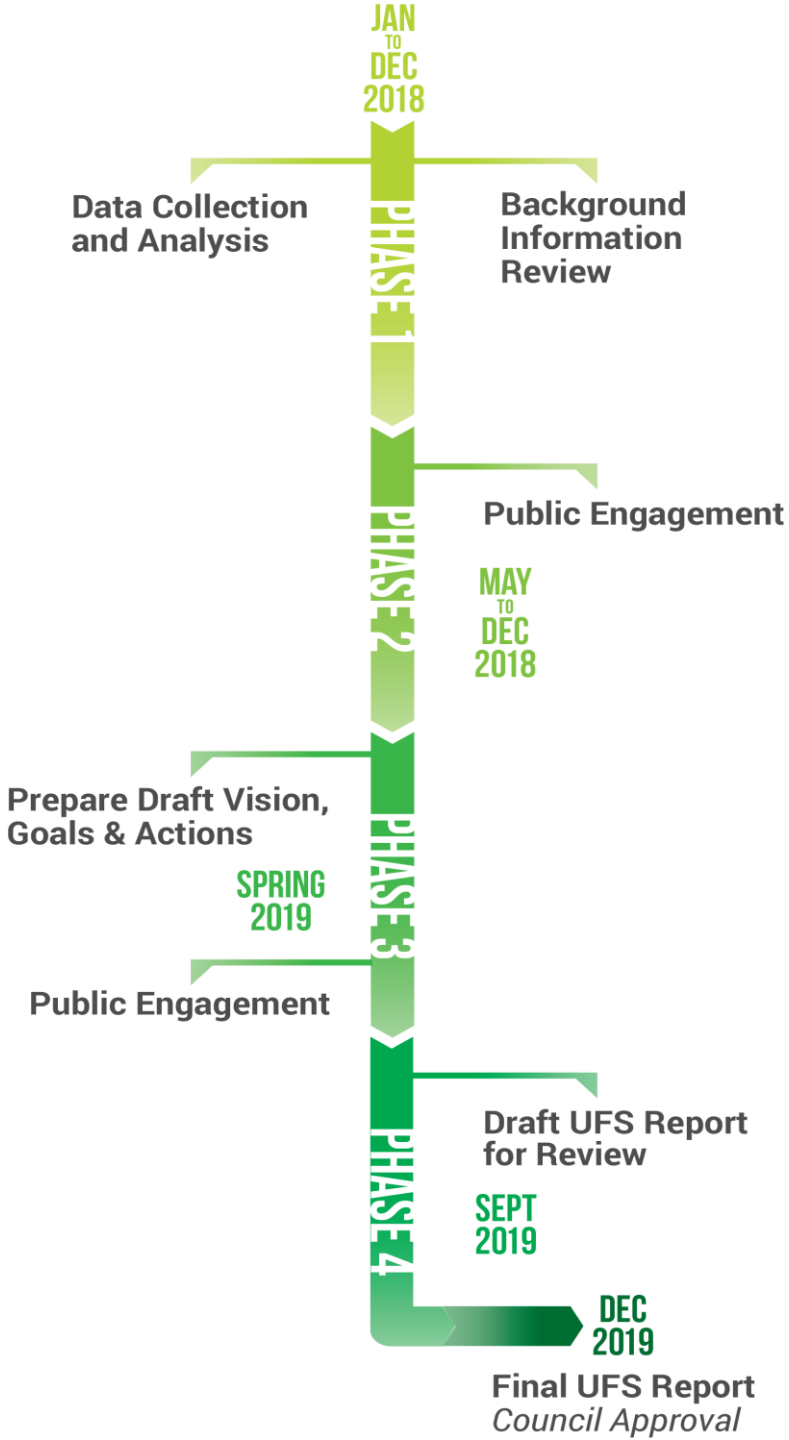
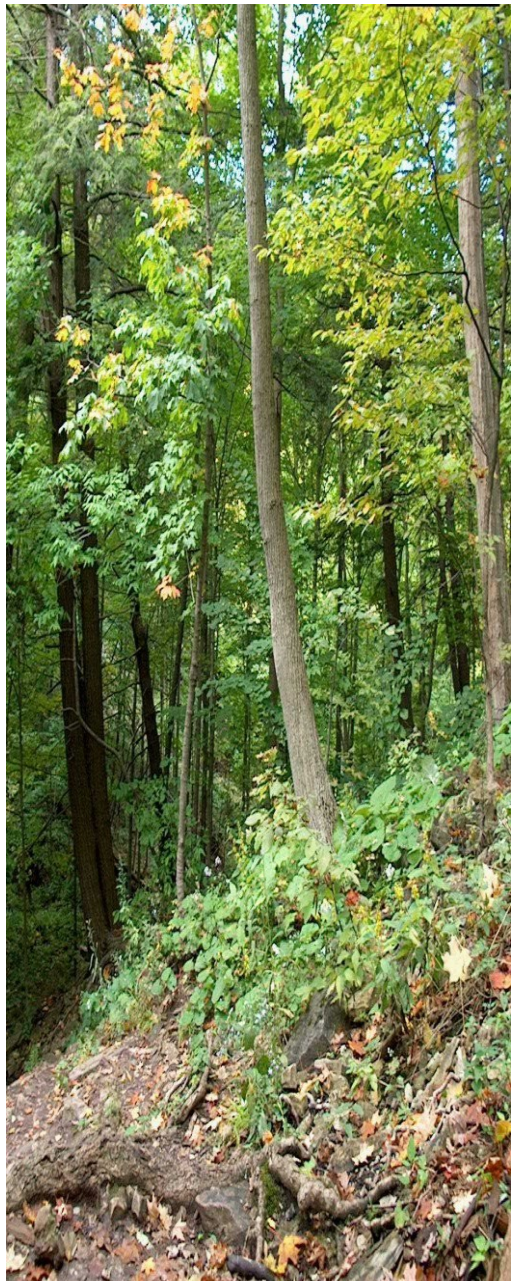
URBAN FOREST STRATEGY

DRAFT GOALS & ACTIONS

Keep Hamilton
Clean & Green Committee
October 22, 2019

Project Update





Hamilton's Urban Forest

Results & Trends

2018 iTree Eco Study – Value of Urban Forest in Hamilton

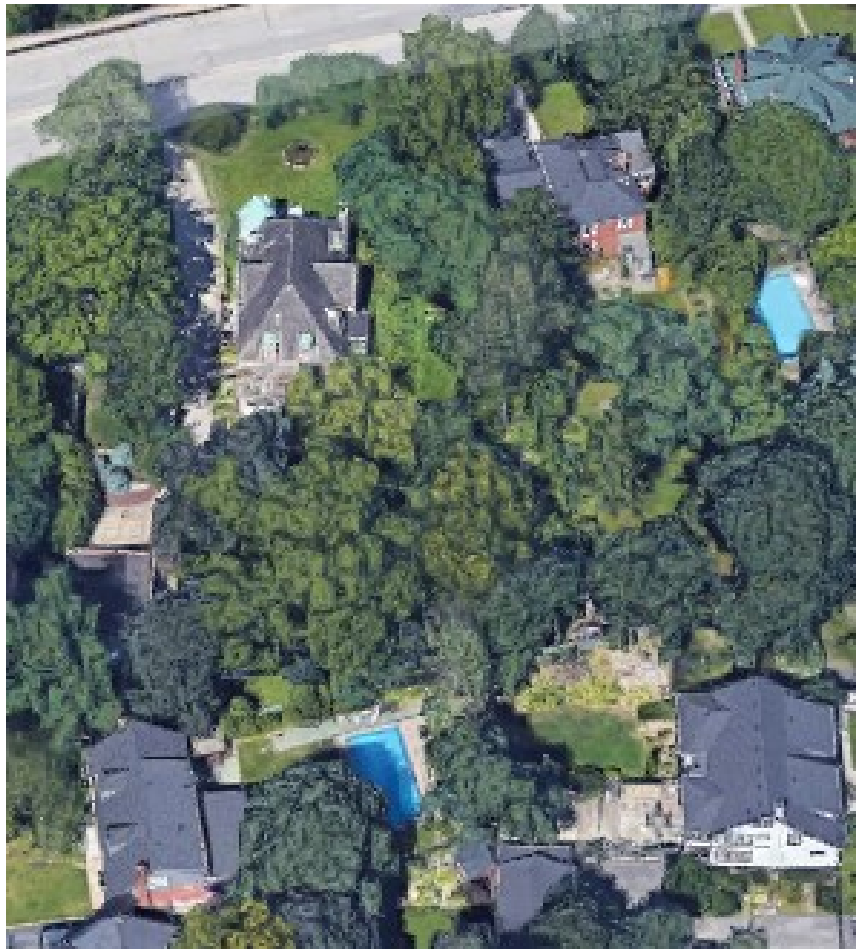
- Estimated cost to replace trees within Hamilton's urban forest: $2.13 billion
- Pollution Removal: 393 metric tons/year ($1.59 million/year) - calculated for ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide and particulate matter less than 2.5 microns
- Storm Water Management - Avoided Runoff: 815 thousand cubic meters/year ($1.896 million/year)
- Climate Change Mitigation - Building Energy Savings: $3.63 million/year
- Carbon Sequestration: 13.41 thousand metric tons ($1.54 million/year)

Software from the USDA Forest Service that stores and analyses urban forest data; calculates value of services trees provide

*www.itreetools.org

Canopy Cover Target

- Canopy cover is the area of leaves and branches (tree crowns) measured, when viewed from above, as a proportion of total land area.
- It is usually expressed as a percent of total ground area covered by tree crowns.
- Hamilton has 21.2% canopy cover (2018)
- The City's Official Plan target is 30% - based on the minimum amount of forest cover needed to sustain basic watershed function.
- Forestry has a target of 35%.



Existing Conditions

- Uneven distribution of forest cover across Hamilton.
- Most common species were black walnut, white cedar, and Norway maple.
- 20-25% of leaf area is invasive trees.
- Ash species still represent ~5% of total leaf area.
- Hamilton has about 168,000 street trees.
- Though no longer planted, Norway maple still make up 19% of the street tree population.
- Maple species represent 28.2% of the street tree population.

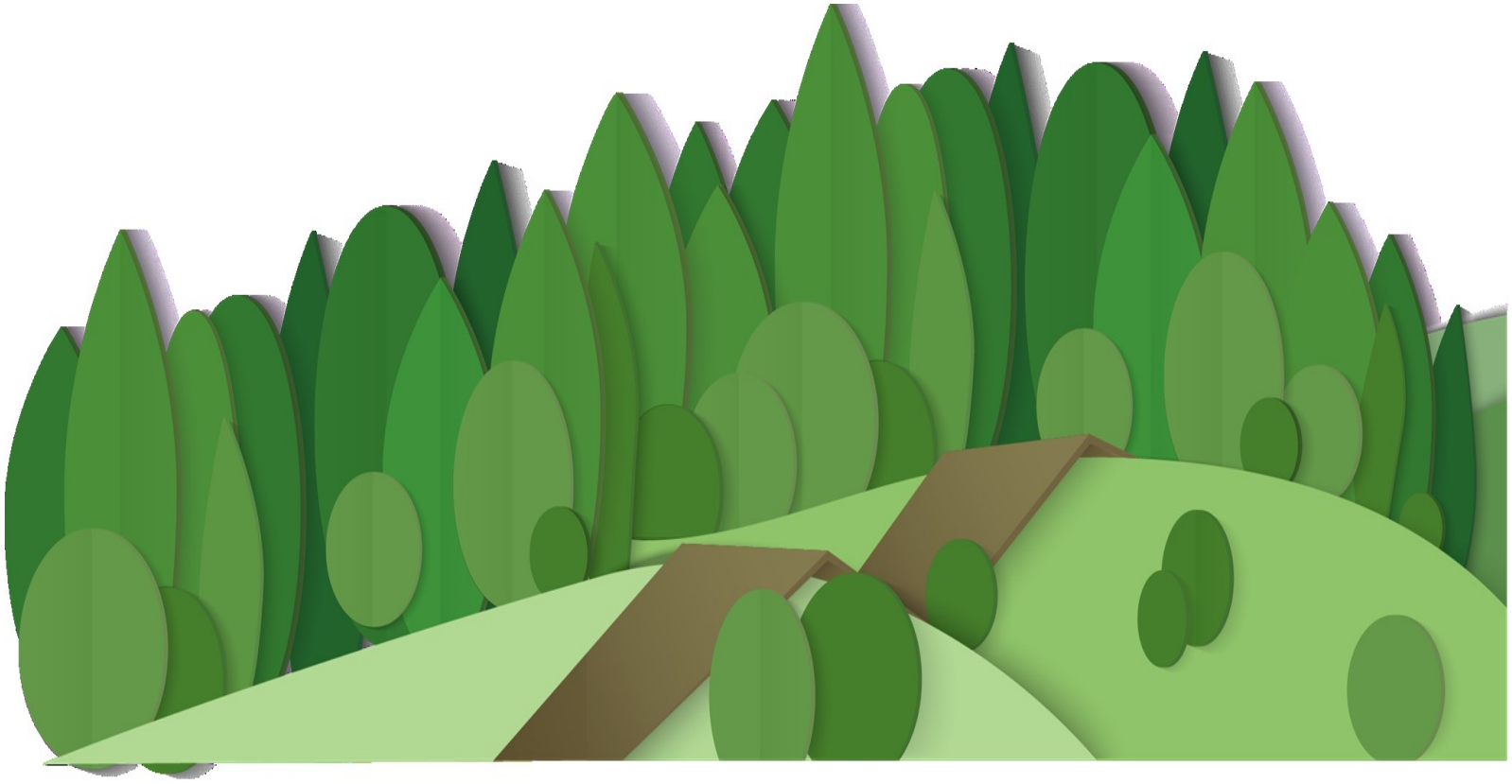
Draft Vision Statement

- Hamilton's urban forest is resilient and sustainable.
- It contributes to the health and well-being of citizens, and enhances the livability of the City.
- The City and all residents value the urban forest as an essential shared asset that should be intentionally planned and maintained for all future generations.

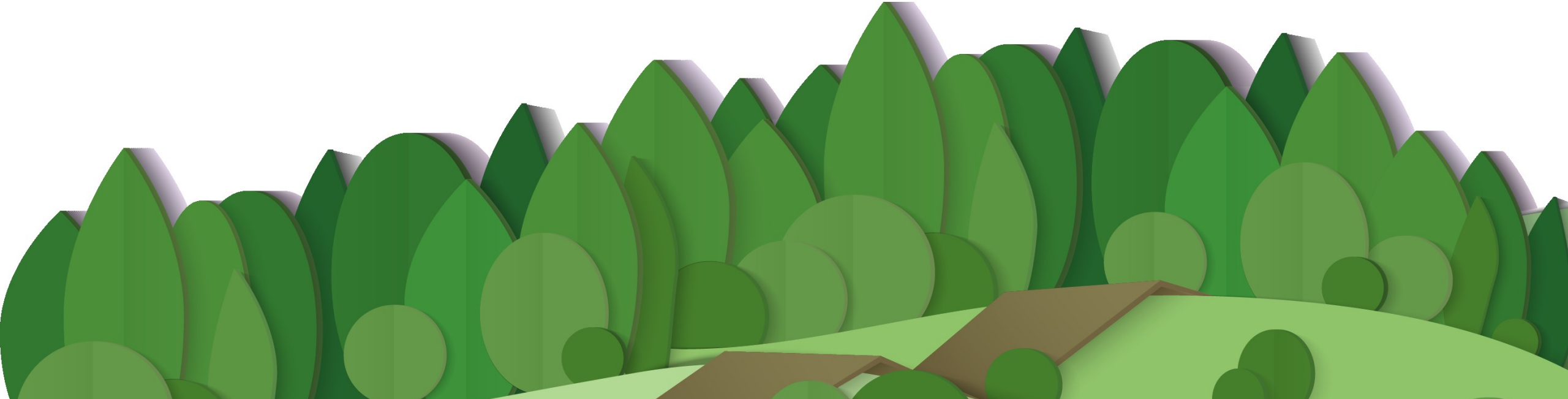
Draft Goals

6 Goals have been identified:

1. Plan & Act
2. Protect
3. Plant
4. Maintain
5. Communicate
6. Monitor & Adapt



Goal 1: Plan & Act



Urban Forest Planning Tools
Canopy Cover and Planting Area Analysis

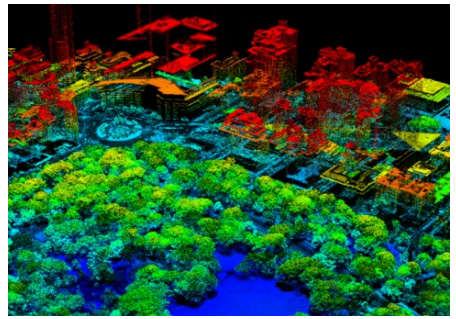
Land cover classification produces tree cover data which can be used to:

- Identify canopy cover by neighbourhood, ward, watershed, etc.
- Develop land use targets for tree cover
- Detect change in tree and land cover over time
- Prioritize planting areas

Tree canopy mapping was last done in 2009; should be updated

Land cover

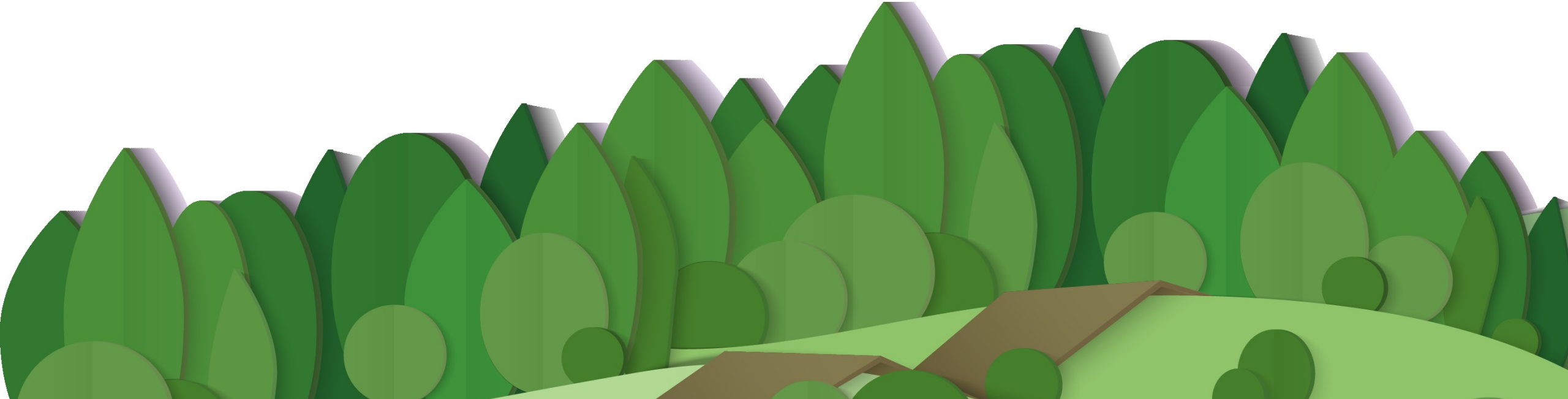
Enhanced by LidAR (3D model)



Goal 1: Plan & Act
Urban Forest Strategy Draft Actions

- Complete an canopy cover/planting area analysis for Hamilton, using spatial data.
- Use urban tree canopy data to develop land use targets for tree cover - integrate targets in development processes.
- Forestry & Parks staff should actively participate in policy, plan, and guidelines review to integrate the City's urban forestry goals.
- Update and actively maintain street tree inventory. Include assessment of tree condition/risk.

Goal 2: Protect



Known Causes of Tree Removal

- 18,189 ash trees have been removed due to Emerald Ash Borer as of 2018.
- Many private trees are also being removed for development and other landowner interests.
- Approximately 60% of the City's urban tree canopy is located on private land.
- Larger trees provide the greatest ecological and economic benefit; size distribution was skewed to smaller trees.

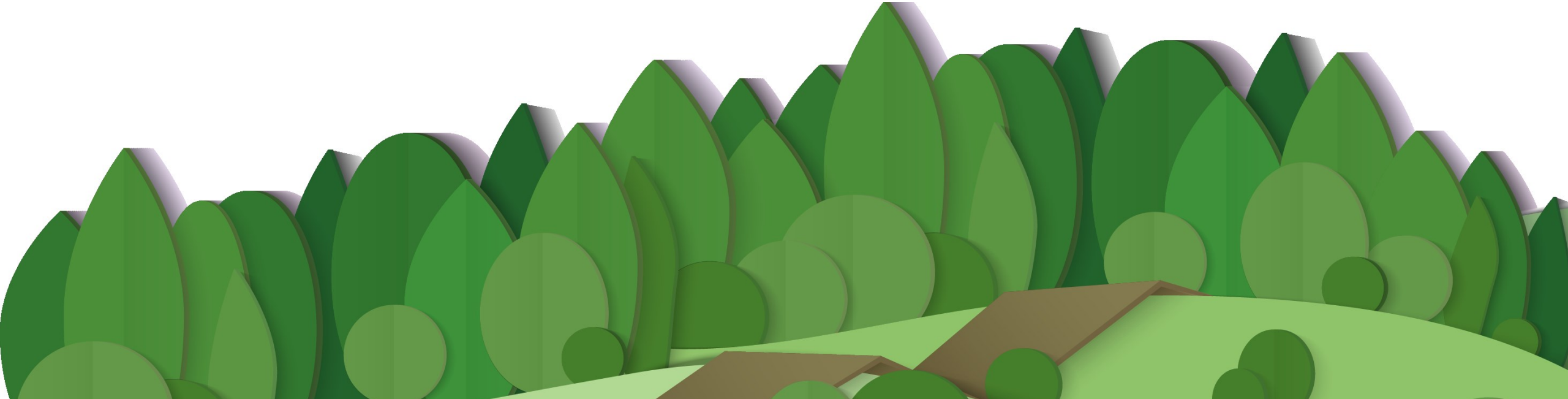
Protecting Trees on Private Property

- Comprehensive tree cutting by-law which regulates individual trees.
- Education and awareness programs, public outreach.
- Design with nature incentives to include existing trees into development (recognition program).
- Updates to existing policies on tree protection.
- Better monitoring of Tree Protection Plan implementation on development sites.
- Monitor and plan for pests, diseases, invasive plants.

Goal 2: Protect
Urban Forest Strategy Draft Actions

- Implement a private tree by-law for Hamilton's urban area that includes individual trees on private property.
- Collect data to identify the root causes of change/loss in the urban tree canopy.
- Require a calculation of canopy balance (leaf area of trees removed vs. proposed planting) as part of arborist reports for development applications.
- Report on canopy balance as a performance indicator for Hamilton.

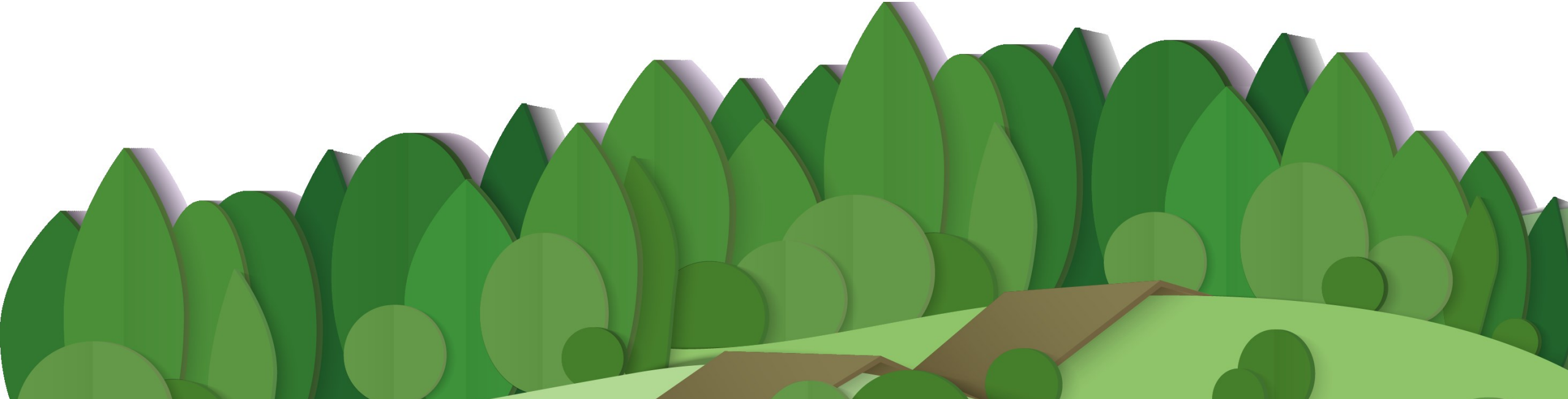
Goal 3: Plant



Goal 3: Plant
Urban Forest Strategy Draft Actions

- Identify the number of trees required to be planted in Hamilton over the next 20 years to meet canopy cover target and increase funding for tree planting to meet target.
- Review planting lists periodically to ensure species diversity.
- Examine tree planting budgets and programs to identify how to plant more trees over the next 5 years.
- Identify available planting space for street trees. Prioritize planting on higher quality sites and in areas of low & mature canopy.

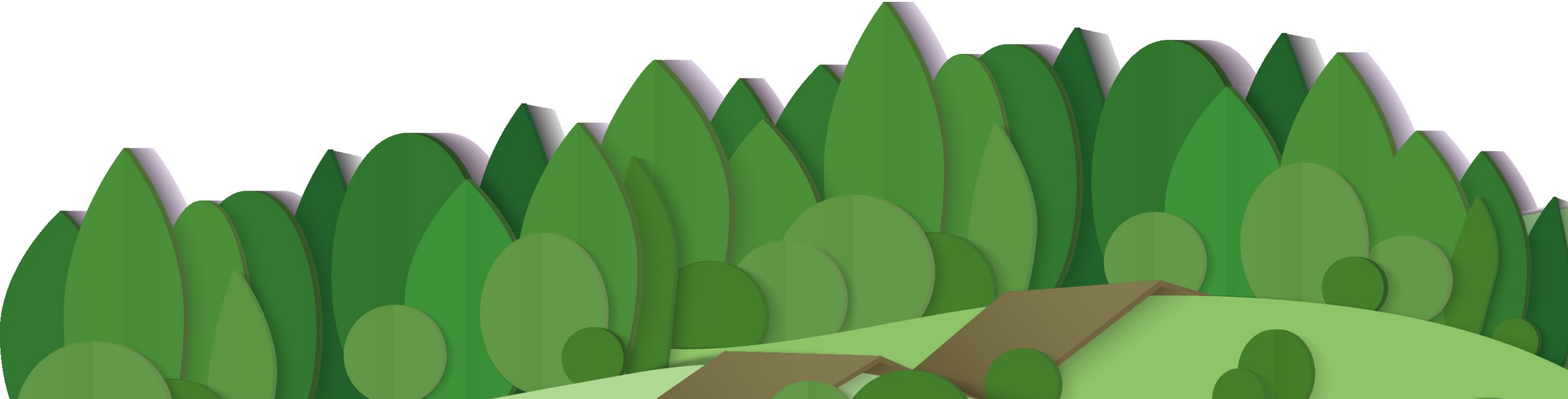
Goal 4: Maintain



Goal 4: Maintain Urban Forest Strategy Draft Actions

- Update and actively maintain a street tree inventory.
- Develop an invasive species management policy for Hamilton.
- Work with other agencies to prioritize areas where forests will be managed to improve their health.
- Develop a policy on how the City will monitor & manage forest health threats in Hamilton.
- Develop service standards for hazard trees and other forestry service requests.

Goal 5: Communicate



Communications and Outreach

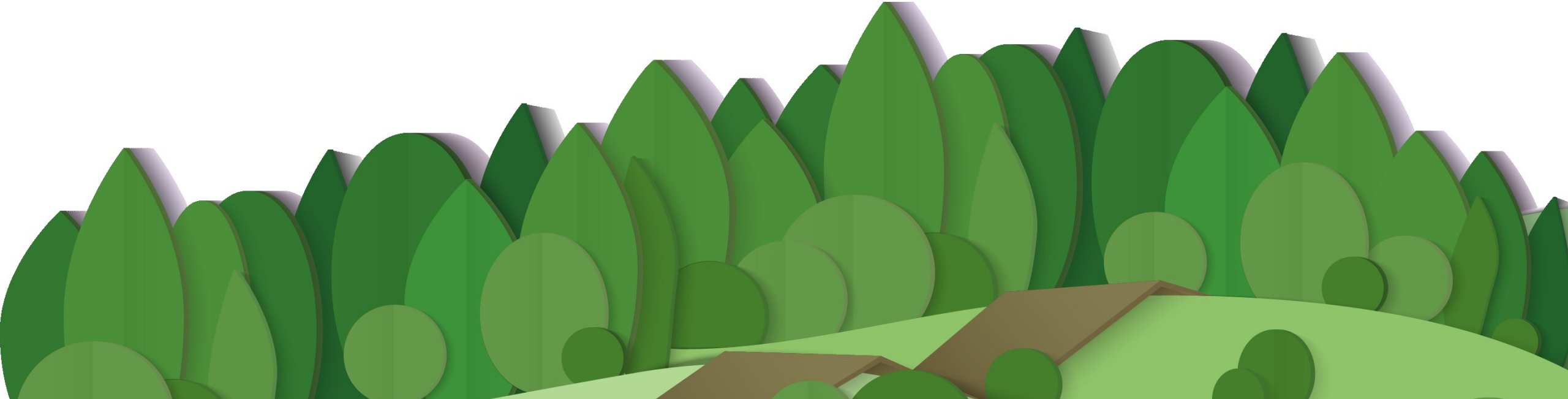
Source: Trees Hamilton

- Hamilton has established outreach and communications programs.
- Challenge - lack of understanding of urban forest benefits and attitudes toward trees (e.g., trees considered to be an easily replaceable resource rather than a long-term asset worthy of investment).
- The power of maps - spatial data is a powerful communication tool.
- Hamilton has an engaged non-profit community – citizen science has already gathered data on the City's urban forest.

Goal 5: Communicate
Urban Forest Strategy Draft Actions

- Complete a detailed study to identify the attitudes towards trees, and other opportunities and barriers to growing the urban tree canopy. Use the results of the study to prepare a targeted outreach strategy.
- Build online mapping tools to communicate the location and condition of Hamilton urban forest, based on available spatial data.
- Work with local non-profits to explore applications in citizen science that will support the Urban Forest Strategy goals.

Goal 6: Monitor & Adapt



Adaptive Management

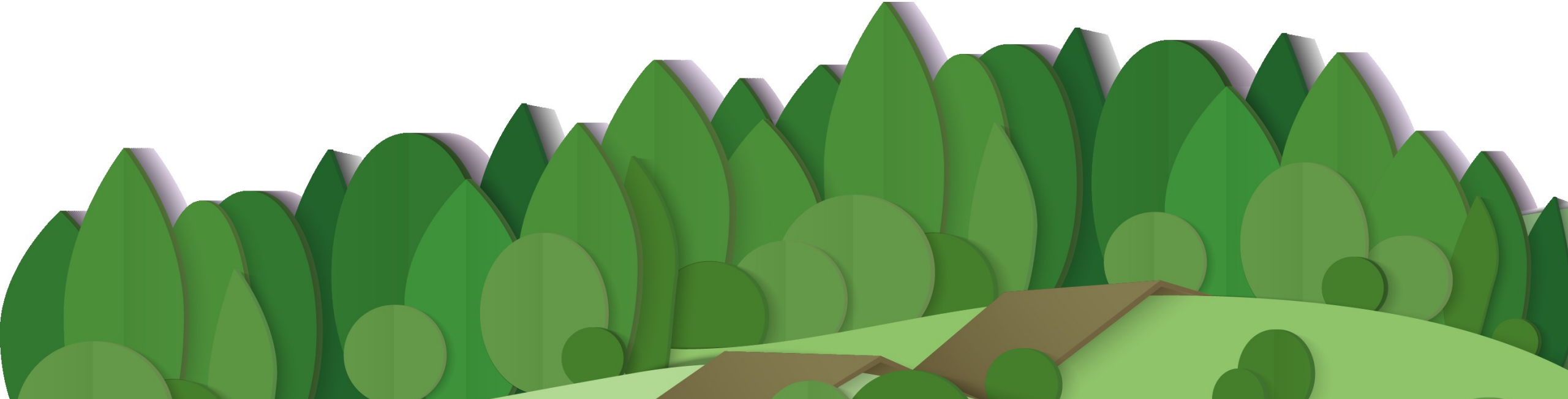
- The City needs an up-to-date inventory of trees and spatial data.
- Tools can help with change detection and monitoring (e.g. iTree).
- Data can be used to apply the right solutions and adapt to changes (pests, diseases, climate change).

Souce: BioForest

Goal 6: Monitor & Adapt
Urban Forest Strategy Draft Actions

- Monitor land cover to assess changes in canopy cover.
- Report to Council on the best options for a forestry data management system.
- Update the Urban Forest Strategy (every 10 years or in response to significant environmental change).
- Use available tools (iTree) to assess change in canopy cover every 2 years.
- Monitor change using Urban Forest Strategy Criteria and Indicators and report to Council on progress toward meeting urban forest goals (every 5 years).
- Monitor street tree mortality using data management system to determine if planting/maintenance program is effective.

Questions?



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https://www.hamilton.ca/city-initiatives/strategies-actions/urban-forest-strategy