4, 2024 Informational Booth or Table	Over 4th of July weekend at events in town	Tree Commission pamphlet	printing or copying costs	NO
Continue as necessary the tree canopy and tree inventory assessment.	Finish before October 1.	aerial photographs; tree ID phone app.		YES
Finish a Draft	By the end of 2024			NO (please see

Urban Forest Plan				goals for 2025)
Improve our Facebook social media campaign	TBD	TBD		YES

2025 Short Term Goals

Goal	Timeline	Resource Needs	Budget	Goal Achievements Notes
Apply for Tree City Status		Brian/Tree Commision		
Arbor Day celebration	April 2025	Brian/Tree Commission	TBD	YES
Identify public parkway planting sites ● Entrance to Kennedy ● Along the entrance parkway to Kirkwood subdivision ● Behind Memorial on Main St ● In front of Pharmacy on Main St ● Identify Village-owned land available for planting	Throughout the year/October 2025	Tree Commission		YES
Inquire about partnering with Walnut Grove and Dekalb Forest Preserve	Throughout the year	Tree Commission		YES

Finish Urban Forest Plan	By the end of July, 2025			YES
Update and diversify tree options suitable for parkway planting	Throughout the year	Tree Commission		YES
New tree availability list for 2025 planting.	July/August 2025	Tree Commission and Village clerk		YES
Goal	**Timeline**	**Resource Needs**	**Budget**	**Goal Achievements Notes**
Contact St. Aubin to address discrepancies regarding tree diameters (delivered v. $ charged)	As able	Jim/Public Works or as directed per committee or Village		YES
Coordinate with Village to supply a link on Village website to the Tree Commission for the purpose of providing meeting minutes, recommended tree lists, applications, tree ordinances, etc.	Not specified/as able	Village Board		YES
Facebook coordinator	2025 season			YES
Establish a partnership with the High School Agriculture Program to grow saplings	By November, 2025	purchase of seeds	TBD	Ongoing

Long Term Goals

Goal	Timeline	Resource Needs	Budget	Goal Achievements Notes
Establish best practices for maintaining urban forest: provide training for Public Works staff on tree planting, care, and pruning.	In the next 1-5 years.	Funds to pay for training	TBD	
Guidelines for planting trees in new subdivisions				
Continue seeking out grant opportunities	ongoing			