



Red Hill Valley

Background on Ecological Restoration
January 16, 2014



Introduction

- Why are we reviewing this now?
- How does it fit in with the role of Joint Stewardship Board role?
 - Protect and enhance the ecosystem
 - Assessment and Monitoring
- Purpose of presentation - Background
- Next steps on Monitoring





Red Hill Valley Project

- The Red Hill Valley Project was an “environmentally-integrated” infrastructure project which included:
 - A controlled access parkway,
 - Improved storm water management,
 - Naturalization and stabilization of urbanized sections of the Creek using natural channel design
 - **A landscape management plan including trails, native tree and shrub planting, and ecological restoration**

An aerial photograph showing a suburban neighborhood with a highway interchange. A green corridor, likely the Red Hill Valley, runs through the center of the image, separating the residential areas. The corridor is filled with trees and vegetation, contrasting with the surrounding urban development.

Valley Restoration

- To **restore natural ecological diversity and function on more than 100 hectares** of land located within the Red Hill Valley
- A recognized **environmentally sensitive area**
- Important **natural corridor** linking Niagara Escarpment forests to Lake Ontario shoreline
- **One of the largest ecological restoration projects** ever undertaken in a major urban setting in North America

Kayanase: Mohawk for “new path” or “fresh tracks”



- Ecological restoration and native plant and seed business based at Six Nations
- Kayanase is dedicated to **improving the health of Mother Earth** and the Haudenosaunee worldview is integral
- **Science-based techniques and adaptive management with Haudenosaunee cultural values and ecological knowledge**

Share knowledge
and promote
partnerships toward
the goal of
protecting habitat
and enhancing
disturbed areas.

“Design Build”

- The project was completed as a “**design build**” restoration project (2007-2012)
- Kayanase Restoration Ecologists **designed and managed the restoration program:**
 - initial site assessment,
 - plan development,
 - site preparation,
 - seed collection,
 - plant propagation,
 - site installation,
 - maintenance and monitoring
 - to a site “*free-to-grow*” stage



Restoration Plans

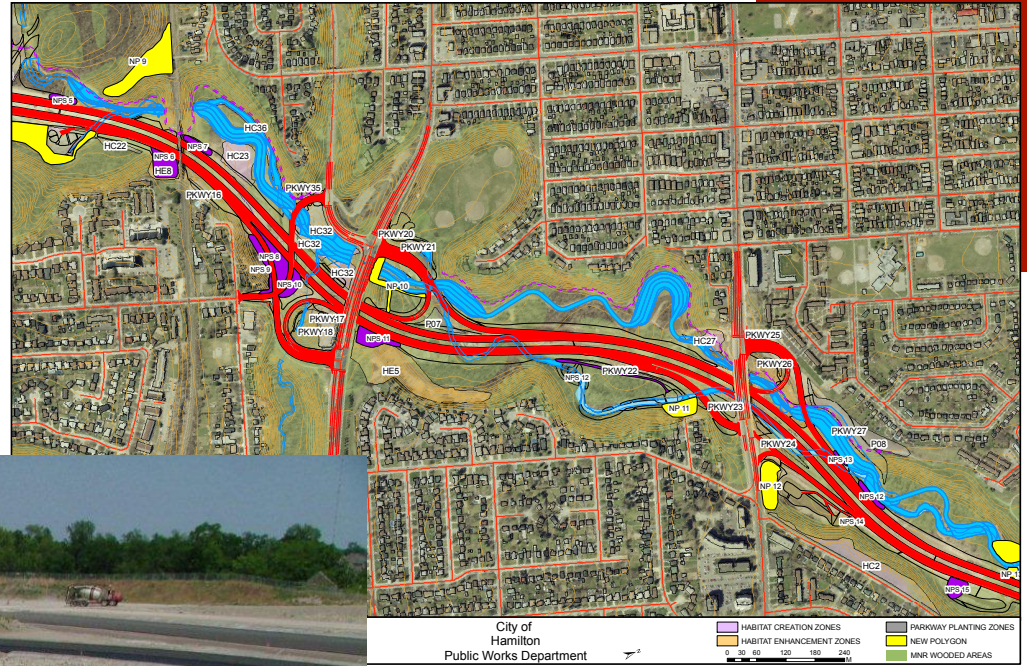
- Restoration plans included seeding and planting of over **1,000,000 native trees, shrubs, and forbs**
- Established from **local wild-type seed** collected from within 75 km of the project site





Invasives Management

- In addition to the establishment of native plants, a large component of the restoration work involved the management (e.g., removal) of **invasive exotic species, which was a major factor impacting the ecological integrity** of the Red Hill Valley



Long-term Monitoring

- Monitoring needed on an on-going basis to evaluate success and identify remedial actions
- “It is recommended that monitoring will need to be undertaken **annually for at least a five-year period, post-implementation**”
- “Provided desired results are being achieved, monitoring may then be undertaken **every two to three years, using same parameters**”
- “The annual, **long-term monitoring program** will need to address:
 - New Plantings
 - Tree Diseases and Pests
 - Invasive Species”

Source: Red Hill Valley Project Landscape Design & Habitat Enhancement Plan (Draft), ENVision – The Hough Group, Dougan & Associates, 2005, p 31-32



What's Next?

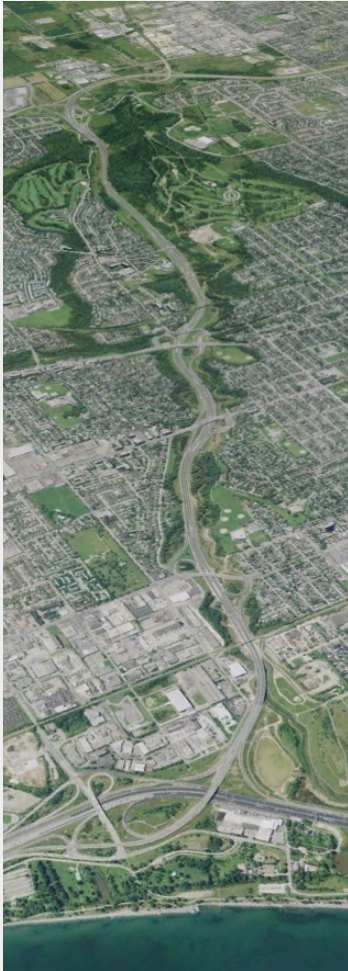
- Monitoring Results available Feb/March 2014:

- Rainfall and streamflow
- Groundwater
- Fluvial geomorphology
- Surface water quality
- Landscape management and ecosystem monitoring
- Fish and Fish habitat



- Tentatively Scheduled Presentations:

- Monitoring **Background – February** meeting
- Monitoring **Results – March** meeting





Sources of Information

- Documents
 - *Red Hill Valley Project Landscape Design & Habitat Enhancement Plan (Draft)*, Dougan & Associates, 2005
 - *Red Hill Valley Project Ecological Restoration plan, Detailed Design Plan Report (Draft)*, Kayanase, n.d.
- Kayanase website, maps and brochure
 - <http://www.kayanase.ca/>
- City of Hamilton web site and presentation
 - <http://www.hamilton.ca/NR/rdonlyres/F8BFCC11-00EE-4DB9-94CB-3242D66E2DB4/0/WebsitePresentation.pdf>