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**TO:** GENERAL COMMITTEE

**SUBJECT:** ECOLOGICAL OFFSETTING POLICY

**WARD:** ALL

**PREPARED BY AND KEY CONTACT:** W. LOEVENMARK B.L.A, B.A., LANDSCAPE ARCHITECTURAL PLANNER, EXT. 4743

**SUBMITTED BY:** M. BANFIELD, RPP, DIRECTOR OF DEVELOPMENT SERVICES

**GENERAL MANAGER APPROVAL:** B. ARANIYASUNDARAN, P. ENG., PMP, GENERAL MANAGER OF INFRASTRUCTURE AND GROWTH MANAGEMENT

**CHIEF ADMINISTRATIVE OFFICER APPROVAL:** M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

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### **RECOMMENDED MOTION**

1. That the Ecological Offsetting Policy attached as Appendix "A" to Staff Report DEV033-23, be approved.
2. That the Tree Protection Manual be updated to reflect the approved Ecological Offsetting Policy.

### **PURPOSE & BACKGROUND**

#### Report Overview

3. The purpose of this Staff Report is to present an Ecological Offsetting Policy for approval by Council, as per motion 23-G-082.
4. On April 19, 2023, City Council adopted motion 23-G-082 regarding PRIVATE TREE BY-LAW AND ECOLOGICAL OFFSETTING REVIEW as follows, which included the relevant directions to:
  - That the Fees By-law 2023-023 be updated to include an Ecological Offsetting fee of \$57,500 per hectare of woodland removal and \$500 per tree for individual tree replacement value as an interim measure until an Ecological Offsetting Policy is approved by Council with woodlots with an area greater than .5 hectares in the Nottawasaga Conservation Authority areas purchased prior to April 5, 2023, being exempt from these fees.
  - That staff in the Operations and Development Services Departments develop an Ecological Offsetting Policy to achieve a No Net Loss (NL) target for terrestrial natural heritage systems that includes the creation and restoration of forest habitat on city-owned lands and a tree planting grant program to subsidize tree planting on private property and report back to Council by October 2023.
  - That a full-time Restoration Ecologist position be approved in Development Services that is fully funded from the Ecological Offsetting Program fees to administer the program, including the review and approval of Ecological Impact Statements (EIS) required with development applications that are no longer reviewed by Conservation Authorities under Bill 23, and to support the planning, design, implementation, and monitoring of natural heritage features identified through the program.

- That staff in Finance be authorized to establish an “Ecological Offsetting” reserve to be used specifically to fund terrestrial natural heritage creation and restoration to achieve the No Net Loss target, the private lands tree planting grant program, and the positions identified in the report required to administer and implement the program.

## **ANALYSIS**

5. The City of Barrie’s Ecological Offsetting Policy has been developed as per Council Motion 23-G-082, Appendix “A”, and further to Staff Report OP001-23.
6. Ecological offsetting is a strategy where an established fee may be collected by the municipality to compensate for the removal of trees or woodland area for development purposes and applied to the planting of an equivalent number of trees or woodland area in an alternate municipally owned location within City boundaries to achieve “no net loss” of the natural heritage feature in the long term.
7. Ecological offsetting is an important step towards achieving environmental sustainability both in Barrie and the province of Ontario. The policies within the following provincial, municipal, and watershed documents provide the basis and justification for Barrie’s Ecological Offsetting Policy:
  - i) Provincial Policy Statement (e.g., Sections 1.8 and 2.1.2)
  - ii) Lake Simcoe Protection Plan (e.g., 40% natural vegetative cover target)
  - iii) Natural Heritage System and Restoration Strategy for the Lake Simcoe Watershed (2018)
  - iv) Official Plan
  - v) Climate Change Adaptation Strategy
  - vi) Urban Forest Strategy
8. In the short term, the removal of an existing functioning ecosystem cannot be instantly replaced or replicated. The time lag between creating the offset and the time for the offset to mature back to a state where its full range of benefits can be delivered represents a loss of ecological function for the municipality. The new location also requires a planting plan that meets its own unique site conditions (soil type, moisture, light levels, existing vegetation etc) and cannot replicate the original location. Each project will be a unique new addition to the overall natural area it occupies. Therefore, the approach to ecological offsetting requires that tree removals be a last-resort strategy that will attempt to bridge the gap in ecological function over time.
9. To deter indiscriminate tree removals, the Ecological Offsetting Policy requires that private land development proposals demonstrate that the prerequisite steps of a Mitigation Hierarchy, which are AVOID, MINIMIZE and MITIGATE, have been explored through an approved natural heritage analysis prior to seeking ecological offsetting. The proposal must demonstrate to the satisfaction of the City of Barrie that compensation is the only viable option.
10. Compensation fees are calculated at 1:1 ratio to achieve a minimum No Net Loss target for terrestrial natural heritage systems, as per motion 23-G-082. This compensation ratio will apply to the areal extent of the natural heritage feature and its associated vegetation protection zone and to individual trees.
11. The Ecological Offsetting fee set rate of \$57,500 per hectare of woodland removal or \$500 per tree replacement value was established through the above motion 23-G-082.

12. The City shall receive all ecological offsetting fees through the development proposal review process prior to issuing any Tree Removal Permits as a required submission item and payment will be documented on the Tree Removal Permit (see Appendix "B"). The fees will be stored in the Ecological Offsetting Reserve as per motion 23-G-082 and applied to ecological offsetting projects.
13. The City of Barrie will implement and oversee the creation and restoration of woodland and forest habitat on municipally owned lands to ensure the preservation of natural heritage in perpetuity. Some examples of existing ecological restoration infill projects include enhancing existing underutilized mowed areas, such as unopened road right of way accesses to natural areas (Ardagh Buffs or Vine Crescent Natural Area) and steep slopes, such as McConkey Park (please see examples of 'before' and 'after' images provided in Appendix "C").
14. The ecological offsetting projects will be managed by the Terrestrial Ecologist position funded from the Ecological Offsetting Program fees, including the review and approval of Ecological Impact Statements, all planning, design, implementation and monitoring of natural heritage features identified through the program, as noted in motion 23-G-082.
15. The [Tree Protection Manual](#) currently provides the complete technical procedures for proponents and developers to reference and follow where tree removals are necessary. It is recommended that the Tree Protection Manual be updated to include the ecological offsetting review, approvals and compensation calculation process related to the Tree Removal Permit process, further to the proposed policy as per Appendix "A". This will ensure that all tree removal procedures can be found in one source document for ease of access by residents, developers and consulting professionals.

#### **ENVIRONMENTAL AND CLIMATE CHANGE IMPACT MATTERS**

16. The following environmental and/or climate change impact matters have been considered in the development of the recommendation:
  - a) The implementation of the Ecological Offsetting Policy will support several Climate Change Adaptation Strategy recommended actions, as noted in Staff Report OPR001-23, further to motion 23-G-082.
  - b) This Policy will provide the framework and mechanism to maintain the overall existing area of Barrie's urban forest during ongoing growth and development.
  - c) This Policy will ensure the long-term preservation and management of ecological offsetting investments by installing planting projects only on municipally owned lands not subject to development, such as Open Space and Environmentally zoned lands.
  - d) The ecological offsetting process contributes to the long-term resilience of Barrie's existing urban forest by adding new young tree species to support forest succession as trees are lost due to age, disease, structural damage (human, wind, ice, storm), flooding, drought, or insect damage.
  - e) The ecological offsetting projects will create opportunities to enhance public awareness and education regarding the role natural heritage plays in supporting quality of life.

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## **ALTERNATIVES**

17. The following alternative is available for consideration by General Committee:

**Alternative #1** General Committee could not approve the Ecological Offsetting Policy.

This alternative is not recommended as it would not fulfil the Council direction to implement an Ecological Offsetting Policy.

**Alternative #2** The ecological offsetting program could be expanded by hiring a full-time Urban Forester position to support the necessary staff resources in the Operations Department that are required to implement a Private Land Tree Planting Grant Program and support the Ecologist in the implementation of the Ecological Offsetting Program. The position will be partially funded from the Ecological Offsetting Reserve generated from Tree Removal Compensation Fees.

This position was removed by Council during their deliberations in April 2023, however this position is required if Council wishes to have the Private Land Tree Planting Grant Program as part of the Ecological Offsetting Program.

## **FINANCIAL**

18. Further to motion 23-G-082, Item 4 noted above, there are no financial implications for the Corporation resulting from the proposed recommendation, as the Ecological Offsetting Policy program and Restoration Ecologist staff position will be funded through the cash-in-lieu compensation fee collected on an individual development application basis.
19. The ecological offsetting fees were determined through Staff Report OPR001-23, Appendix "F", at \$57,500 per hectare of woodland removal and/or where applicable \$500 per tree for individual trees. This was based on the previous Lake Simcoe Region Conservation Area fees but excluding the LSRCA Environmental Service Fee, Land Securement Fee, and Environmental Protection Zone Replacement Fee. The new ecological offsetting fee includes:
- a) The Feature Replacement Cost at 1:1 ratio at \$50,000 per hectare includes planning, design, site preparation, plant material, installation, and monitoring costs; and
  - b) The Administration Fee of 15% (7,500 per hectare).
20. In years where the Ecological Offsetting program generates a surplus, all surplus funds would be allocated to the Ecological Offsetting reserve to offset years when fee revenues are insufficient to cover annual operating costs of the program.

## **LINKAGE TO 2022-2026 STRATEGIC PLAN**

21. The recommendation(s) included in this Staff Report support the following goals identified in the 2022-2026 Strategic Plan:

- Infrastructure Investments

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22. As noted under **Environmental and Climate Change Impact Matters** above, the Ecological Offsetting Policy offers a key tool to allow staff to implement climate action plans, as specially identified under **Infrastructure Investments** of the 2022-2026 Strategic Plan, specifically by developing standards and a permitting process to increase tree canopy on public property:
- a) in high surcharge and flooding watersheds;
  - b) where tree canopy is low and natural shade is needed; and
  - c) opportunities for naturalization exist.

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## APPENDIX "A"

### Ecological Offsetting Policy

#### VALUES STATEMENT

The City values the role that terrestrial natural heritage systems play in supporting quality of life, ecological integrity to stabilize natural functions through biodiversity, and economic prosperity. The City recognizes that natural heritage systems within the City of Barrie are at risk of being replaced by urban growth and development. Loss of natural heritage features resulting from development may be mitigated through ecological offsetting.

#### DEFINITION

Ecological offsetting is a strategy where an established fee may be collected by the municipality to compensate for the removal of trees or woodland area for development purposes and applied to the planting of an equivalent number of trees or woodland area in an alternate municipally owned location within City boundaries to achieve "no net loss" of the natural heritage feature.

#### PURPOSE

The purpose of the Ecological Offsetting Policy is to provide a consistent approach to maintaining a minimum of No Net Loss (NNL) of terrestrial natural heritage within the boundaries and lands of the Corporation of the City of Barrie during urban development for the benefit of current and future generations.

#### SCOPE

This policy applies to the City of Barrie's land use planning process for private and public lands, including City infrastructure projects, under the Province of Ontario's *Planning Act*, *Condominium Act*, and the *Environmental Assessment Act*.

Private Land Development proposals subject to *Planning Act*, *Municipal Act* or *Environmental Assessment Act* approvals for infrastructure projects that will result in the loss of natural heritage features, despite having followed the **Mitigation Hierarchy**, as outlined below under **Procedure**, will be required to compensate for the loss of these features through the payment of an Ecological Offsetting Fee. Planning instruments under the *Planning Act* or *Environmental Assessment Act* that may be used to ensure the collection of the approved Ecological Offsetting Fee include:

- Subdivision Agreements
- Condominium Agreements
- Development Agreements
- Site Plan Agreements
- Committee of Adjustment Severances
- Rezoning Approvals
- Private Tree By-law Municipal Infrastructure Projects

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## Exclusions

- a) Recognizing that there are limits, and certain natural heritage features may be irreplaceable, offsetting will not be considered for features that contain rare vegetation communities as defined by the Natural Heritage Reference Manual (MNR, 2010), and forested wetlands.
- b) Generally, offsetting will also not be considered for watercourses or for the minimum vegetation protection zone abutting the Lake Simcoe shoreline, as defined by the *Conservation Authorities Act*.

## Exceptions

- a) Woodlots with an area greater than .5 hectares in the Nottawasaga Valley Conservation Authority watershed where the current owner purchased the land prior to April 5, 2023, as per motion 23-G-082.
- b) Injury or destruction of a Heritage Tree is prohibited by the provisions of the Private Tree By-law.
- c) Ecological offsetting will not be required for woodlands that are plantations managed to produce fruits, nuts, Christmas trees, and nursery stock where it can be demonstrated to the satisfaction of the City of Barrie that it does not provide any of the following features or functions:
  - Any woodlands wholly or partially within 30 m of a key natural heritage / key hydrological or protected feature; and
  - Any woodland containing a provincially rare, treed vegetation community with an S1, S2 or S3 in its ranking by the Ministry of Natural Resources and Forestry Natural Heritage Information Centre (NHIC).
- d) Additional exclusions may be considered for communities that are dominated by invasive non-native tree species that threaten good forestry practices and environmental management. Such exceptions may be considered where native species cover less than 10% of the ground and are represented by less than 100 stems of any size per hectare. These species include but are not limited to:
  - *Acer platanoides* (Norway Maple)
  - *Acer ginnala* (Amur Maple)
  - *Acer negundo* (Box Elder or Manitoba Maple)
  - *Frangula alnus* (Alder Buckthorn)
  - *Morus alba* (Mulberry)
  - *Rhamnus* spp. (Buckthorn species)

## PROCEDURE

### 1.0 Prerequisites for Ecological Offsetting

#### 1.1 Mitigation Hierarchy

A hierarchical approach is a common theme across ecological offsetting programs, which follows a series of steps that support the principle of “no net loss”. This Mitigation Hierarchy calls for the avoidance of impacts first, then minimization, followed by mitigation, with compensation as a final option. The mitigation hierarchy is as follows:

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- I. **Avoid:** Prevent impacts from occurring by changing project location, scope, nature of timing of activities.
  - II. **Minimize:** Reduce the duration, intensity and/or extent of impacts that cannot be avoided.
  - III. **Mitigate:** Rehabilitate or restore features or functions that have been exposed to impacts that could not be avoided or minimized.
  - IV. **Compensate:** Create or restore new habitat to compensate for loss that could not be avoided, minimized, or mitigated.

## 1.2 Natural Heritage Analysis

Prior to the approval of any development application proposing compensation for the loss of natural heritage, the following conditions must first be satisfied through an approved natural heritage analysis, such as an **Environmental Impact Study (EIS)**, a **Natural Heritage Evaluation (NHE)** or a **Tree Preservation Plan (TPP)**:

- a) Demonstrate that the Mitigation Hierarchy steps of Avoiding, Minimizing and Mitigating have been followed and that compensation is the only viable option.
- b) Demonstrate conformity with applicable in-effect provincial, regional, and local policy, including *A Place to Grow: Growth Plan for the Greater Golden Horseshoe*, *Lake Simcoe Protection Plan*, the City of Barrie Official Plan and City of Barrie Private Tree By-law.
- c) Satisfy the “no negative impact test” for the loss of natural heritage feature to ensure consistency with Section 2.1 of the in-effect Provincial Policy Statement (PPS).
- d) Assess the impacts to natural heritage features such as individual trees and woodlands, and watercourses, as well as their associated vegetation protection zones where applicable.
- e) Refer to the City of Barrie Tree Protection Manual for compliance with technical procedures and standards.

## 1.3 Natural Heritage Types

### a) **Woodlands**

Ecological offsetting may be considered for the loss of woodlands where they have first been reviewed and demonstrated through the Mitigation Hierarchy that removal and compensation is the only viable option and cannot not meet any of the exception criteria, provided that the woodland is not a rare vegetation community as defined by the Natural Heritage Reference Manual (MNRF, 2010).

### b) **Individual Trees**

All existing vegetation within a development proposal must be reviewed according to the Mitigation Hierarchy prior to being recommended for removal. Existing single trees are eligible for ecological offsetting compensation where they have first been reviewed and demonstrated through the Mitigation Hierarchy that removal and compensation is the only viable option and do not meet any of the exception criteria.



## 2.0 Ecological Offsetting Fees

### 2.1 Replacement Ratio

Offsetting for feature loss will be accomplished solely through cash-in-lieu fees collected and administered by the City of Barrie for the loss of natural heritage features. The loss of woodland will be offset at a 1:1 replacement ratio for the areal extent of the natural heritage feature. This ratio considers the replacement values from the perspective of form and function across spatial and time scales to ensure that the value of loss is supported with an appropriate net gain. Fees include costs for staff resourcing to plan, design, implement and monitor ecological reestablishment.

All funds collected through the cash-in-lieu compensation option will be directed towards the creation, protection and/or restoration of natural heritage features on municipally owned lands to ensure that a net ecological gain is achieved.

### 2.2 Calculation

The Cash-in-lieu (CIL) amount will be determined by the Council-approved replacement rate cost multiplied by the required woodlot area or number of individual tree replacements, as determined by the appropriate study. This is represented in the formulas below:

a) **Woodlot Replacement Rate x Area = Cash-In-Lieu Total**

b) **Tree Replacement Rate x Quantity = Cash-In-Lieu Total**

The developer or proponent shall submit an **Ecological Offsetting Fee Table** which shows the fee calculation using the above formulas. The Table shall include totals for both woodlot replacement and individual tree replacements, where applicable, to achieve the final total Offsetting Fees Payment. An example of how to calculate the total amount of offsetting compensation is found below:

| ECOLOGICAL OFFSETTING FEE TABLE EXAMPLE CALCULATION                                 |                   |                          |                  |
|---|-------------------|--------------------------|------------------|
| Item  | Replacement Rate* | Total Area or Quantity** | Total (\$)       |
| Woodlot Tree Removal Compensation Fee   | \$57,500 / ha     | 2.7 ha                   | \$155,250        |
| Individual Tree Compensation Fee  | \$500 / tree      | 3                        | \$1,500.00       |
| <b>Total Offsetting Fee Payment</b>   |                   |                          | <b>\$156,750</b> |
| * Rate from the Fees By-law at the time of policy approval, to be amended annually. |                   |                          |                  |
| ** Example of development removal of 2.7 ha of woodland plus 3 individual trees     |                   |                          |                  |

## 3.0 Role of the City

The City of Barrie will be responsible for collecting Ecological Offsetting Fees and implementing all Ecological Offsetting Projects. Ecological offsetting compensation projects should be both feasible and completed within a reasonable timeframe.

The City will determine an appropriate opportunity and location for ecological offsetting compensation projects. In general, compensation projects should:

- a) Be located on sites that are currently owned by the City of Barrie.
- b) Expand or enhance the natural heritage system as defined by the City of Barrie Official Plan, the Nottawasaga Valley Conservation Authority or as identified in the Lake Simcoe Region Conservation Authority’s Natural Heritage System and Restoration Strategy for the Lake Simcoe Watershed (2018).
- c) Strive to recreate similar features close to the location where the feature was lost and/or sub-watershed and/or natural heritage feature. However, in some situations, it may be more appropriate for ecological offsetting to include alternative compensation projects that result in an equivalent ecological gain.
- d) Include a monitoring component to ensure the successful installation of compensation projects. The components of an Ecological Offsetting Project are further described below.

## 4.0 Components of an Ecological Offsetting Project

### 4.1 Ecological Offsetting Project Elements

An Ecological Offsetting Project (EOP) should include the following information:

- Description, location, and area of feature being lost.
- Description, location, and area for where feature replacement is proposed.
- Description, location, and area for any proposed feature enhancements (e.g., invasive species management, habitat creation, etc.).
- Cash-in-lieu calculation
- Detailed design drawings for feature replacement and any enhancements.
- Timing for implementation and project completion.
- Monitoring plan and schedule to demonstrate that features are functioning as anticipated.

### 4.2 Project Prioritization Schedule

Ecological funding will apply to the restoration or implementation of natural heritage within the City of Barrie on a prioritization basis oriented to achieve no net loss of the project first, as shown in the Project Priority Schedule below:

| <b>PROJECT PRIORITIZATION SCHEDULE</b> |  |                          |
|--|--|--------------------------|
| <b>Priority Level</b>                  | <b>Description</b>   | <b>Typical Zoning</b>    |
| <b>Priority One</b>                    | Projects involving planting or seeding of native vegetation species in locations abutting or in proximity to existing natural heritage features, to intensify the existing ecological function of the feature and extend its reach towards other existing natural features | Environmental Protection |

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|                       |   |            |
|-----------------------|---|------------|
| <b>Priority Two</b>   | Projects planted in greenspace areas, to enhance the existing environmental function of the greenspace by adding native plant species.  | Open Space |
| <b>Priority Three</b> | Projects planted in urban areas with minimal landscaping or lack vegetation entirely, to enhance the urban forest canopy and/or add non-turfgrass plant species. Projects that are intended for ornamental horticultural displays will not be eligible. | Any        |

**END of policy.**

Policy References and Resources

- i. [A Place To Grow: Growth Plan for the Greater Golden Horseshoe](#)
- ii. City of Barrie [Climate Change Adaptation Strategy](#)
- iii. City of Barrie [Official Plan](#) 2051
- iv. City of Barrie [Private Tree By-law](#)
- v. City of Barrie [Public Tree By-law](#)
- vi. [Key Issues in Biodiversity Offset Law and Policy, June 2015](#) by Ontario Nature
- vii. [Lake Simcoe Region Conservation Authority](#)
- viii. [Nottawasaga Valley Conservation Authority](#)
- ix. [Ontario Regulation 179/06 via the Conservation Authorities Act](#)
- x. [Section 28.0.1 of the Conservation Authorities Act](#)
- xi. [Tree Protection Manual](#)
- xii. Urban Forest Strategy
- xiii. [Valuing Natural Capital in the Lake Simcoe Watershed \(2017\)](#) report from Green Analytics

APPENDIX "B"

Draft Revised Tree Removal Permit Reflecting Ecological Offsetting Fee Requirement



DEVELOPMENT SERVICES DEPARTMENT

**TREE REMOVAL PERMIT**

*Pursuant to City of Barrie By-law 2014-115*

Permit Number: **TRP-000-002-2021**  
Date of Issuance: **November 5, 2020**

| PERMIT HOLDER           |  |  |
|-------------------------|--|--|
| Owner:                  | Name of Company/Name of Proponent  |  |
| Owner Address:          | Street<br>City, Postal Code<br>Telephone, Email                          |  |
| Site Municipal Address: | Address  |  |
| Site Legal Description: | Legal Description  |  |
| Consultant Information: | Company Name<br>Address<br>City, Postal Code<br>Telephone, Email address |  |

| PLANS  |            |                   |
|--|------------|-------------------|
| Drawing Name                                       | Sheet Ref. | Revision and Date |
| Vegetation Inventory/Removal and Preservation Plan | TP-1       | September 4, 2020 |
| Tree Preservation Details                          | TP-2       | September 4, 2020 |
| Ecological Offsetting Fee Schedule                 | TP-2       | September 4, 2020 |

| SPECIAL CONDITIONS  |      |                |
|---|------|----------------|
| Ecological Offsetting Fees Paid   | Date | Receipt Number |
| The Corporation of the City of Barrie's Development Services Department authorizes the owner to remove the vegetation identified in the approved plan(s) as noted and requires that any remaining vegetation be preserved and protected subject to conditions as set out in Schedule 'A' as listed on the reverse side of this permit in accordance with By-law 2014-115. |      |                |

| PERMIT ISSUANCE                     |   |
|-------------------------------------|---|
| Signature of Person Issuing Permit: | _____   |
| Name of Signatory:                  | Michelle Banfield, Director of Development Services |
| Tree Removal Permit Expires on:     | November 5th, 2021                                  |



APPENDIX "C"

Three Examples of Ecological Restoration Infill Projects

1. Ward 4: Vine Crescent Natural Area, Shirley Street



BEFORE (2010):



AFTER (2023):





2. Ward 6: Ardagh Bluffs Entrance, Eaglestone Lane



BEFORE (2004):



AFTER (2009 and 2023):



### 3. Ward 8: McConkey Park Ravine



BEFORE (2005):



AFTER (2023):

