



# Natural Heritage Management Study

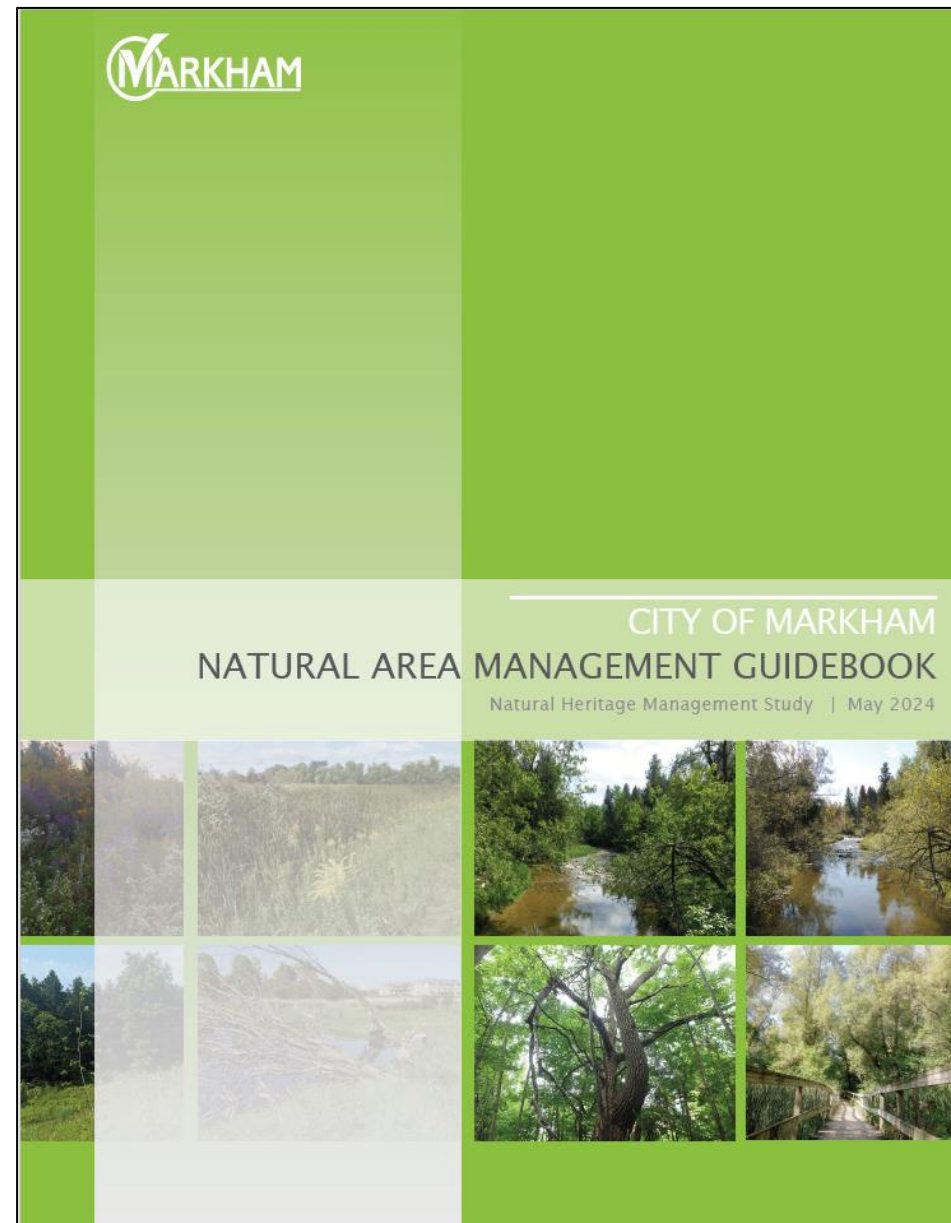
Development Services Committee

May 21, 2024



# Purpose

- Provide an overview of the findings and recommendations of the Natural Heritage Management Study
- Seek Council endorsement of the Study and outline next steps



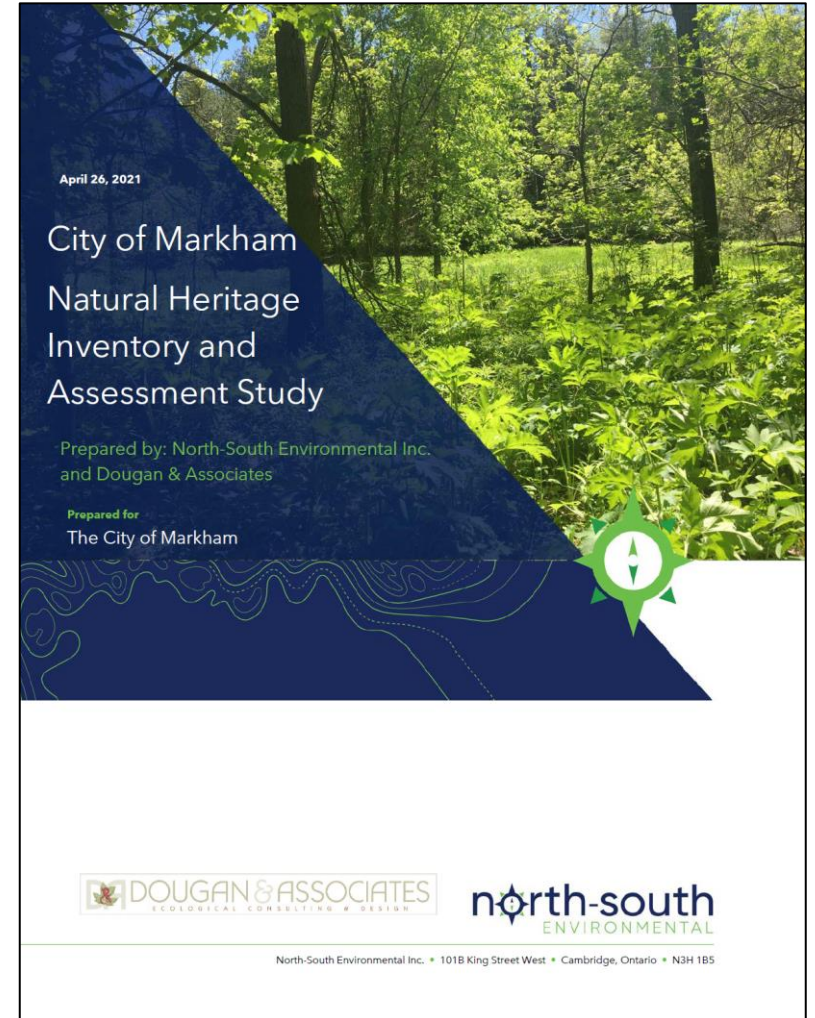


# Background

- In 2021, Council received an update on the health and condition of our natural heritage system.
- Recommendations to address threats to natural areas:
  - Need for Invasive Species Management
  - Restoration and stewardship of city lands
  - Monitoring biodiversity trends and health of natural areas



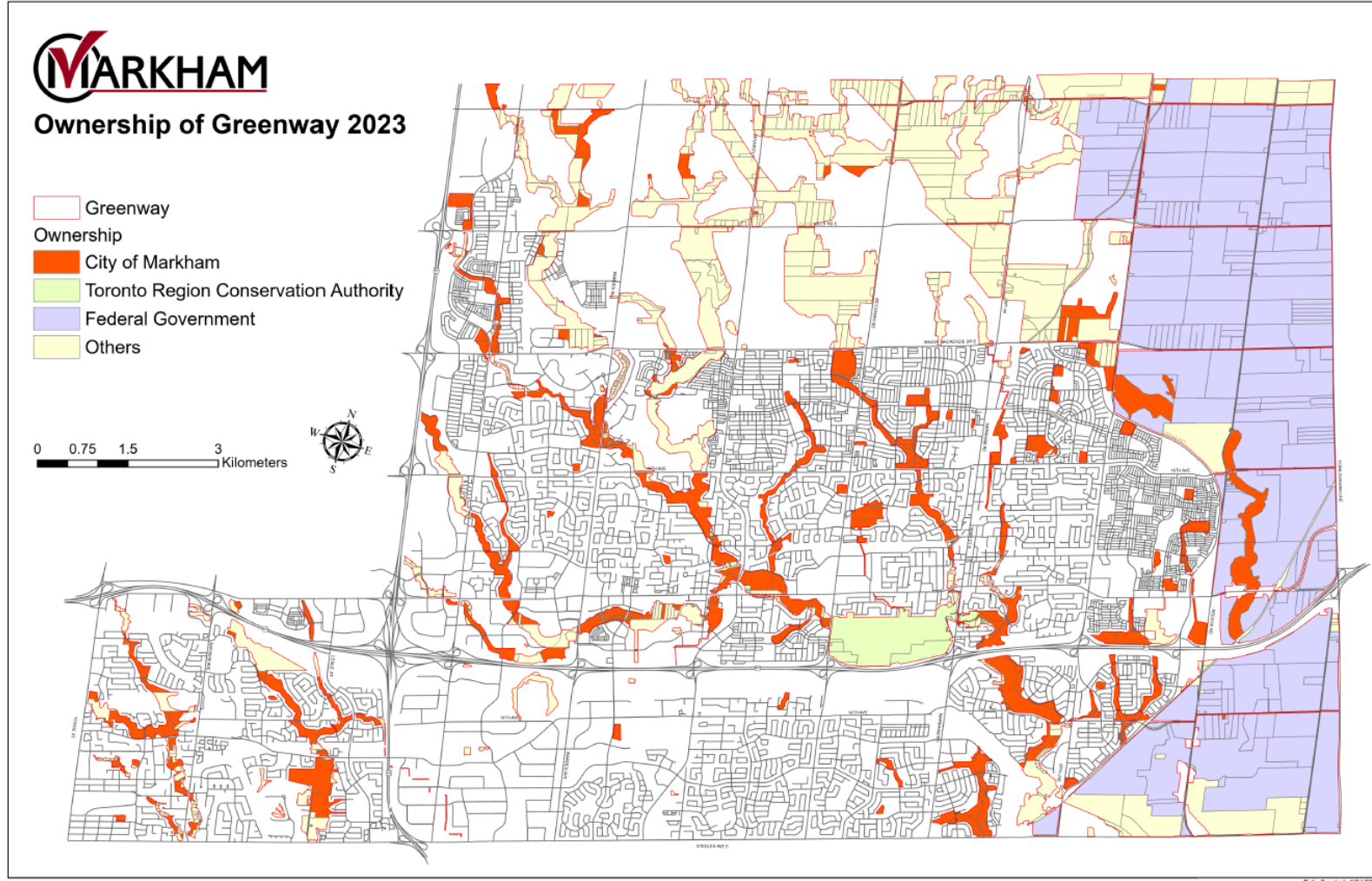
Natural Heritage  
Management  
Study







# Background





City of Markham

# Natural Heritage Management Study (NHMS)

Three Primary Study Components:

1. Vegetation Field Work and Analysis
2. Natural Area Management Guidebook
3. Invasive Plant Species Management Plan



Presented by:





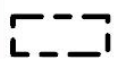
Loretta Hardwick, CBCL Limited

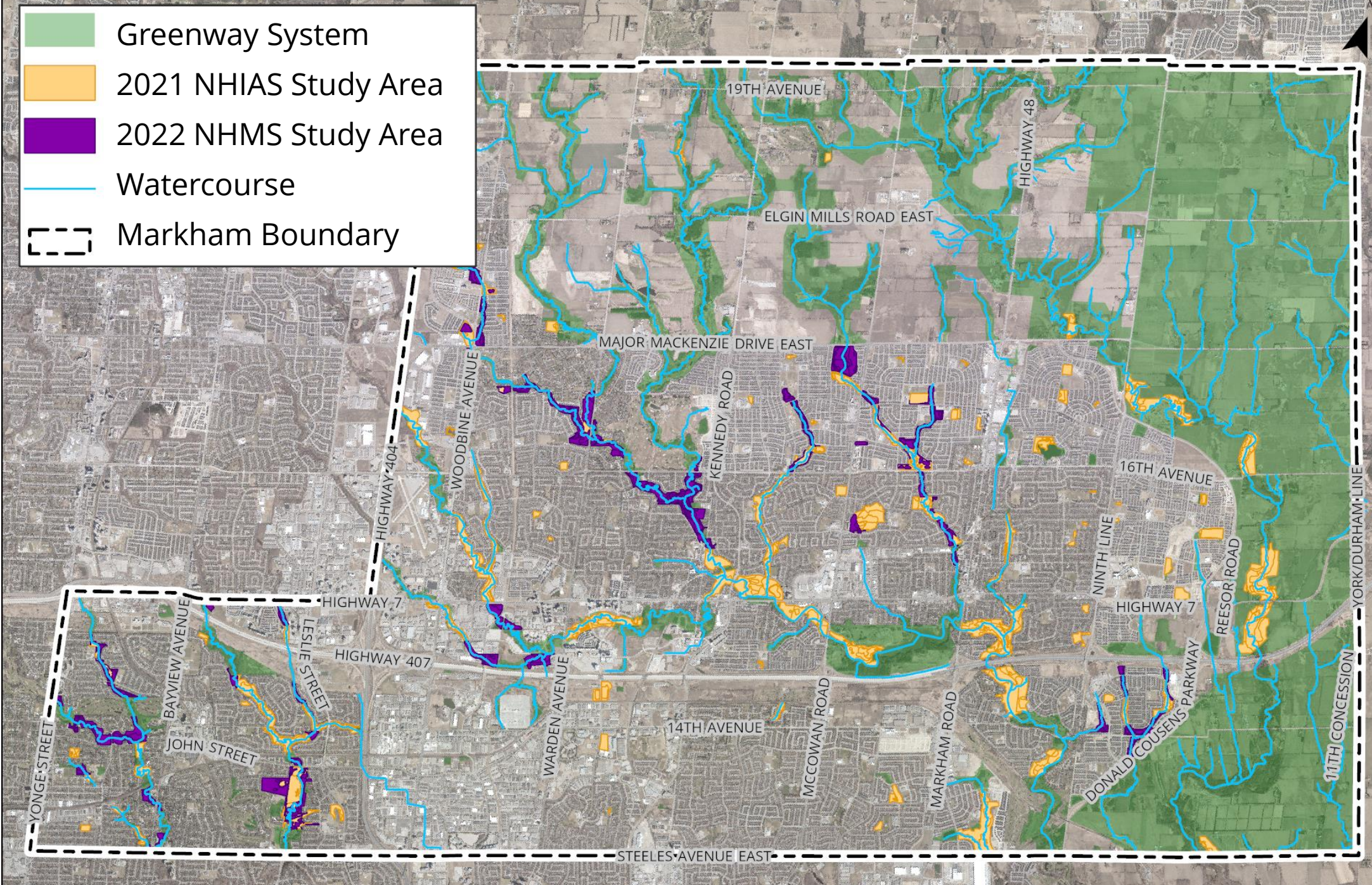






# NHMS Study Area

-  Greenway System
-  2021 NHIAS Study Area
-  2022 NHMS Study Area
-  Watercourse
-  Markham Boundary







# NHMS

## 2022 Vegetation Analysis

- Significant changes since 1991
  - Open country → Forest and Thicket
  - Increase in aquatic habitat (SWM facilities)
- Vegetation changes
  - Black walnut dominant canopy species
  - Common buckthorn in subcanopy/understorey
- Invasive species
- Dieback of ash, elm, poplar

# Natural Area Management Guidebook

- Natural Heritage Policy Context
- Current Conditions and Threats to Natural Areas
- Management Practices and Strategies
  - Objectives
  - Current approaches
  - Recommended management practices
- Implementation Considerations







# Threats to Natural Areas

- Environmental change
  - climate change, urbanization
- Biological
  - invasive species, forest decline, outdoor pets
- Abiotic
  - residential encroachment, trails, dumping, harvesting, noise and light, erosion, fires, floods, droughts, pollution

# Recommended Natural Area Management Practices

Topic	Objectives
Land Use and Natural Heritage Planning	Protect natural heritage features and functions within the Greenway System.
Ecosystem Management and Restoration	Maintain and restore diverse native vegetation communities that provide wildlife habitat and ecological services.
Wildlife	Preserve and restore wildlife habitats and respect the freedom of animals to feed, shelter, reproduce, and migrate within the urban landscape.
Watercourses and Aquatic Habitat	Protect and restore aquatic habitats, water quality, and natural flow regimes of watercourses.
Invasive Species	Prevent the introduction and spread of invasive species and mitigate the impacts of established invasive species in the Greenway System.
Public Infrastructure Maintenance	The footprint and ecological impacts of public infrastructure construction and maintenance in natural areas shall be minimized.
Public Use	Public enjoyment and community stewardship of natural areas shall be encouraged through education, collaborative partnerships, and enforcement.



# Invasive Plant Species Management Plan

- Current conditions
- Management tools and approaches
- Treatment costs
- Integration into existing procedures
- Prioritization framework
- Monitoring





# Impacts of Invasive Plants

- Biodiversity loss, habitat degradation, and disruption of ecological processes
- Human health, safety, and recreational enjoyment
- Economic impacts
- ~300 ha of City-owned natural areas are dominated by invasive plant species



# Tools and Approaches

**Prevention** of new introductions and spread of existing invasive plants

**Removal or Control** of occurrences of invasive plants

**Restoration** of management sites following removal of invasive plants

**Monitoring** of management sites and for new occurrences of invasive plants

# Implementation

- Living document
- Informed by stakeholders and changing conditions
- Regular reassessment and prioritization
- Routine monitoring
- Strategies to adapt to changing conditions and priorities





Thank you

Questions?