



## KIRKLAND, WASHINGTON

# AN ASSESSMENT OF EXISTING AND POTENTIAL TREE CANOPY



- 38%** URBAN TREE CANOPY (UTC)
- 22%** POSSIBLE PLANTING AREA (PPA)
- 41%** AREAS UNSUITABLE FOR TREE PLANTING
- 0.8%** DECREASE IN UTC

Kirkland is a lively city located northeast of Seattle that provides breathtaking views of Lake Washington from the tree-lined streets of its downtown area. Kirkland has been acknowledged as a Tree City USA member for 21 years, which highlights the community's dedication to preserving their trees and natural surroundings. In 2024, a tree canopy assessment was conducted to enhance understanding of the city's canopy infrastructure. This assessment examined the **urban tree canopy (UTC)** and change over time, where new trees can be planted (**Possible Planting Areas - PPA**), and assessed locations where planting trees isn't feasible. The outcomes provide a comprehensive overview of the current state of the urban forest and its future possibilities that can be viewed in TreePlotter CANOPY (<https://pg-cloud.com/KirklandWA/>).

Using 2021 aerial imagery from the USDA's National Agriculture Imagery Program (NAIP), this study provides a near-current view of land cover throughout Kirkland. The study utilized machine learning techniques to generate a comprehensive land cover dataset, reducing dependence on human intervention and enhancing the ability to monitor changes in tree canopy coverage over time. The information from this study should be used to develop strategies to protect and expand the urban forest, ensuring accessible, well-maintained, and enjoyable outdoor spaces for all.

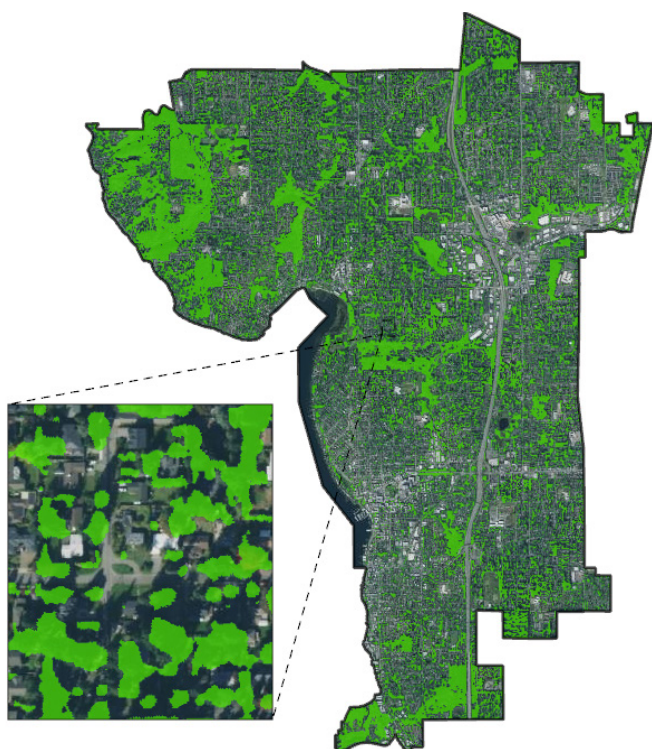


Figure 1. Urban tree canopy throughout Kirkland.

### CANOPY COVERAGE AND PLANTING POTENTIAL

The city covers 11,404 land acres, not counting the 275 acres of surface water bodies. Trees occupy over a third (38%) of this area, covering 4,289 acres. About a quarter (22%) of the city, or 2,480 acres, is open vegetated land that could be used for additional tree planting. The remaining 41% of the land is considered unsuitable for planting, primarily due to impervious surfaces and existing sports and recreation fields.

*\*Percentages exceed 100% due to rounding.*

### Single-Family Residential areas encompass:



- 66%** of Kirkland's land area
- 71%** of citywide canopy
- 85%** of citywide PPA

## OVERALL CHANGE IN CANOPY

Urban forests are constantly growing as existing trees mature and new ones are planted. However, their expansion is offset by challenges such as natural disasters, pest infestations, diseases, and urban development. While it's difficult to assess the net effect from the ground, high-resolution aerial imagery can provide a precise analysis of these canopy changes.

This study found that, in four years, Kirkland witnessed a reduction in its tree canopy. The City saw a net decrease of 89 acres in tree coverage, resulting in a 0.8% reduction between 2017 and 2021.



From 2017 to 2021, Kirkland's parks experienced a **0.4% decrease** in canopy coverage.

## ASSESSING CANOPY LOSS BY LAND USE

Assessing UTC metrics across various land use types helps to understand how different land uses and their primary functions impact tree canopy, offering valuable insights for urban planning and environmental management. The Single-Family Residential land use areas experienced the most significant reduction, losing 83 acres of canopy since 2017. This considerable loss underscores the critical role that residents play in the health and maintenance of Kirkland's urban forest. These results suggest that the state of the tree canopy in Kirkland may largely be dependent on the stewardship of private residents. Encouraging and supporting residential tree care initiatives could be a key strategy in preserving and enhancing the overall tree canopy in the community of Kirkland.

## TREE CANOPY CHANGE (%)

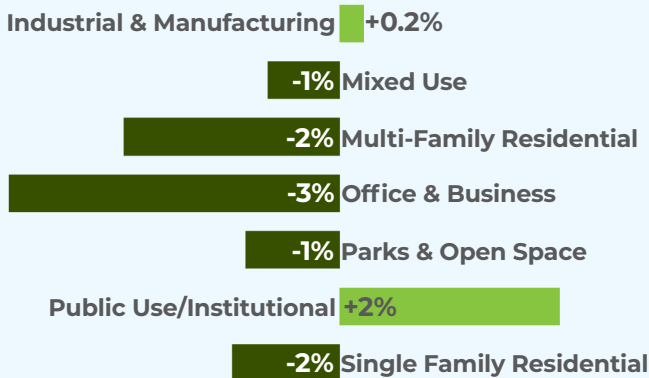


Figure 3. Change in canopy percent from 2017 to 2021 by land use.

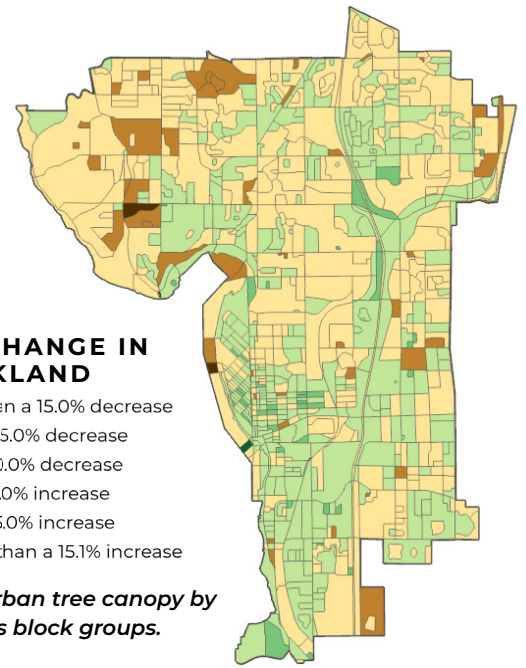


Figure 2. Urban tree canopy by census block groups.

## UTC CHANGE IN KIRKLAND'S NEIGHBORHOODS



**Largest Canopy Increase:**  
Central Houghton: +8 acres

**Largest Canopy Loss:**  
Finn Hill: -70 acres

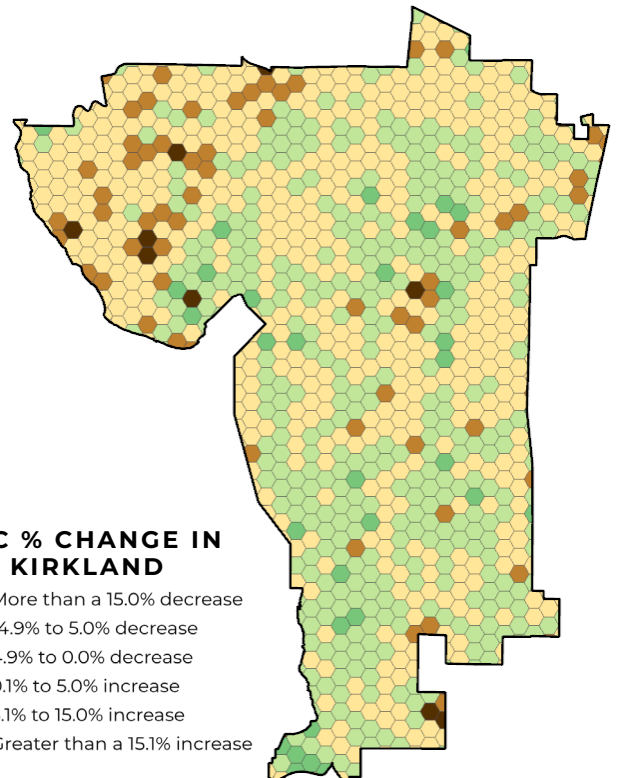


Figure 4. Urban tree canopy change by hexagons.

TREE CANOPY

**38%**  
4,289 ACRES

POSSIBLE PLANTING AREA

**22%**  
2,480 ACRES

TOTAL IMPERVIOUS AREA

**38%**  
4,472 ACRES