DILLON CONSULTING

Municipality of Kincardine

Asset Management Plan Addendum

2025

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Acronyms, Abbreviations, Definitions

AG	Agriculture
AMP	Asset Management Plan
ANSI	Areas of Natural and Scientific Interest
CGL	Constructed Green Lands
CSA	Canadian Standards Association
CV	Constructed ELC Polygons
Dillon	Dillon Consulting Limited
ELC	Ecological Land Classification
ft^2	Square feet
GIS	Geographic Information System
Kincardine	Municipality of Kincardine
LIO	Land Information Ontario
LOS	Levels of Service
MNAI	Municipal Natural Assets Initiative
MNR	Ministry of Natural Resources
The Municipality	The Municipality of Kincardine
O. Reg.	Ontario Regulation
OHN	Ontario Hydro Network
OP	Official Plan
PSW	Provincially Significant Wetland

1.0 Introduction

This 2025 Asset Management Plan (AMP) Addendum is to update and supplement the Municipality of Kincardine's 2022 AMP. It includes two key components: a new Natural Assets Chapter (Phase 1) and updated Replacement Costs for all asset categories (Phase 2). These two deliverables have been combined into a single, consolidated document to streamline communication and make it easier for readers and stakeholders to reference the updates completed in 2025.

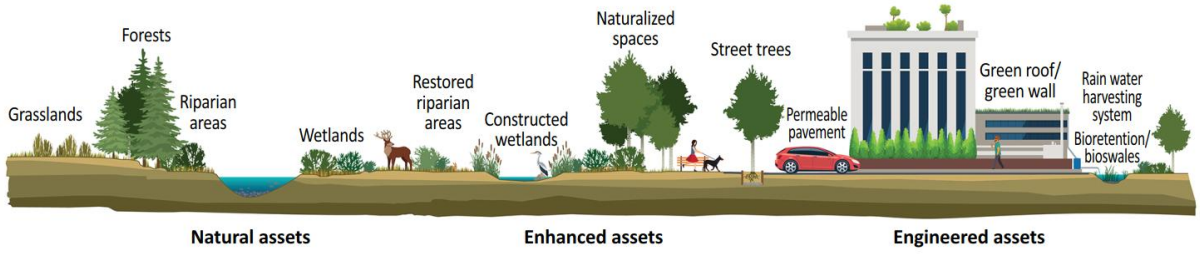
Phase 1 introduces a dedicated Natural Assets Chapter (Chapter 13), which identifies and classifies the Municipality's natural assets such as rivers, wetlands, and watercourses. It also estimates their replacement costs, current condition, LOS and Risk, and highlights the critical role these assets play in supporting municipal services. This chapter establishes a foundational understanding of natural assets and aligns with evolving asset management practices and regulatory expectations.

Phase 2 focuses solely on updating the replacement costs of all asset categories to reflect 2025 dollar values. This update was necessary because the replacement costs in the 2022 AMP were developed during the COVID-19 period, when infrastructure construction material costs were significantly impacted and inflated. The purpose of this addendum is to normalize those values and reflect more current, stabilized pricing conditions. This is not an update to the Municipality's asset inventory; changes in inventory will be addressed in the full AMP update planned for 2027. The cost update was completed using a market scan of unit rates, recent tender pricing from Kincardine and surrounding municipalities, and inflationary adjustments where localized data was not available. Data received from the Citywide asset management software supported this work and highlighted notable inventory changes—however, inventory changes are not within the scope of this addendum. Importantly, this approach maintains compliance with Ontario Regulation (O. Reg.) 588/17 and does not impact the Municipality's regulatory obligations.

2.0 Natural Assets

This chapter outlines the approach to managing the natural assets of the Municipality of Kincardine (Kincardine). Natural assets are distinct from traditional "built" infrastructure like roads, pipes, and buildings, as they are naturally occurring systems and features that provide essential services to the community. Natural assets are defined as natural and naturalized spaces that deliver services, similar to engineered and enhanced assets as shown in **Figure 2-1**. Examples of natural assets include forests, grasslands, riparian areas, and wetlands. Enhanced assets encompass features such as constructed wetlands, naturalized spaces, and street trees, while engineered assets include green roofs, rain gardens, and permeable pavement.

Figure 2-1: Relationship between Natural Assets, Enhanced Assets and Engineered Assets (CSA W218:23)



Recognizing and valuing these natural systems as critical infrastructure is vital for sustainable asset management. The addition of green infrastructure aligns with the requirements of O. Reg. 588/17, promoting a comprehensive and holistic approach to managing all municipal assets for the long-term well-being of residents and the environment. The definition of green infrastructure from O. Reg. 588/17 is defined as below:

> "Green infrastructure asset, means an infrastructure asset consisting of **natural** or **human-made elements** that provide ecological and hydrological functions and processes and includes natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces and green roofs."

The development of this chapter was guided by the following resources:

- Canadian Council of Ministers of the Environment: Natural Infrastructure Framework: Key Concepts, Definitions, and Terms (2021);
- National Standard of Canada: CSA W218:23 (Specifications for natural asset inventories);
- International Standard for Asset Management: ISO 55000;
- Natural Assets Initiative: A Guidebook for Local Governments (2024); and
- Natural Assets Initiative: A Guidebook for Local Governments: Developing Levels of Service (LOS) for Natural Assets (2022).

2.1 State of Local Infrastructure

The Municipality owns and maintains a variety of natural assets across its properties. A natural asset inventory was developed using methodologies of the *National Standard of Canada – Specification for Natural Asset Inventories; Canadian Standards Association – CSA W218:23* (CSA, 2023). A complete outline of the inventory methods and results is provided in **Appendix A**. A summary of the inventory results is provided in the following subsection.

2.1.1 Inventory

The inventory was created in a GIS workspace using property parcel files provided to Dillon by the Municipality in April 2025. A total of 271 Municipality property parcels were provided, and the inventory mapping was created for the lands within those parcels.

The inventory was developed by creating discrete mapping units (polygons) of natural assets that were delineated and classified through desktop analysis, boundary delineation, and asset classification conducted by Dillon ecologists and natural asset specialists.

A total of 504 natural asset polygons were classified and delineated in the inventory, comprising 32 different natural asset types across 362.68 hectares. Note that an additional 62 polygons comprising 102.22 hectares were delineated and classified as "Constructed" asset types. These are not natural assets and are therefore not

summarized as such in the inventory but were subject to the inventory merely to complete the mapping across the Municipality parcels.

To better organize the inventory for the purposes of asset planning, the 32 natural asset types were consolidated into 11 Natural Asset Categories, as outlined in **Table 2-1**, below.

Table 2-1: Summary of Natural Assets

Natural Asset Category	Total Count	Total Area (ha)
Woodlands, Forests, Plantations	135	141.33
Constructed Green Lands	130	94.80
Agriculture and Fencerows	30	39.12
Swamps	54	28.13
Lakes and Shorelines	17	22.26
Meadows and Thickets	50	20.88
Marshes	12	5.97
Watercourses and Rivers	57	5.90
Sand Barrens and Dunes	12	1.85
Constructed Storm Water Management Ponds	3	1.55
Natural Ponds	4	0.89
Total	**504**	**362.68**

2.1.2 Replacement Cost

To estimate the replacement costs of natural assets for the Municipality of Kincardine, we relied on the costing framework developed for the Region of Peel (Beacon Environmental, December 2020). This well-researched framework provides lifecycle cost estimates for a range of hypothetical natural asset sub-types. The framework shared sub-asset category and project type (e.g. creation, acquisition, softscape, hardscape) and shared the cost according to project complexity. Low estimates for simple projects, moderate cost estimates for average project and high-cost estimates involve complex projects.

We have adopted a balanced methodology using the average of moderate-level acquisition and creation costs per hectare for each natural asset category. This reflects the realistic assumption that future replacement efforts may involve both restoration and land acquisition, depending on local opportunities and development constraints. For example, the moderate cost estimate for a deciduous forest is $475,959 (creation) and $223,200 (acquisition); thus, we used the average of the two ($349,580) to develop a fair and balanced unit rate.

To bring these December 2020 values up to 2025 dollars, we applied an annual inflation rate of 2.5% over five years, compounding annually. This adjustment ensures that our AMP reflects current market conditions and allows for informed, forward-looking financial planning.

The resulting unit rates, applied to the mapped areas of each natural asset type in hectares, have been used to calculate total replacement costs. The full replacement cost summary is provided in **Table 2-2** below.

Table 2-2: Total Estimated Replacement Cost of Natural Assets

Asset Category	Total Area (ha)[1]	Unit Rate ($/ha)	Total Estimated Cost
Woodlands, Forests, Plantations	141.33	403,000	56,818,000
Constructed Green Lands	94.80	1,124,000	106,542,000
Agriculture and Fencerows	39.12	300,000	11,704,000
Swamps (Wetlands)	28.13	428,000	12,035,000
Lakes and Shorelines	22.26	579,000	12,887,000
Meadows and Thickets	20.88	300,000	6,247,000
Marshes (Wetlands)	5.97	578,000	3,450,000
Watercourses and Rivers	5.90	1,158,000	6,832,000
Sand Barrens and Dunes	1.85	300,000	554,000
Constructed Storm Water Management Ponds	1.55	579,000	898,000
Natural Ponds	0.89	579,000	516,000
Total	**362.68**		**$218,483,000**

[1] Table values sorted by highest to lowest in total area and rounded up to nearest $1,000.

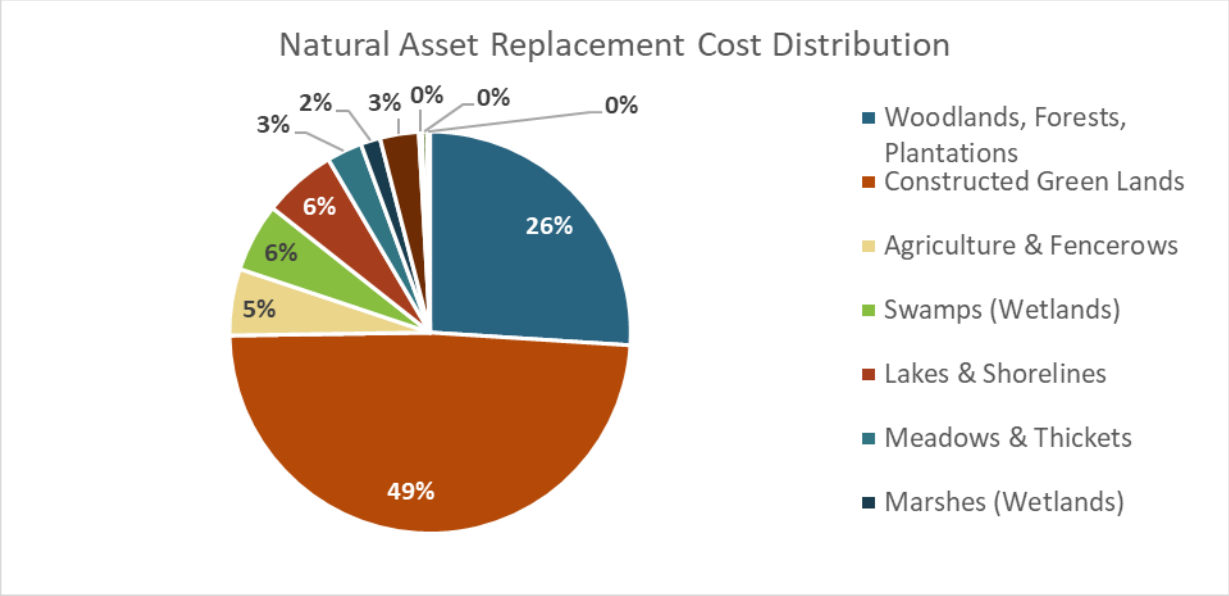
Table 2-2 presents the total area, unit rate, and total estimated replacement cost for each natural asset category within municipality's boundary. The values reflect 2025-dollar estimates, calculated as described above.

Constructed Green Lands form the largest portion of the total value, contributing approximately 49% of the total ($106.5 million) whereas Woodlands, Forests and Plantations follow, comprising about 26% ($56.8 million) second largest in the group.

The total estimated replacement cost for Municipality's natural assets amounts to $218.5 million.

Figure 2-2 shows the distribution of total replacement cost in asset categories.

Figure 2-2: Distribution of Total Replacement Cost per Asset Category



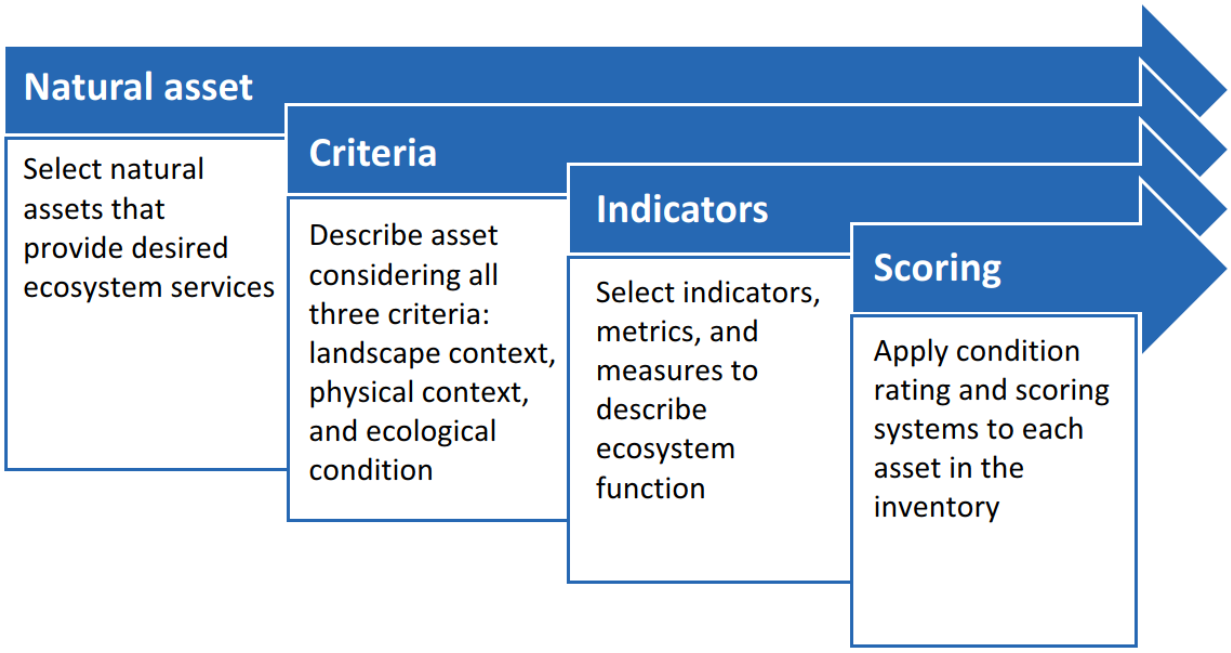
2.1.3 Condition

Condition information was not available for this report.

Documenting and identifying the condition of natural assets is a key aspect of understanding their overall state. Unlike built assets, natural assets do not have expected useful life values that can be used to forecast replacement years. Therefore, alternative approaches must be generated and developed to ensure consistent condition assessments are completed in future iterations of this report. A process and methodology should be outlined for conducting these assessments through either

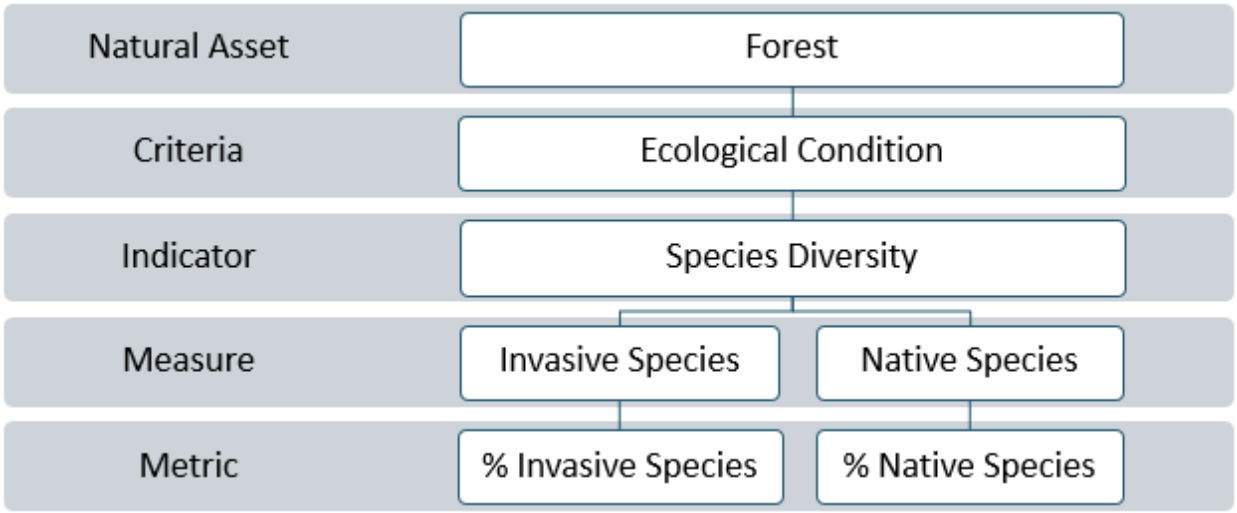
desktop analysis or field identification. As outlined in the CSA, a recommended condition assessment process includes selecting the natural asset, describing asset criteria, selecting indicators to measure ecosystem function, and applying condition rating score. See **Figure 2-3**.

Figure 2-3: Recommended Condition Assessment Process



Based on this initial process, a methodology that includes indicators, measures, and metrics can be developed for each natural asset type. As the municipality further develops its asset inventory, a comprehensive condition assessment framework can then be generated.

Figure 2-4: Example of Condition Assessment Scoring

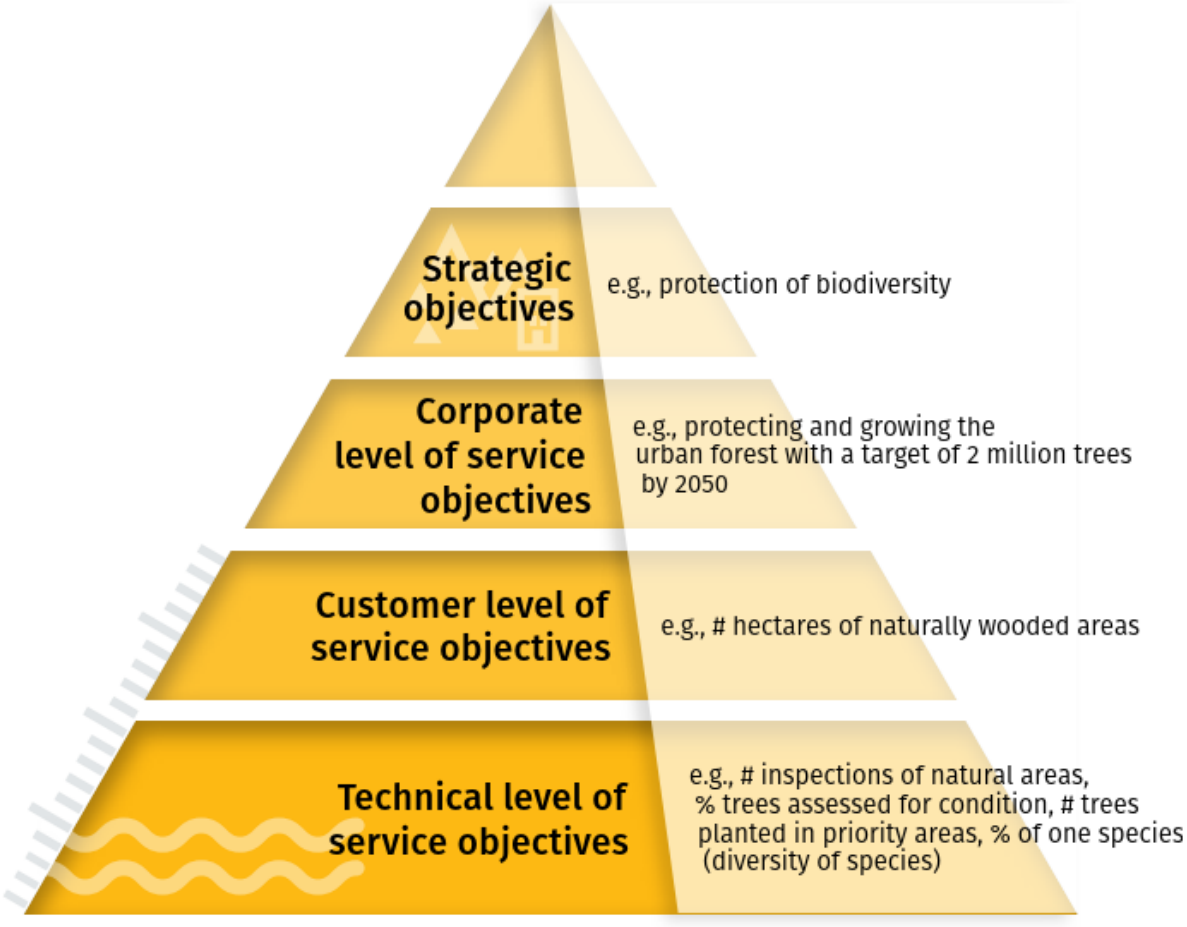


It is recommended to use a five-point rating scale (Very Good, Good, Fair, Poor and Very Poor) for a consistent approach for other assets included in the 2022 AMP.

2.2 Levels of Service

LOS are a combination of parameters that reflect the social, political, environmental, and economic outcomes an organization delivers. The LOS for natural assets are intended to provide to the community, covering everything from stormwater management and water filtration to recreational opportunities and biodiversity support. This involves outlining both the community's desired qualitative outcomes and the measurable technical indicators that gauge the natural assets' performance, ultimately guiding proactive management and investment strategies. **Figure 2-5** is the recommended LOS framework from the Municipal Natural Assets Initiative (MNAI).

Figure 2-5: LOS Hierarchy (MNAI)



The reasons for establishing LOS for natural assets include:

- **Recognizing Natural Assets**: Acknowledging their role in providing essential services.
- **Accountable Management**: Establishing clear responsibilities for effective management.
- **Lifecycle Budgeting**: Incorporating monitoring, maintenance, and restoration into financial plans.
- **Adaptive Management**: Using progress to inform updates to strategic plans and land use policies.

2.2.1 Contribution of Natural Assets to Service Delivery

Natural assets are inherently "multi-taskers," providing a wide array of services and benefits to both human communities and the broader ecosystem. Unlike grey infrastructure, which typically serves a singular purpose, natural assets often contribute simultaneously to multiple service objectives. Recognizing this holistic value is critical to avoid under-estimating and under-valuing their contribution, which could lead to suboptimal land-use decisions.

Table 2-3: Potential Natural Service Areas

Service Areas	Services Related to Natural Assets
Stormwater	Natural assets offer cost-effective solutions for water storage, flood control, groundwater recharge, and erosion prevention, improving water quality and ecosystem health by reducing runoff.
Drinking Water	Protecting natural source water is crucial for cost-effective and safe drinking water provision. Natural assets like forests support aquifer recharge, and demand management helps conserve supply, especially with increasing drought risks.
Wastewater	While generally not for wastewater treatment (except for supplementary constructed wetlands), natural assets play a role in water purification. Constructed wetlands offer an efficient and environmentally friendly method for treating various wastewaters.
Transportation	While not direct transportation, natural assets create connected green networks that enhance experiences for walking, biking, and other forms of active transportation. Their degradation can also impede transportation.
Recreation	Natural assets like parks and green infrastructure offer vital recreation opportunities, contributing to healthy and socially connected communities. Recognizing these assets in planning is important.
Physical Health	Natural assets provide services that promote both physical and mental well-being in communities.

Service Areas	Services Related to Natural Assets
Biodiversity Support	Biodiversity is essential for healthy, functioning ecosystems, and changes in natural assets directly impact this diversity, which in turn affects ecosystem services.
Climate Resilience	Natural assets are vital for carbon storage, regulating the water cycle, and maintaining biodiversity, thus playing a key role in the climate system. They also buffer against climate change impacts like flooding and urban heat islands. Understanding their complex responses to climate change requires long-term monitoring and adaptive management.
Culture and Heritage	Nature plays a significant role in community culture and heritage, with cultural landscapes holding special meaning and supporting overall well-being.
Economic Benefits	Natural assets underpin local economies through provisioning services for agriculture, forestry, fishing, and resource extraction. They also support nature-based tourism, recreation, and can increase property values.

To understand which natural assets within the municipal boundary may impact service delivery, a comprehensive mapping exercise was completed. This exercise is shown in **Table 2-4** below and outlines the interplay between these natural assets and the services they provide, thereby establishing a foundational understanding of how our natural environment underpins community well-being and service delivery.

Table 2-4: Mapping of Natural Assets to Services

Natural Service Areas	Stormwater	Drinking Water	Wastewater	Transportation	Recreation	Physical Health	Biodiversity Support	Climate Resilience	Culture and Heritage	Economic Benefits
Woodlands, Forests, Plantations	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Meadows and Thickets	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Swamps	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Marshes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Watercourses and Rivers	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lakes and Shorelines	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Natural Ponds	Yes	No	No	No	No	No	Yes	Yes	No	No
Sand Barrens and Dunes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Agriculture and Fencerows	Yes	No	No	No	No	No	No	Yes	Yes	Yes
Constructed Green Lands	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Constructed Storm Water Management Ponds	Yes	No	No	No	No	No	No	Yes	No	No

In 2025, the Municipality generated a Beach Stewardship and Maintenance Plan that provides a detailed framework for managing its 49 kilometres of beachfront. This plan excludes the operations of the Kincardine Marina and the sections of waterfront maintained at the Stoney Island and Brucedale Conservation Areas, which are managed by the Saugeen Valley Conservation Authority. The waterfront was divided into nine distinct zones to facilitate management and track operational activity. These zones are:

- Zone 1: Saratoga Road to St. Albert Street;
- Zone 2: St. Albert Street to the South Pier;
- Zone 3: The North Pier to the Rock Garden;
- Zone 4: The Rock Garden to Golf Links Road;
- Zone 5: Golf Links Road to Stoney Island Crescent;
- Zone 6: Stoney Island Conservation Area;
- Zone 7: Kinhuron to Bruce Road 15;
- Zone 8: Bruce Road 15 to Cayley Street; and
- Zone 9: Baie du Dore Road to the Bruce Saugeen Townline.

This plan and information from a workshop were used to generate the current levels of service for natural assets. Table 2-5 and Table 2-6 outline the Municipality's current levels of service for natural assets and the asset areas per Municipality resident, respectively. **Table 2-7** outlines the current technical levels of service.

Table 2-5: Community Level of Service – Natural Assets

LOS Parameter	LOS Objective	LOS Measure	Municipality of Kincardine Community LOS
Scope	Understanding of existing location of natural assets within the Municipality.	Maps of natural asset locations.	The locations of natural assets throughout the Municipality are shown in **Appendix A**.
Quality	Provide accessible and well-defined beach access points.	Number of beach access points clearly marked and maintained annually.	There are 109 beach access points.[2]
Safety	Ensure beaches are safe for public by proper management.	Number of water quality testing and lifesaving stations along the beachfront.	Water Quality Testing is completed in Zone 1, 2 and 3. There are 18 lifesaving stations in Zone 2, 3 and 8 which are inspected weekly.[3]
Safety	Ensure public safety from natural hazards along trails and identified natural areas.	Percent of identified high-risk hazards removed annually.	Future measure.

[2] From the 2025 Beach Stewardship and Maintenance Plan.
[3] From the 2025 Beach Stewardship and Maintenance Plan.

Table 2-6: Technical Level of Service – Natural Assets

LOS Parameter	LOS Objective	LOS Measure	Municipality of Kincardine Technical LOS
Scope	Availability of natural assets for the existing population.	Area of natural assets per Population.	identifies the area of natural asset per population of the Municipality.
Quality	Proactively manage tree health and hazards to minimize risk across natural assets.	Number of tree hazard assessments completed annually.	Future measure.
Quality	Implement a comprehensive invasive species management program to minimize ecological impacts.	Percent of natural areas surveyed for invasive species annually.	Future measure.
Quality	Implement targeted measures for coastal dune integrity and stability (i.e., snow fencing).	Amount of snow fencing or other sand mitigation structures installed/maintained annually.	In Zone 2, there is 1,500 feet of snow fencing installed annually.[4]

[4] From the 2025 Beach Stewardship and Maintenance Plan.

Table 2-7: Technical Level of Service – Natural Assets per Resident

Asset Category	Area (ha)	Asset Area (m^2) per Resident[5]
Woodlands, Forests, Plantations	141.33	115.20
Constructed Green Lands	94.80	77.27
Agriculture and Fencerows	39.12	31.89
Swamps (Wetlands)	28.13	22.93
Lakes and Shorelines	22.26	18.14
Meadows and Thickets	20.88	17.02
Marshes (Wetlands)	5.97	4.87
Watercourses and Rivers	5.90	4.81
Sand Barrens and Dunes	1.85	1.51
Constructed Storm Water Management Ponds	1.55	1.26
Natural Ponds	0.89	0.73
Total	**362.68**	**295.63**

2.3 Risk Assessment

This section delves into the critical aspects of risk and criticality assessment for natural assets, which are paramount for prioritizing investments and ensuring sustainable service delivery.

Risk is the likelihood and magnitude of a negative scenario (hazard) occurring that limit the ability of the asset to deliver the service. Risk is the consideration of asset failure (or under performance) and the consequence of the failure.

RISK = LIKELIHOOD x CONSEQUENCE

Consequence considers the severity of the impact, vulnerability of the asset and exposure to the negative scenario.

[5] Uses MOK population of 12,268 residents, as per 2021 census.

Applying the methodology of a score of 1 to 5 for the likelihood and the consequence, the maximum risk rating is 25 (high). Based on the available information for natural assets, a threat-based approach was taken to estimate the risk of the assets.

2.3.1 Threat-Based Approach

This approach assesses the range of threats to which natural assets are exposed. It recognizes that natural assets are also vulnerable to cumulative effects and can reach tipping points under sustained pressure.

2.3.1.1 Step 1: Identify Threats

The assessment begins by identifying threats that could negatively impact natural assets and, consequently, their ability to deliver services. There were two types of threats identified: cumulative which are impacts that build up over time due to repeated exposures, and event-driven threat which are impact that are more immediate and tied to a specific event. The list of threats identified for this version of the AMP are included in **Table 2-8**.

Table 2-8: Identified Threats

Cumulative Threats	Event-Driven Threats
• Invasive Species • Pest and Disease • Encroachments/Disturbances • Overuse/Inappropriate Use • Contamination • Drought	• Construction Impacts • Flooding • Erosion and Sedimentation • Extreme Wind • Ice Storms • Extreme Heat • Fire

2.3.1.2 Step 2: Identify Likelihood of Failure

Based on the identified threats, an iteration matrix was developed to generate a likelihood rating is allocated to each threat, also typically on a 1 to 5 scale, from Improbable to Certain. This rating corresponds to the annual probability of occurrence or a return period.

Table 2-9: Likelihood of Failure

Rating	Qualitative	Description
1	Improbable	1 every 50 to 100 years
2	Unlikely	1 every 10 to 50 years
3	Possible	1 every 5 to 10 years
4	Likely	1 every 2 to 5 years
5	Certain	More than 1 in every 2 years

2.3.1.3 Step 3: Review Consequence of Failure

A relative consequence of failure rating was assigned to each asset category, which was a low, moderate or high. This rating represented the consequence of losing the service of those natural assets.

2.3.1.4 Step 4: Calculate Risk Score

The overall risk score for each threat is derived by multiplying its assigned impact rating by its likelihood rating. A risk score between 1 to 9 was rated a Low risk, a score of 10 to 15 was a Moderate risk and a score of 16 to 25 was a High risk.

2.3.2 Results

Based on the approach outlined above, **Table 2-10** outlines the risk scores and ratings for each of the different asset categories. The inputs for the steps can be found in **Appendix B**.

Table 2-10: Risk Ratings

Asset Category	Likelihood of Failure	Consequence of Failure	Risk Score	Risk Rating
Watercourses and Rivers	4	5	20	High
Lakes and Shorelines	4	5	20	High
Sand Barrens and Dunes	4	5	20	High
Constructed Green Lands	5	5	25	High
Constructed Storm Water Management Ponds	4	5	20	High

Asset Category	Likelihood of Failure	Consequence of Failure	Risk Score	Risk Rating
Woodlands, Forests, Plantations	5	3	15	Moderate
Swamps	5	3	15	Moderate
Marshes	4	3	12	Moderate
Natural Ponds	4	3	12	Moderate
Agriculture and Fencerows	5	3	15	Moderate
Meadows and Thickets	4	1	4	Low

2.4 Lifecycle Activities

Based on the *Building Together – Guide for Municipal Asset Management Plans* (Municipality of Infrastructure), the lifecycle activities for built assets are categorized in the following categories: non-infrastructure solutions, maintenance activities, renewal/rehabilitation activities, replacement, disposal and expansion activities. For natural assets, it is recommended to adjust these as the main purpose of lifecycle activities is to prolong the useful life of these assets as much as possible.

- **Construct and Secure** – typically referring to new assets or acquiring asset that already exist.
- **Monitor and Manage** – include maintenance activities to help assets be resilient ad monitoring if the asset are functioning as intended. Focusing on preserving the assets.
- **Rehabilitate and Restore** – significant repair to extend the life and enhance the performance of existing assets.

2.5 Asset Management Strategy – Natural Assets

The asset management strategy for natural assets is to prolong the useful life of these assets as much as possible.

As the municipality advances asset management practices for its natural assets, the first step is understanding what assets exist and where they exist in the community. The next steps are to:

- Complete a condition assessment methodology for the natural asset types;
- Update and refine the replacement costs; and
- Monitor and track the level of service parameters.

2.6 Proposed Levels of Service – Natural Assets

The current level of service established in 2024 are to be maintained as the proposed levels of service through the year 2031, which is the end of the ten-year planning horizon for the 2022 AMP. It is recommended that the Municipality continue to monitor levels of service being provided by natural assets on an annual basis (and a seasonal basis where appropriate) and adjust proposed levels of service accordingly in the future.

3.0 Current Replacement Cost 2025

This section is to provide an update to the replacement costs presented in the Municipality of Kincardine's 2022 AMP. The purpose of this update is to reflect 2025 dollar values, to align the current market condition for the future capital planning.

This work includes a market scan of recent available tender pricing within comparable surrounding municipalities over the past two years. Where recent local or regional pricing data was available, those figures were incorporated to update the unit costs. In cases where pricing data was not accessible, replacement costs were escalated using an inflationary adjustment factor consistent with current economic indicators.

Additionally, the update was supported using inventory and cost data obtained from the Citywide software platform. While the software flagged several significant changes in the asset inventory since the 2022 AMP, it is important to clarify that this addendum is focused exclusively on updating unit replacement costs. This update was required because the original 2022 costs were developed during the COVID-19 period, when infrastructure construction material prices were abnormally high. The purpose of this addendum is to normalize those values for 2025 planning. Changes to the asset inventory itself are beyond the scope of this phase and will be addressed in the full AMP update scheduled for 2027. The combination of local market data, regional benchmarks, and inflation indexing ensures a reliable and transparent approach for updating the Municipality's asset replacement values, while maintaining full compliance with O. Reg. 588/17.

The summary of replacement costs for 2022 verses 2025 for each asset category are presented in **Table 3-1**.

Table 3-1: Summary of Replacement Costs – 2022 Compared to 2025 in 2025 Dollars

Asset Category	Replacement Value ($2022)	Current Replacement Value ($2025)
Road Assets (Linear and Non-Linear)	$349,033,000	$421,334,098
Water Assets (Linear and Non-Linear)	$137,283,000	$199,008,130
Wastewater Assets (Linear and Non-Linear)	$167,343,000	$294,116,230
Stormwater Assets (Linear and Non-Linear)	$109,808,000	$161,857,540
Bridges and Culverts	$70,063,000	$76,558,750
Buildings	$83,392,500	$91,126,000
Equipment	$6,271,000	$6,632,803
Fleet	$15,624,000	$17,717,937
Parks and Yard Improvements	$36,729,700	$45,864,090
Total	**$975,547,200**	**$1,314,215,578**

The total replacement cost for the Municipality of Kincardine's infrastructure assets is $1.314 billion (in 2025 dollars). The distribution of this replacement cost is shown in **Figure 3-1**.

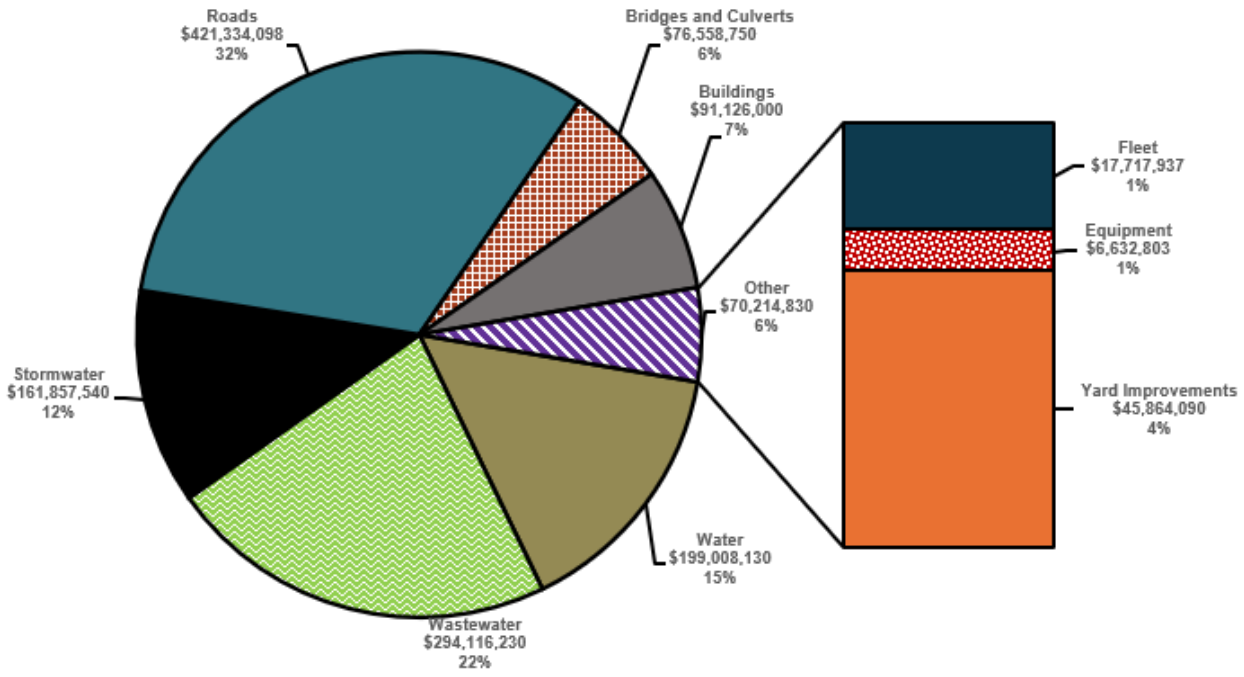


Figure 3-1: Distribution of Replacement Cost (2025 Dollars)

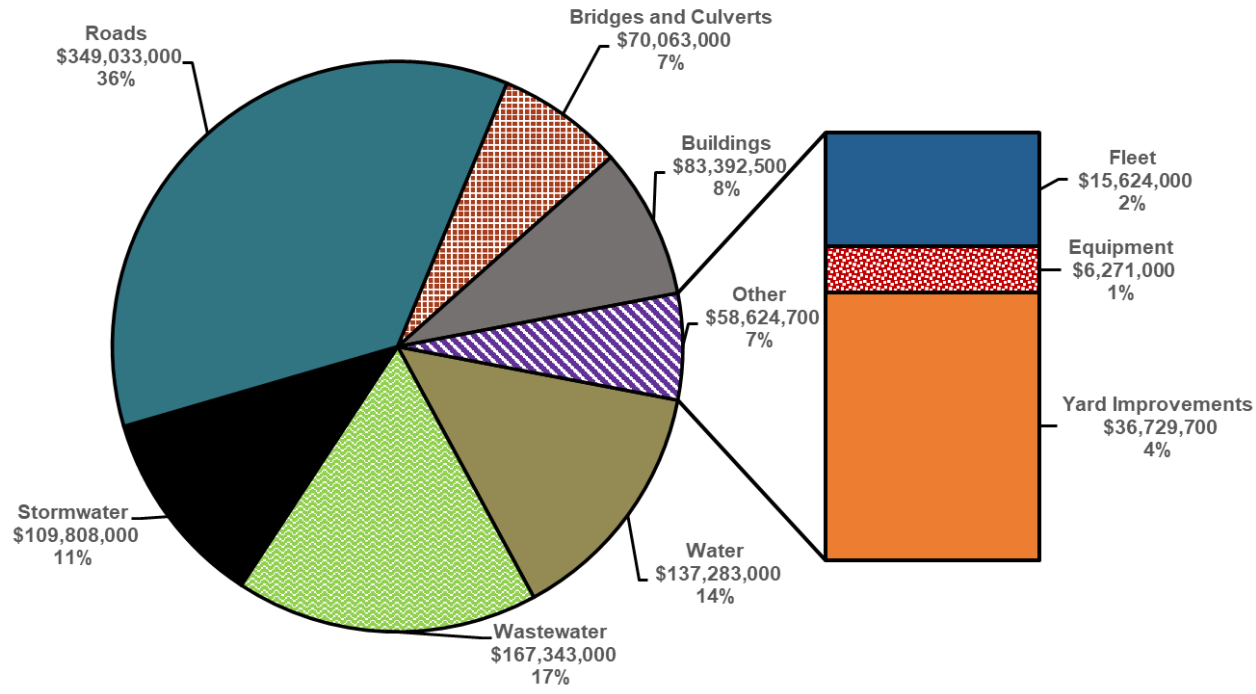


Figure 3-2: Distribution of Replacement Cost (2022 Dollars)

3.1 Approach to Replacement Cost Updates

The asset inventory for this analysis was obtained from the Citywide data extract provided by the Municipality. To ensure consistency with previous work, the data extract was cross-referenced against the asset IDs used in 2022 AMP inventory across all asset categories. During this reconciliation process, certain asset IDs from the 2022 AMP were not identified within the updated dataset.

The absence of these asset IDs is likely attributable to several factors. These may include assets that have been newly acquired by the Municipality following the completion of the 2022 AMP, assets that were under construction at the time of the extract, or assets that have been removed from the dataset due to decommissioning or disposal. All assets with a "in-service date" after 2021 were filtered out to create a data set with only assets from the 2025 Citywide asset IDs that matched with the 2022 AMP for this replacement costing update.

It is recommended that the Municipality revisit their AMP annually and update their replacement costing and condition information for their assets, however, it is not a requirement, and not all assets can be inspected and data updated on an annual basis due to budgeting and staffing constraints. The Municipality has updated their asset inventory annually, but this inventory update does not fully correlate to the 2022 AMP data set and as such not all assets were captured in this replacement cost update.

3.2 Cost Estimates

Replacement costs were established using 3% annual Inflation rate calculations based on Canadian Consumer Index, CPI starting from 2022. These estimates are also supplemented by third-party reporting for Bridge and Culvert structures, RS Means Data costing software, and experience with similar municipal infrastructure projects. The costing is prepared at a Class D level with an expected accuracy range of +/- 25%.

All cost estimates are in current dollars and are provided for budgeting purposes only. Accurate figures can only be obtained after further investigation, preparing detailed specifications, tendering and receiving competitive quotes from qualified contractors. These estimates represent updated values from the 2022 AMP, adjusted to reflect 2025-dollar values. A more detailed and accurate analysis of the asset inventory and cost estimates is anticipated as part of the next AMP update in 2027.

3.2.1 Road Assets

3.2.1.1 Linear

The replacement costs for the linear road assets were arrived at using cost estimates from similar sized and located municipalities where Dillon has done work. The road network was broken down into road surface and base materials type and length and then the updated unit costs were applied to each type of material for the road network.

3.2.1.2 Non-Linear

The road assets which fall into the non-linear category include:

- Curb and gutter;
- Street light fixtures;
- Arms, and wiring, poles;
- Road signs;
- Sidewalks;
- Guiderails;
- Signalized and pedestrian intersections; and
- Decorative lighting.

The replacement costs for these items were arrived at using an annual inflation rate of 3% from the 2022 AMP value.

The replacement costs for various road assets are presented in **Table 3-2** below.

Table 3-2: Summary of Replacement Costs – 2022 Compared to 2025 in 2025 Dollars

Roads Assets	Replacement Value ($2022)	Current Replacement Value ($2025)
Road Assets (Linear) Total	**$336,265,255**	**$407,733,409**
Road Assets (Non-Linear) – Curb and Gutter	$2,717,835	$2,969,852
Road Assets (Non-Linear) – Street Light Fixtures, Arms and Wiring	$1,705,700	$1,802,507
Road Assets (Non-Linear) – Poles	$2,043,800	$2,074,275
Road Assets (Non-Linear) – Road Signs	$241,600	$264,003
Road Assets (Non-Linear) – Sidewalk	$2,153,000	$3,584,682
Road Assets (Non-Linear) – Guiderails	$1,124,320	$1,228,575
Road Assets (Non-Linear) – Signalized and Pedestrian Intersections	$1,110,311	$1,213,267
Road Assets (Non-Linear) – Decorative Lighting	$482,100	$463,528
Road Assets (Non-Liner) Total	**$12,767,745**	**$13,600,689**
Road Assets Total	**$349,033,000**	**$421,334,098**

3.2.2 Water System Assets

3.2.2.1 Linear

The replacement costs for the water systems linear assets were arrived at using cost estimates from similar sized and located municipalities where Dillon has done work. The pipe network for Water System assets was broken down into pipe type and length and then updated costs were applied to each type of pipe for the system.

The replacement costs for various pipe diameters are presented in **Table 3-3** below.

Table 3-3: Linear Water System Assets Replacement Costs – 2025 Dollars

Diameter	Replacement Costs (Dollar per metre)
<= 250 millimetre	$1,600 per metre
251 millimetres to 400 metres	$3,000 per metre

3.2.2.2 Non-Linear

The total asset count within the 2025 Citywide data extract for the Water System assets was 1,693 assets with 13 assets added after 2021. The 2022 Dillon AMP contained 1,737 inventoried assets. The replacement costs for these items were arrived at using an annual inflation rate of 3% from the 2022 AMP value.

Table 3-4: Summary of Replacement Costs – 2022 Compared to 2025 in 2025 Dollars

Water System Assets	Replacement Value ($2022)	Replacement Value ($2025)
Linear Assets	$109,010,048	$181,658,484
Non-Linear Assets	$28,272,952	$17,349,649
Total	**$137,283,000**	**$199,008,130**

3.2.3 Wastewater Assets

3.2.3.1 Linear

The replacement costs for the wastewater linear assets were arrived at using cost estimates from similar sized and located municipalities where Dillon has done work. The pipe network for Wastewater assets was broken down into pipe type and length and then updated costs were applied to each type of pipe for the system.

The replacement costs for various pipe diameters and materials are presented in **Table** 3-5 below.

Table 3-5: Linear Wastewater Assets Replacement Costs – 2025 Dollars

Pipe Material	Diameter	Replacement Cost (Dollar per metre)
PVC	Less than 250 millimetres	$1,950 per metre
PVC	250 millimetres to 400 millimetres	$3,200 per metre
Concrete	Over 400 millimetres	$4,200 per metre

3.2.3.2 Non-Linear Assets

The total asset count from the 2025 Citywide data extract for the Wastewater assets was 1,064 assets with 13 assets with an "in service date" later than 2021.

The 2022 Dillon AMP contained 1,016 assets with 109 assets removed for Record keeping purposes or identified as "Work in Progress". The replacement costs for these items were arrived at using an annual inflation rate of 3% from the 2022 AMP value.

Table 3-6: Summary of Replacement Costs – 2022 Compared to 2025 in 2025 Dollars

Wastewater Assets	Replacement Value ($2022)	Replacement Value ($2025)
Linear Assets	$125,316,000	$273,066,054
Non-Linear Assets	$42,027,800	$21,050,182
Total	**$167,343,000**	**$294,116,230**

3.2.4 Stormwater Assets

3.2.4.1 Linear

The replacement costs for the stormwater linear assets were arrived at using cost estimates from similar sized and located municipalities where Dillon has done work. The pipe network for Stormwater assets was broken down into pipe type and length and then updated costs were applied to each type of pipe for the system.

The replacement costs for various pipe diameters and materials are presented in **Table 3-7** below.

Table 3-7: Linear Stormwater Assets Replacement Costs – 2025 Dollars

Diameter	Replacement Costs (Dollar per Metre)
Less than or equal to 250 millimetres	$1,500 per metre
251 millimetres to 400 millimetres	$1,600 per metre
Over 400 millimetres	$2,400 per metre

3.2.4.2 Non-Linear

The total asset count from the 2025 Citywide data extract for the Stormwater assets was 2877 assets with 306 assets added after 2021. The 2022 Dillon AMP data set for non-linear asset from the Stormwater category only contains Storm Culverts less than 3 metres in diameter. The replacement costs for these items were arrived at using an annual inflation rate of 3% from the 2022 AMP value. **Table 3-8** below explains the summary of replacement cost comparison with 2022.

Table 3-8: Summary of Replacement Costs – 2022 Compared to 2025 in 2025 Dollars

Stormwater Assets	Replacement Value ($2022)	Replacement Value ($2025)
Linear Assets	$106,047,653	$152,485,832
Non-Linear Assets	$3,760,347	$9,371,710
Total	**$109,808,000**	**$161,857,542**

3.2.5 Bridges and Culverts

Updated Replacement Cost for Bridges (Deck and Structure) and Culverts asset Category were arrived at using an annual inflation rate of 3% from the 2022 AMP value, which is based on the BM Ross Condition Assessment Report dated December 2023.

The breakdown of the total replacement cost of bridges and culverts within the network at are presented in **Table 3-9** below.

Table 3-9: Bridges and Culverts Estimated Replacement Costs – 2025 Dollars

Asset Type	Replacement Cost 2022	Replacement Cost 2025
Bridges – Deck	$16,846,000	$18,407,600
Bridges – Structures	$23,161,000	$25,308,150
Culverts	$30,056,000	$32,843,000
Total	**$70, 063,000**	**$76,558,750**

3.2.6 Buildings

For the current update, building replacement costs have been escalated to 2025 dollar values by applying an annual inflation rate of 3% to the 2022 estimates. A more detailed analysis of building components and their replacement costs will be included in the next AMP update in 2027.

The breakdown of the total replacement cost for the municipalities buildings and their square footage are presented in **Table 3-10** below.

Table 3-10: Buildings Replacement Cost – 2022 Comparison with 2025 Dollars

Building Type	Square Footage (ft^2)	2022 Replacement Cost	2025 Replacement Cost
Airport	9,400 ft^2	$946,000	$1,034,000
Arts Centre	13,536 ft^2	$3,684,000	$4,026,000
Cemetery Building	2,178 ft^2	$566,000	$619,000
Community Centre	26,300 ft^2	$5,785,000	$6,322,000
Fire Station	14,923 ft^2	$3,310,000	$3,617,000
Fish Cleaning Building	400 ft^2	$86,000	$94,000
Groundwater Pump Station	Not available	$453,000	$496,000
Leachate Treatment Facility	Not available	$3,252,000	$3,554,000
Library	18,094 ft^2	$3,105,500	$3,394,000
Lighthouse	1,554 ft^2	$3,378,000	$3,692,000
Medical Clinic	7,500 ft^2	$7,745,000	$8,464,000
Municipal Office	17,675 ft^2	$8,099,000	$8,850,000
Office Building	48,200 ft^2	$190,000	$208,000
Pavilion	9,976 ft^2	$1,638,000	$1,790,000
Recreation Centre	89,370 ft^2	$31,537,000	$34,462,000
Salt Shed	5,650 ft^2	$49,000	$54,000
Sand Shed	8,400 ft^2	$736,000	$805,000
Shed/ Storage Building	Not available	$2,331,000	$2,548,000
Washroom	6,226 ft^2	$1,610,000	$1,760,000
Works Garage	26,565 ft^2	$4,892,000	$5,346,000
Total		**83,392,500**	**91,126,000**

A third-party consultant completed a Facilities Condition Assessment for the Municipality in 2024, with the final report submitted in February 2025. The assessment identified a total replacement cost of $71,076,202 for the Municipality's building portfolio. This estimate is notably lower than Dillon's replacement cost estimate, which may be attributed to the breakdown and classification of building components by discipline. Some buildings are not part of this Facilities Condition Assessment report that are included in 2022 AMP that could be a cause of lower replacement values in third-party assessment report.

3.2.7 Equipment

The replacement costs for the equipment asset category were arrived at using an annual inflation rate of 3% from the 2022 AMP value.

The total asset count from the 2025 Citywide data extract was 568 pieces of equipment items, with 125 items purchased after 2021.

In the 2022 AMP, 788 pieces of equipment with none slated to be replaced before next update.

The breakdown of the total replacement cost for the equipment owned by the municipality are presented in **Table 3-11** below.

Table 3-11: Equipment Replacement Costs – 2022 Compared to 2025 in 2025 Dollars

Equipment Assets	Replacement Value ($2022)	Replacement Value ($2025)
Total	$6,271,000	$6,632,803

3.2.8 Fleet

The replacement costs for the fleet asset category were arrived at using an annual inflation rate of 3% from the 2022 AMP value.

The total asset count from the 2025 Citywide data extract was 115 vehicles, with 51 Vehicles purchased after 2021.

In the 2022 AMP 88 vehicles were inventoried with 13 slated to be replaced before next update.

The breakdown of the total replacement cost for the fleet are presented in **Table 3-12** below.

Table 3-12: Fleet Replacement Costs – 2022 Compared to 2025 in 2025 Dollars

Fleet Assets	Replacement Value ($2022)	Replacement Value ($2025)
Total	$15,624,000	$17,717,937

3.2.9 Parks and Yard Improvements

3.2.9.1 Yard Improvements

The replacement costs for the Yard Improvements asset category were arrived at using an annual inflation rate of 3% from the 2022 AMP value.

The 2022 Dillon AMP contained 553 yard improvements assets, 28 assets have been identified as removed assets and are not included in this update.

The breakdown of the total replacement cost for the yard improvements within the network at are presented in **Table 3-13** below.

Table 3-13: Summary of Replacement Costs – 2022 Compared to 2025 in 2025 Dollars

Land Assets	Replacement Value ($2022)	Replacement Value ($2025)
Yard Improvements (Total)	$36,729,700	$45,864,090

3.2.9.2 Land Improvements

This asset category was not reported on in the previous 2022 AMP data set. The municipality is tracking the land improvements asset category, however, as land assets do not require replacement as it relates to other assets, the quantification of a land value is not a useful metric for consideration.

3.3 Assumptions and Limitations

In completing replacement cost update, the following assumptions and limitations were applied:

- For the 2025 costs update, inventory counts are held at the 2022 AMP baseline. 2025 unit costs were developed from recent tenders, regional benchmarks, and inflation indexing. Inventory reconciliation and any additions or retirements will be handled in the next full AMP in 2027.
- The inventory provided was up-to-date and accurate at the time of receipt however this is just a 'snapshot' in time of the Municipality's inventory and is dynamic.
- No asset inspections or inventory investigations were undertaken.
- As the inventory was taken from a source which contains assets acquired after the last update, the inventory counts, and costing will fluctuate with the actual inventory the Municipality currently has in-house.

Appendix A

Natural Asset Inventory

Appendix A – Kincardine Natural Asset Inventory 2025

The Municipality of Kincardine (the Municipality) retained Dillon Consulting Limited (Dillon) to provide asset management planning services, including the development of an initial natural asset inventory to support the Municipality's compliance with Ontario Regulation (O. Reg.) 588/17 and its requirements for Green Infrastructure, which include natural assets.

This Appendix A to the Asset Management Plan (2025) provides a summary of the natural asset inventory development, including the methodology implemented by Dillon to create the inventory. The inventory has been provided to the Municipality in Geographic Information System (GIS) files contained within a compressed .zip file. It contains a shapefile made up of various files including; .gdb, .cpg, .dbf, .shp, .prj, .sbn, .sbx and .shx, as well as a map package of the layer in .mpkx format.

Methodology

The natural asset inventory was developed using methodologies of the *National Standard of Canada – Specification for Natural Asset Inventories; Canadian Standards Association – CSA W218:23* (CSA, 2023). The inventory was created in a GIS workspace using property parcel files provided to Dillon by the Municipality in April 2025. A total of 271 Municipality property parcels were provided, and the inventory mapping was created for the lands within those parcels.

The inventory was developed by creating discrete mapping units (polygons) of natural assets that were delineated and classified through desktop analysis, boundary delineation, and asset classification conducted by Dillon ecologists and natural asset specialists.

Natural asset polygons were first delineated from existing natural heritage feature mapping files provided to Dillon by the Municipality, and from publicly available agency files from the Ministry of Natural Resources (MNR) Land Information Ontario (LIO), which were first imported to the GIS workspace and analysed to inform the asset boundary delineation and classification process.

The analysed Municipality source files included data from the Municipality's Official Plan (OP) ("OP", 2021) which included the following layers:

- Locally Significant Wetlands;
- Unevaluated Wetlands;
- Linkages;
- Parks; and
- Significant Woodlands.

The analysed MNR LIO source files included the following four natural heritage feature types. Note that the *Water* and *Wetland* features were further subclassified in the MNR LIO files:

- Water:
  - Waterbody; and
  - Ontario Hydro Network (OHN) Watercourse.
- Wetland:
  - Wetland Significance: Provincially Significant Wetland (PSW); and
  - Wetland Type: Swamp.
- Wooded Area; and
- Areas of Natural and Scientific Interest (ANSI).

To create the Natural Asset mapping, the LIO feature layers and municipal layers were first overlaid in the mapped parcel areas and cross referenced with aerial imagery from the Municipality (King's Printer for Ontario 2025), Google Earth satellite imagery, and Google Earth Street View (Google 2025) (where available). If the boundaries of the features in those layers appeared to be accurate, the natural asset polygon boundaries were delineated to match.

As Watercours*e* files are polylines rather than polygons, a 0.5 metre width buffer was applied around the lines to create linear polygons. Watercourse feature alignments were adjusted to match aerial photography where the agency and/or Municipality file alignments did not match. If there was a watercourse name associated with either the LIO *Watercourse* feature layer or the municipal *Watercourse* layer, then a note indicating the watercourse name was added to the "Notes" attribute.

The remaining areas within the Municipality parcels were delineated using the aerial and satellite imagery as well as LIO feature layers and municipal layers where applicable. Note that contiguous natural assets that extended over multiple Municipality parcels were delineated as one natural asset polygon.

The delineated natural assets were then classified using an adaptation of the Ecological Land Classification (ELC) System for southern Ontario (Lee et al., 1998; Lee, 2008) and cross–referencing classification information from the agency and Municipality, where available. The ELC system is the provincial standard framework used to delineate and classify areas of land into discrete polygon units on a basis of similar ecological characteristics for the purposes of land (and natural asset) management. The ELC system uses various classification levels to classify similar lands at various scales. Two levels within the ELC hierarchy are most suitable to desktop analyses used for natural asset inventories: The *Community Class* level and the *Community Series* level. Such levels were therefore used for the North Middlesex inventory. The ELC framework uses a system of letter codes for abbreviating classifications, and these codes have been used in the inventory development.

Some modifications to the ELC hierarchy were developed by Dillon to adapt the system for use in natural asset inventories. These included the creation of asset classification types that better align with the intended requirements for natural asset management. The listing and hierarchy of natural asset types adapted from the ELC system are provided in a *Natural Asset Classification List and Hierarchy*, provided in **Table A1**, below. Modified letter codes were created for new asset types. For each natural asset type, a description is provided which outlines the criteria and context related to the ELC system and its integration into the natural asset inventory methodology. These criteria generally relate to land cover characteristics including vegetation density, vegetation cover type, water cover, rock cover, and soil cover.

For the inventory development, two ELC classification types within the “Constructed” Community Class were used:

- “Constructed” ELC polygons (ELC code CV) are communities that are highly anthropogenically managed and have limited to no natural features or characteristics. This includes municipal buildings and other built infrastructure. Such polygons are not natural assets and therefore were not identified as such in the

inventory and not assigned a Natural Asset ID number. Their polygons were delineated and classified as “Constructed” (CV) to fill in the spatial gaps in the Natural Assets mapping.

- “Constructed Green Lands” (ELC code CGL) have been included as natural assets. These include cemeteries, golf courses, parks, picnic areas, playgrounds and other similar land uses. While these lands are subject to some degree of construction and anthropogenic management, they may provide natural asset services, and are therefore included as Natural Assets in the inventory.

Additionally, agricultural lands (annual row crops, perennial cover crops, pastures, etc.) were included as natural assets in the inventory and classified as “Agriculture” (ELC code AG). While these lands are subject to some degree of anthropogenic management, they may provide natural asset services, and are therefore included as Natural Assets in the inventory.

For any natural asset polygon that spatially corresponded (overlapped) with any designated features in the LIO feature layers and/or Municipality layers that apply to natural assets this was noted within a “Corresponding Designation” attribute by listing the corresponding layer type.

Table 1 lists descriptions of attributes for each polygon as found in the shapefile.

Table 1: Attribute Descriptions

Attribute Name	Attribute Full Name	Description
FID	Feature ID	A unique feature identifier automatically created once the shapefile is created.
ROLL_NO	Roll Number	The assessment roll number for the municipal parcel where the feature is located.
NatAssetID	Natural Asset ID	An identification number that is unique to each natural asset polygon documented in the inventory.

Attribute Name	Attribute Full Name	Description
ELC_Code	Ecological Land Classification Code	Standardized Ecological Land Classification code that has been assigned to this feature.
NatAssetTy	Natural Asset Type	Full Ecological Land Classification designation.
Notes	Notes	Where individual land uses or names could be discerned from the analysis, additional notes were included. Notes corresponding to a natural asset included: Name of "Watercourse" and "Constructed Green Land" land use type.
Corresp_De	Corresponding Designation	Any corresponding LIO feature and Municipality layers that apply to natural assets and that overlap with the completed ELC polygons.

Results

A total of 566 individual asset polygons were classified and mapped in the inventory, comprising 33 asset types and a total area of 464.91 hectares. A summary count of the assets by type and by their total area in hectares is provided in **Table 2**, below.

Note that of these 566 assets, a total of 62 "Constructed" asset type polygons were identified and mapped, comprising 102.22 hectares. As noted above, these are not natural assets but rather are included in the inventory only for completeness of the mapping in the parcels and are counted separately.

Therefore, the total number of natural asset polygons is 504, comprising 362.68 hectares.

The linear lengths of *Watercourse* (code WC) and *Open Aquatic – River* (code OA–R) asset types were also measured and determined to be a total of 3,519 m and 7,019 m respectively for those asset types.

A summary table of all the natural assets and Constructed lands mapping is provided in **Table 2**, below.

Table 2: Summary Count of Natural Assets by Classification Type

Natural Asset Type	Quantity of Assets/Polygons	Total Area (Hectares)
Agriculture	11	35.37
Coniferous Forest	14	25.57
Coniferous Plantation	4	2.96
Coniferous Swamp	7	4.8
Coniferous Thicket	2	2.12
Coniferous Woodland	11	18.43
Constructed	62	102.22
Constructed Green Lands	130	94.79
Constructed Storm Water Management Pond	3	1.55
Deciduous Forest	5	21.62
Deciduous Swamp	21	9.85
Deciduous Thicket	10	2.56
Deciduous Woodland	47	14.71
Fencerow	19	3.72
Graminoid Meadow	4	1.13
Marsh	5	1.47
Meadow	18	2.78
Meadow Marsh	3	2.97
Mixed Forest	9	43.16
Mixed Meadow	12	6.86
Mixed Swamp	26	13.44
Mixed Woodland	45	14.88
Open Aquatic – Lake	8	21.66
Open Aquatic – River	11	4.82
Open Sand Barren and Dune	3	0.14
Open Shoreline	9	0.61
Shallow Aquatic – Pond	4	0.89

Natural Asset Type	Quantity of Assets/Polygons	Total Area (Hectares)
Shallow Aquatic – River	6	0.57
Shallow Marsh	4	1.52
Shrub Sand Barren and Dune	4	0.2
Thicket	4	5.42
Treed Sand Barren and Dune	5	1.5
Watercourse	40	0.48
Total Natural Assets	504	362.68
Constructed	62	102.22
Total Mapped Assets	566	464.91

Table A-1

Table A-1: Natural Asset Classification List and Hierarchy

Natural Asset Type		ELC Code	Description/Criteria
Community Class	Community Series		
Cliff		**CL**	Vegetation cover varies from patchy and barren to more closed and treed. Tree cover less than or equal to 60%. Vertical or near-vertical exposed bedrock. Greater than 3 metre height; bedrock type important. Sharp to variably broken edges, faces and rims; average substrate depth less than15 centimetres. Highly exposed; subject to extremes in temperature and moisture.
	Open Cliff	CLO	Tree cover less than 25%; shrub cover less than 25%. Open cliffs tend to be restricted to the bare, lichen covered, variably broken, near-vertical rock faces; open talus slopes tend to have little organic accumulations amongst mainly bare or lichen covered rock surfaces; the open communities are more subject to extremes in temperature and moisture.
	Shrub Cliff	CTS	Tree cover less than 25%; shrub cover more than 25%; shrub cover varies from clumped or patchy to continuous. Typically, on more heterogenous substrates, where more organics have accumulated in pockets, ledges and cracks.
	Treed Cliff	CLT	Tree cover more than 25%. Typically, a narrow community along the cliff rim, when on un-broken cliffs; tree cover increases with brokenness of cliff; increase in heterogeneity and microhabitats.
Talus		**TA**	Vegetation cover varies from patchy and barren to more closed and treed. Tree cover less than or equal to 60%. Slopes of rock rubble at the base of cliffs. Coarse rocky debris more than 50% of substrate surface; average substrate depth less than 15 centimetres; substrate consists of localized accumulations of organic matter amongst the coarse fragments; bedrock type important.
	Open Talus	TAO	Tree cover less than or equal to 25%; shrub cover less than or equal to 25%. Dominated by bare rock surfaces – may be a result of recent rock-fall; scattered accumulations of soil in between coarse fragments; extreme conditions inhibit woody species establishment.
	Shrub Talus	TAS	Tree cover less than 25%; shrub cover more than 25%; shrub cover varies from clumped or patchy to continuous. Shrub cover usually reflects more substantial soil accumulations among and over the coarse fragments; may also reflect time since disturbance; typically conditions less extreme -- e.g. shade effects on temperature and moisture conditions
	Treed Talus	TAT	25 % less than tree cover less than 60%. Tree cover usually reflects more substantial soil accumulations among and over the coarse fragments; may also reflect time since disturbance; typically conditions less extreme -- e.g. shade effects on temperature and moisture conditions.

Natural Asset Type		ELC Code	Description/Criteria
Community Class	Community Series		
Rock Barren		**RB**	Vegetation cover varies from patchy and barren to more closed and treed. Bedrock controlled topography; surface features of sites range from near level and unfractured, to rolling rock knob and hollow, to rock reef, block and fissure. Rock type important; patchy soil development; substrate depth less than 15 centimetres and variable. Extremes in moisture and temperatures
	Open Rock Barren	RBO	Tree cover less than 25%; shrub cover less than 25%. Dominated by bare rock surfaces; scattered accumulations of soil in cracks and pockets; extreme conditions inhibit woody species establishment.
	Shrub Rock Barren	RBS	Tree cover less than 25%; shrub cover more than 25%; shrub cover varies from clumped or scattered to continuous. Shrub cover usually reflects more substantial soil accumulations in cracks and pockets; may also reflect time since disturbance; typically conditions less extreme -- e.g. shade effects may dampen temperature and moisture extremes.
	Treed Rock Barren	RBT	Tree cover more than 25%. Tree cover usually reflects more substantial soil accumulations in cracks and pockets; may also reflect time since disturbance; typically conditions less extreme – e.g. shade effects on temperature and moisture conditions.
Bluff		**BL**	Vegetation cover varies from patchy and barren to continuous herbaceous or shrub cover. Tree cover less than 60%; tree establishment restricted by erosion-related disturbances. Active, steep to near-vertical exposures of unconsolidated mineral material; more than 2 metres in height; Disturbances from erosion and mass wasting prevail over substrate chemistry (i.e. Calcareous or not); gravity and hydrology controlled by angle of repose. Typically restricted to extant or historical lacustrine or riverine shorelines; subject to extremes in moisture and temperature; localized seepage areas often the cause of slope failures.
	Open Bluff	BLO	Tree cover less than 25%; shrub cover less than 25%. Common colonizing plants include Field Horsetail, Coltsfoot, Canada Goldenrod, Narrow-leaf Goldenrod. Substrate recently disturbed; subject to ongoing erosional processes. Least stable substrates.
	Shrub Bluff	BLS	Tree cover less than 25%; shrub cover more than 25%. Staghorn Sumac common. Field Horsetail, Coltsfoot, Canada Goldenrod, Narrow-leaf Goldenrod.
	Treed Bluff	BLT	Tree cover more than 25%. Longer time since disturbance or erosional processes less severe. More stable substrates with tree regeneration.

Natural Asset Type		ELC Code	Description/Criteria
Community Class	Community Series		
Sand Barren and Dune		**SB**	Vegetation cover varies from patchy and barren to more closed and treed. Active and droughty sands, typically formed by extant or historical shoreline and aeolian processes; Sand Dunes restricted to the near-shore areas of the Great Lakes in 6E and 7E. Stability of substrate variable; little to no accumulation of organic materials; low nutrient availability. Subjected to drought and temperature extremes.
	Open Sand Barren and Dune	SBO	Tree cover less than 25%; shrub cover less than 25%.
	Shrub Sand Barren and Dune	SBS	Tree cover less than 25%; shrub cover more than 25%; shrub cover varies from clumped or patchy to continuous.
	Treed Sand Barren and Dune	SBT	Tree cover more than 25%.
Meadow		**ME**	Tree and shrub cover less than 25%; open herbaceous communities; cover varies from scattered and patchy to continuous meadow; natural areas typically have unique floras (e.g. Tallgrass Prairie), areas with a cultural legacy, typically dominated by invasive plant species. Mineral soil more than 30 centimetres deep; shrub and tree establishment inhibited by environment or have been removed by land use practices; areas subjected to natural disturbance (e.g. fire) or recovering from cultural disturbance (e.g. clearing, pasture).
	Graminoid Meadow	MEG	Dominated by grass-like species (e.g. grass, sedge).
	Forb Meadow	MEF	Dominated by broadleaf species.
	Mixed Meadow	MEM	Mix of grass-like and broadleaf species.
Thicket		**TH**	Shrub cover more than 25%; tree cover less than 25%; shrub cover varies from scattered and patchy to continuous; natural areas typically have unique floras, areas with a cultural legacy, typically dominated by more invasive shrub species. Mineral soil more than 30 centimetres deep; tree establishment inhibited by environment or have been removed by land use practices; areas subjected to natural disturbance (e.g. fire) or recovering from cultural disturbance (e.g. clearing, pasture); often found associated with the drier verges of wetlands.
	Coniferous Thicket	THC	Coniferous shrub species dominate; coniferous cover more than75%.
	Deciduous Thicket	THD	Deciduous shrub species dominate; deciduous cover more than 75%.
Savanna		**SV**	25% less than tree cover less than 35%; semi-open treed communities; natural areas typically have unique floras (e.g. Tallgrass Savanna), areas with a cultural legacy, typically dominated by more invasive herbaceous, shrub, and tree species; tree cover typically scattered or clumped. Mineral soil more than 15 cm deep; areas with intermediate levels of environmental limitations (e.g. fire, drought), intensity of cultural disturbances, or time since last disturbance.
	Coniferous Savanna	SVC	Coniferous tree species dominate; coniferous cover more than75%.
	Mixed Savanna	SVM	Both coniferous and deciduous tree species cover more than 25%.
	Deciduous Savanna	SVD	Deciduous tree species dominate; deciduous tree cover more than 75%.

Natural Asset Type		ELC Code	Description/Criteria
Community Class	Community Series		
Woodland		**WO**	35% less than tree cover less than 60%; semi-closed treed communities. Natural areas typically have unique floras (e.g. Tallgrass Woodland), areas with a cultural legacy, typically dominated by more invasive herbaceous, shrub, and tree species; tree cover more closed and shaded. Mineral soil more than 15 centimetres deep; areas with intermediate levels of environmental limitations (e.g. fire, drought), intensity of cultural disturbances, or time since last disturbance.
	Coniferous Woodland	WOC	Coniferous tree species dominate; coniferous cover more than75%.
	Mixed Woodland	WOM	Both coniferous and deciduous tree species cover more than 25%.
	Deciduous Woodland	WOD	Deciduous tree species dominate; deciduous cover more than 75%.
Forest		**FO**	Tree cover more than 60%. Site conditions and substrate types variable.
	Coniferous Forest	FOC	Conifer tree species more than 75% of canopy cover.
	Mixed Forest	FOM	Conifer tree species more than 25% and deciduous tree species more than 25% of canopy cover.
	Deciduous Forest	FOD	Deciduous tree species more than 75% of canopy cover.
Swamp		**SW**	Tree or shrub cover more than 25%. Dominated by hydrophytic shrub and tree species. Variable flooding regimes. Water depth less than 2 metres. Standing water or vernal pooling more than 20% of ground coverage.
	Coniferous Swamp	SWC	Tree cover more than 25%; trees more than 5 m in height. Conifer tree species more than 75% of canopy cover. Typically has a more northern compliment of species, including Bunchberry, Dwarf Raspberry, Wintergreen, Starflower, Goldthread, Canada Mayflower, Naked Mitrewort, Dewdrop, Bluebead Lily and Horsetails. Richer coniferous swamps, especially on organic substrates, may have Fly Honeysuckle, Swamp Red Currant, Mountain Maple, Cinnamon Fern and Royal Fern.
	Mixed Swamp	SWM	Tree cover more than 25%; trees more than 5 metres in height. Deciduous tree species more than 25% and coniferous tree species more than 25% of canopy cover. Vegetation is a mixture of typical conifer swamp and deciduous swamp species; Bunchberry, Starflower, Goldthread, Bluebead Lily, Naked Mitrewort along with Bedstraws, Fowl Manna Grass, Spotted Touch -me -not, Skunk Cabbage, Marsh Marigold and Sedges. Typically, fern rich; Sensitive Fern, Cinnamon Fern, Royal Fern, Marsh Fern and Ostrich Fern.
	Deciduous Swamp	SWD	Tree cover more than 25%; trees more than 5 metres in height. Deciduous tree species more than 75% of canopy cover. Common species include Fowl Manna Grass, Spotted Touch -me -not, Bugleweed, Skunk Cabbage, Marsh Marigold, Bedstraws and Stinging Nettles. Typically, fern and sedge rich.
	Thicket Swamp	SWT	Shrub species dominate.

Natural Asset Type		ELC Code	Description/Criteria
Community Class	Community Series		
Fen		**FE**	Tree cover (trees more than 2 metres high) less than or equal to 25%. Sedges, grasses and low (less than 2 metres) shrubs dominate. Substrate organic; more than 40 centimetres of brown moss or sedge peat (if substrate not organic - go to Great Lakes Coastal Meadow Marshes or Mineral Fen Meadow Marshes). Rarely flooded, always saturated. pH is slightly alkaline to mildly non-calcareous. Minerotrophic peatland.
	Open Fen	FEO	Tree cover less than or equal to 10%; shrub cover less than or equal to 25%.
	Shrub Fen	FES	Tree cover less than or equal to 10%; shrub cover more than 25%.
	Treed Fen	FET	10% less than tree cover less than 25%.
Bog		**BO**	Tree cover (trees more than 2 metres high) less than or equal to 25%. Substrate organic; more than 40 centimetres of Sphagnum peat; rarely flooded; always saturated. pH is moderate to highly non-calcareous (less than 4.2). Ombrotrophic peatland.
	Open Bog	BOO	Tree cover less than or equal to 10%; shrub cover less than or equal to 25%.
	Shrub Bog	BOS	Shrub cover more than25%.
	Treed Bog	BOT	10% less than tree cover less than or equal to 25%. Continuous Sphagnum spp. Cover.
Marsh		**MA**	Tree and shrub cover less than or equal to 25%. Dominated by emergent hydrophytic macrophytes. Variable flooding regimes; water depth less than 2 metres.
	Meadow Marsh	MAM	Species less tolerant of prolonged flooding; includes Facultative, Facultative Wetland, and Obligate Wetland plants. Flooding seasonal – soils flooded in spring, moist to dry by summer. Represents the wetland – terrestrial interface. Variable flooding, seepage, and sheet flow over bedrock.
	Shallow Marsh	MAS	Species less tolerant of prolonged flooding; species restricted to facultative and obligate wetland plants.
Open Aquatic – Lake		**OA-L**	Open water lake communities with little to no vegetation, typically due to water depths. Excludes stormwater management ponds. The ELC "OA" code type uses the "L" modified to indicate a lake (rather than a river or pond).
Open Aquatic – River		**OA-R**	Open water river communities with little to no vegetation, typically due to water depths. Excludes stormwater management ponds. The ELC "OA" code type uses the "R" modified to indicate a river (rather than a lake or pond).
Open Aquatic – Pond		**OA-P**	Open water pond communities with little to no vegetation, typically due to water depths. Excludes stormwater management ponds. The ELC "OA" code type uses the "P" modified to indicate a pond (rather than a lake or river).
Shallow Aquatic – Lake		**SA-L**	Shallow water lake communities with vegetation present (either submerged or emergent) enabled by shallow depths. Excludes stormwater management ponds. The ELC "SA" code type uses the "L" modified to indicate a lake (rather than a pond or river).
Shallow Aquatic – River		**SA-R**	Shallow water river communities with vegetation present (either submerged or emergent) enabled by shallow depths. Excludes stormwater management ponds. The ELC "SA" code type uses the "R" modified to indicate a river (rather than a pond or lake).

Natural Asset Type		ELC Code	Description/Criteria
Community Class	Community Series		
Shallow Aquatic – Pond		**SA-P**	Shallow water pond communities with vegetation present (either submerged or emergent) enabled by shallow depths. Excludes stormwater management ponds. The ELC "SA" code type uses the "P" modified to indicate a pond (rather than a lake or river).
	Submerged Shallow Aquatic	SAS	Submerged vegetation dominates.
	Mixed Shallow Aquatic	SAM	A mix of submerged and floating vegetation dominates.
	Floating-leaved Shallow Aquatic	SAF	Floating-leaved or emergent vegetation dominates.
Shoreline		**SH**	Vegetation cover varies from patchy and barren to more closed and treed. Sites associated with and adjacent to permanent or ephemeral water; subject to active shoreline processes: ice scour, wave energy, erosion, seepage or sheet flow, and deposition; above high water mark; extremes in disturbance (energy), moisture and temperature; shorelines tend to be narrow and linear communities following the active margins along water bodies.
	Open Shoreline	SHO	Tree cover less than 25%; shrub cover less than 25%. Shoreline processes most severe; most woody species establishment inhibited.
	Shrub Shoreline	SHS	Tree cover less than 25%; shrub cover more than 25%; shrub cover varies from clumped or patchy to continuous. Shoreline processes less severe; woody species restricted to shrubs.
	Treed Shoreline	SHT	Tree cover more than 25%. Active processes least severe; woody species establishment includes shrub and tree species.
Watercourse		**WC**	This Natural Asset type is not part of the ELC system but is used to delineate and characterize watercourses (creeks, streams, etc.) which are too narrow to be delineated as Open Aquatic or Shallow Aquatic features (which are delineated as polygons), and are instead delineated as linear (polyline) features.
Agriculture		**AG**	Agricultural landscapes (which collectively include annual row crops, perennial cover crops, pastures, vineyards, orchards, and nurseries, but exclude plantations, treed pastures, and fencerows [described elsewhere]) are not natural due to their actively managed regimes but may provide natural asset services and therefore may warrant inclusion in natural asset inventories.
Coniferous Plantation		**TAGM1**	Plantation landscapes (e.g. reforested lands) dominated by coniferous species, typically monocultures. An agricultural feature, therefore subject to the considerations of AG features.
Mixed Plantation		**TAGM2**	Plantation landscapes (e.g. reforested lands) comprised of a mix of coniferous and deciduous species. An agricultural feature, therefore subject to the considerations of AG features.
Deciduous Plantation		**TAGM3**	Plantation landscapes (e.g. reforested lands) dominated by deciduous species, typically monocultures. An agricultural feature, therefore subject to the considerations of AG features.
Treed Pasture		**TAGM4**	Pastured agricultural landscapes with extensive tree cover. An agricultural feature, therefore subject to the considerations of AG features.

Natural Asset Type		ELC Code	Description/Criteria
Community Class	Community Series		
Fencerow		**TAGM5**	Landscape features comprising linear treed areas, typically along property boundaries or adjacent to roadways, either as linear remnants of cleared areas or planted rows. An agricultural feature, therefore subject to the considerations of AG features.
Constructed Green Land		**CGL**	Constructed Green Lands are vegetated lands that are not natural due to their actively managed regimes but may provide natural asset services and therefore may warrant inclusion in natural asset inventories. They include parks, picnic areas, playing fields, common gardens, golf courses, playgrounds, arboreta, cemeteries, extensive multi-use path and trail systems, and the peripheries of stormwater management pond facilities.
Constructed Storm Water Management Pond		**CSWMP**	This asset type is not part of the ELC system but is used to delineate and characterize constructed storm water management ponds. These are non-natural features due to their constructed nature and actively managed regimes but may provide natural asset services and therefore may warrant inclusion in natural asset inventories.
Constructed		**CV**	Landscapes defined as Constructed are not Natural Assets. This classification is used in Natural Asset inventories to delineate and classify non-natural areas to indicate their exclusion from the inventory and fill the gaps in the mapping.

Table A-2

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
1	CGL	Constructed Green Lands	Patterson Park	Official Plan – Park	0.24849
2	WOD	Deciduous Woodland	Null	Null	0.112501
3	CGL	Constructed Green Lands	Cemetery	Official Plan – Linkages	6.355515
4	CGL	Constructed Green Lands	Historical Site	Null	0.281624
5	FOM	Mixed Forest	Null	Null	19.072179
6	SBS	Shrub Sand Barren and Dune	Null	Null	0.042237
7	CGL	Constructed Green Lands	Memorial Park	Official Plan – Parks	0.133825
8	CGL	Constructed Green Lands	Mystic Cove Trail	Null	0.057712
9	CGL	Constructed Green Lands	Walking path	Null	0.067369
10	CGL	Constructed Green Lands	Null	Null	0.117448
11	TAGM5	Fencerow	Null	Null	0.023082
12	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	1.119599
13	MEM	Mixed Meadow	Null	Null	5.061868
14	CGL	Constructed Green Lands	Cemetery	Null	2.019952
15	WOD	Deciduous Woodland	Alps Park	Official Plan – Parks	0.563462
16	CGL	Constructed Green Lands	Null	Null	0.179826
17	CGL	Constructed Green Lands	Null	Null	0.022812
18	WOC	Coniferous Woodland	Null	Official Plan – Significant Woodland	2.428125
19	WOM	Mixed Woodland	Null	Null	0.020166
20	WOD	Deciduous Woodland	Null	Null	0.047001
21	SHO	Open Shoreline	Beach	Null	0.054106
22	CGL	Constructed Green Lands	Reunion Park	Official Plan – Parks	0.867898
23	CGL	Constructed Green Lands	Null	Null	0.0429
24	WOM	Mixed Woodland	Null	Null	0.16487
25	CGL	Constructed Green Lands	Null	Null	0.069653
26	WOM	Mixed Woodland	Null	Official Plan – Significant Woodland	0.09085
27	CGL	Constructed Green Lands	Null	Null	0.098027
28	WOD	Deciduous Woodland	Null	Null	0.485713
29	WOM	Mixed Woodland	Null	MNR – Unevaluated Wetland	0.056591
30	WOC	Coniferous Woodland	Null	Null	0.081202
31	SBO	Open Sand Barren and Dune	Null	Null	0.081739

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
32	THD	Deciduous Thicket	Null	Null	0.028111
33	CGL	Constructed Green Lands	Null	Null	0.000656
34	CGL	Constructed Green Lands	Null	Null	0.021809
35	CGL	Constructed Green Lands	Church and adjacent greenspace	Null	0.080668
36	CGL	Constructed Green Lands	Null	Null	0.003546
37	CGL	Constructed Green Lands	Null	Null	0.128569
38	CGL	Constructed Green Lands	Queen's Lookout	Official Plan – Parks	0.222702
39	CGL	Constructed Green Lands	Null	Null	0.275589
40	WOM	Mixed Woodland	Null	Null	0.156804
41	CGL	Constructed Green Lands	Blackwell Park	Official Plan – Parks	0.637102
42	WOD	Deciduous Woodland	Null	Null	0.222437
43	WOM	Mixed Woodland	Null	Null	0.10893
44	TAGM5	Fencerow	Null	Null	0.065253
45	AG	Agriculture	Null	Null	0.132932
46	CGL	Constructed Green Lands	Walking Path	Null	0.0184
47	CGL	Constructed Green Lands	Cemetery	Null	0.115941
48	CGL	Constructed Green Lands	Walking Path	Null	0.048913
49	AG	Agriculture	Null	Null	1.454031
50	TH	Thicket	Null	Official Plan – Linkages	3.489
51	CGL	Constructed Green Lands	Null	Official Plan – Parks	0.101234
52	CGL	Constructed Green Lands	Picnic Area	Null	1.447227
53	WOM	Mixed Woodland	Null	MNR – Woodland	0.072643
54	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.659903
55	WOC	Coniferous Woodland	Null	Null	0.042862
56	SBS	Shrub Sand Barren and Dune	Null	Null	0.041372
57	CGL	Constructed Green Lands	Null	Null	6.301754
58	WOD	Deciduous Woodland	Null	Null	0.056705
59	TAGM5	Fencerow	Null	Null	0.034003
60	TAGM5	Fencerow	Null	Null	0.010265
61	CGL	Constructed Green Lands	Bluewater Trailer Park	Official Plan – Parks	0.852321
62	WOM	Mixed Woodland	Null	Null	0.089039

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
63	WOC	Coniferous Woodland	Null	MNR – Unevaluated Wetland	0.707474
64	CGL	Constructed Green Lands	Armow Playground	Official Plan – Parks	0.564333
65	WOM	Mixed Woodland	Null	Official Plan – Significant Woodland	0.965513
66	MEG	Graminoid Meadow	Located within/ surrounded by recent subdivision development	MNR – Unevaluated Wetland	0.542609
67	CGL	Constructed Green Lands	Contains a drainage ditch	Null	0.131876
68	CGL	Constructed Green Lands	Contains watercourse	Null	0.093578
69	WOM	Mixed Woodland	Null	MNR – Woodland	0.043045
70	CGL	Constructed Green Lands	Walking Path	Null	0.019785
71	SBS	Shrub Sand Barren and Dune	Null	Null	0.037742
72	CGL	Constructed Green Lands	Null	Null	0.651034
73	CGL	Constructed Green Lands	Legion Park	Official Plan – Linkages, Official Plan – Parks	4.636344
74	SWD	Deciduous Swamp	ANSI: Glammis Bog – Provincial Significance	MNR – ANSI: Life Science, MNR – Unevaluated Wetland	0.122264
75	SWC	Coniferous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.390873
76	CGL	Constructed Green Lands	Elgin Market Park	Official Plan – Parks	1.148486
77	WOM	Mixed Woodland	Null	Null	0.035791
78	CGL	Constructed Green Lands	McIntyre Park	Official Plan – Parks	0.170282
79	CGL	Constructed Green Lands	Null	Null	0.01197
80	CGL	Constructed Green Lands	Walking Path	Null	0.040252
81	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.85358
82	WOD	Deciduous Woodland	Null	Null	0.102506
83	FOM	Mixed Forest	Inverhuron Park	Official Plan – Parks	0.693364
84	CGL	Constructed Green Lands	Null	Null	0.002535
85	CGL	Constructed Green Lands	Bervie Community Park	Official Plan – Parks	0.755749
86	CGL	Constructed Green Lands	Null	Null	0.07538
87	CGL	Constructed Green Lands	Null	Null	0.095788
88	CGL	Constructed Green Lands	Rotary Park	Official Plan – Parks	0.958434
89	CGL	Constructed Green Lands	Park	Null	0.084334

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
90	CGL	Constructed Green Lands	Null	Null	0.007815
91	SBS	Shrub Sand Barren and Dune	Null	Null	0.082963
92	CGL	Constructed Green Lands	Null	Null	0.01005
93	CGL	Constructed Green Lands	Cemetery	Null	0.1903
94	CGL	Constructed Green Lands	Walking Path	Null	0.018228
95	CGL	Constructed Green Lands	Null	Null	4.862257
96	OA–L	Open Aquatic – Lake	Lake Huron	MNR – Waterbody	0.042456
97	CGL	Constructed Green Lands	Null	Null	0.002047
98	CGL	Constructed Green Lands	Connaught Park	Official Plan – Parks	6.10175
99	SBT	Treed Sand Barren and Dune	Null	Null	0.110633
100	FOM	Mixed Forest	Null	Official Plan – Significant Woodland	8.274088
101	CGL	Constructed Green Lands	MacPherson Park	Official Plan – Parks	0.991848
102	SWM	Mixed Swamp	Lorne Beach Swamp	Official Plan – Locally Significant Wetland, MNR – Locally Significant Wetland	0.029485
103	CGL	Constructed Green Lands	Victoria Park	Official Plan – Parks	0.811339
104	MA	Marsh	Null	Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.30312
105	CGL	Constructed Green Lands	Null	Null	0.189509
106	CGL	Constructed Green Lands	Null	Null	0.216109
107	CGL	Constructed Green Lands	Null	Null	0.079457
108	OA–L	Open Aquatic – Lake	Lake Huron	MNR – Waterbody	0.0516
109	TAGM5	Fencerow	Null	Null	0.792047
110	WOM	Mixed Woodland	Null	MNR – Woodland	0.215973
111	ME	Meadow	Null	Official Plan – Parks	0.153061
112	CGL	Constructed Green Lands	Geddes Park	Official Plan – Parks	0.861181
113	FOC	Coniferous Forest	Null	Official Plan – Significant Woodland	6.902914
114	MEG	Graminoid Meadow	Null	Official Plan – Linkages	0.123274
115	WOM	Mixed Woodland	Null	Null	0.062744
116	CGL	Constructed Green Lands	Null	Null	0.005939
117	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.078134
118	OA–L	Open Aquatic – Lake	Kincardine Marina, Lake Huron, Penetangore River	MNR – Waterbody, MNR – Watercourse	20.180734

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
119	WOD	Deciduous Woodland	Null	MNR – Woodland	1.537957
120	CGL	Constructed Green Lands	Lake Huron Highlands	Official Plan – Parks	0.453243
121	CGL	Constructed Green Lands	Null	Null	0.172826
122	CGL	Constructed Green Lands	Null	Null	0.25606
123	OA–L	Open Aquatic – Lake	ANSI: Scott Point – Provincial Significance	MNR – ANSI: Life Science, MNR – Unevaluated Wetland	0.767012
124	CGL	Constructed Green Lands	Monument	Null	0.006912
125	AG	Agriculture	Null	Null	22.163339
126	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.862231
127	CGL	Constructed Green Lands	Kincardine Soccer Fields	Official Plan – Parks	0.249149
128	SWM	Mixed Swamp	Null	MNR – Unevaluated Wetland	0.140536
129	SHO	Open Shoreline	Null	Null	0.018225
130	CGL	Constructed Green Lands	Brucedale Community Centre, Historic Site	Official Plan – Parks	0.389747
131	ME	Meadow	Null	Null	0.120414
132	TAGM5	Fencerow	Null	Null	0.037187
133	WOC	Coniferous Woodland	Null	MNR – Woodland	0.528437
134	CGL	Constructed Green Lands	Cemetery	Null	0.344754
135	CGL	Constructed Green Lands	Tiverton and District Sports Complex	Official Plan – Parks	3.968691
136	CGL	Constructed Green Lands	Cemetery	Null	1.230472
137	MEM	Mixed Meadow	Null	Null	0.063853
138	AG	Agriculture	Null	Null	0.465522
139	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.05982
140	THD	Deciduous Thicket	Null	Null	0.447584
141	WOM	Mixed Woodland	Null	Null	0.047032
142	WOD	Deciduous Woodland	Null	Null	0.218968
143	WOM	Mixed Woodland	Null	Official Plan – Significant Woodland	0.969863
144	WOD	Deciduous Woodland	Null	Null	0.07801
145	FOC	Coniferous Forest	Null	Null	0.930641
146	CGL	Constructed Green Lands	Mystic Cove Trail	Null	0.186083
147	THC	Coniferous Thicket	Null	Null	0.144804
148	CGL	Constructed Green Lands	Null	Null	1.209737

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
149	CGL	Constructed Green Lands	Historical Site	Null	0.245832
150	TAGM5	Fencerow	Null	Null	0.084179
151	FOM	Mixed Forest	Kincardine River	Official Plan – Significant Woodland, MNR – Waterbody, MNR – Watercourse	0.688378
152	WOD	Deciduous Woodland	Helliwell Park	Official Plan – Parks, Official Plan – Significant Woodland	0.761453
153	CGL	Constructed Green Lands	Null	Null	0.442947
154	CGL	Constructed Green Lands	Null	Null	0.081046
155	THD	Deciduous Thicket	Null	Null	0.202023
156	CGL	Constructed Green Lands	Null	Null	0.76152
157	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.484855
158	WOM	Mixed Woodland	Null	Null	0.091076
159	CGL	Constructed Green Lands	ANSI: Scott Point – Provincial Significance	MNR – ANSI: Life Science	0.034597
160	WOM	Mixed Woodland	Null	MNR – Woodland	0.055196
161	CGL	Constructed Green Lands	Cemetery	Null	0.365679
162	CGL	Constructed Green Lands	Alps Park	Official Plan – Parks	2.485188
163	CGL	Constructed Green Lands	Null	Null	0.034162
164	CGL	Constructed Green Lands	Null	Official Plan – Parks	1.175075
165	CGL	Constructed Green Lands	Null	Null	0.002682
166	WOM	Mixed Woodland	Null	Null	0.286417
167	WOM	Mixed Woodland	Null	MNR – Woodland	0.070355
168	MEM	Mixed Meadow	Null	Null	0.394449
169	SBO	Open Sand Barren and Dune	Null	Null	0.054127
170	AG	Agriculture	Null	Null	4.831397
171	WOM	Mixed Woodland	ANSI: Scott Point – Provincial Significance	MNR – ANSI: Life Science	0.529068
172	WOM	Mixed Woodland	Null	Null	0.004094
173	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.392354
174	CGL	Constructed Green Lands	Cemetery	Null	0.029653
175	CGL	Constructed Green Lands	Null	Null	0.013645
176	FOC	Coniferous Forest	Null	Null	3.920956
177	SWM	Mixed Swamp	Null	MNR – Unevaluated Wetland	6.416
178	AG	Agriculture	Null	Null	4.867114

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
179	SWC	Coniferous Swamp	Null	MNR – Unevaluated Wetland	1.715685
180	MAS	Shallow Marsh	Null	MNR – Unevaluated Wetland	0.724965
181	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.413848
182	FOM	Mixed Forest	Null	Official Plan – Significant Woodland	0.92924
183	MEM	Mixed Meadow	Null	Null	0.035714
184	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.101269
185	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.007759
186	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.034409
187	FOD	Deciduous Forest	Null	Official Plan – Significant Woodland	0.063394
188	TAGM5	Fencerow	Null	Null	0.426026
189	CGL	Constructed Green Lands	Null	Null	5.589874
190	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.0601
191	WOM	Mixed Woodland	Null	Null	0.49702
192	WOM	Mixed Woodland	Null	Null	1.908665
193	TAGM5	Fencerow	Null	Null	0.129769
194	WOM	Mixed Woodland	Null	Null	0.089708
195	FOC	Coniferous Forest	Null	Official Plan – Significant Woodland	0.087052
196	FOC	Coniferous Forest	Null	Official Plan – Significant Woodland	0.081646
197	WOD	Deciduous Woodland	Reunion Park	Official Plan – Parks	0.070512
198	SBT	Treed Sand Barren and Dune	Reunion Park	Official Plan – Parks	0.131445
199	WOM	Mixed Woodland	Reunion Park	Official Plan – Parks	0.174003
200	SBT	Treed Sand Barren and Dune	Reunion Park	Official Plan – Parks	0.671823
201	SBT	Treed Sand Barren and Dune	Reunion Park	Official Plan – Parks	0.349219
202	AG	Agriculture	Null	Null	0.033805
203	WOM	Mixed Woodland	Null	Null	0.018338
204	THD	Deciduous Thicket	Null	Null	0.158566
205	CGL	Constructed Green Lands	Mystic Cove Trail	Official Plan – Significant Woodland	0.042606
206	OA–L	Open Aquatic – Lake	Reunion Park, Kincardine Marina	Official Plan – Parks	0.542608
207	TAGM5	Fencerow	Reunion Park	Official Plan – Parks	0.350676
208	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.011413

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
209	FOC	Coniferous Forest	Null	Official Plan – Significant Woodland	0.185615
210	ME	Meadow	Null	Null	0.04112
211	CGL	Constructed Green Lands	Null	Null	0.033627
212	TAGM5	Fencerow	Null	Null	0.144256
213	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.003213
214	OA–R	Open Aquatic – River	Penetangore River	Official Plan – Significant Woodland, MNR – Waterbody, MNR – Watercourse	0.774288
215	CGL	Constructed Green Lands	Null	Null	0.063884
216	CGL	Constructed Green Lands	Null	Null	0.28751
217	CGL	Constructed Green Lands	Null	Null	0.448116
218	AG	Agriculture	Null	Null	0.24237
219	ME	Meadow	Null	Null	0.089567
220	TAGM1	Coniferous Plantation	Null	Null	0.065653
221	WOD	Deciduous Woodland	Null	MNR – Woodland	0.443894
222	WOC	Coniferous Woodland	Null	Official Plan – Linkages	0.058031
223	THD	Deciduous Thicket	Null	Null	0.027821
224	MEM	Mixed Meadow	Null	Null	0.016415
225	WOC	Coniferous Woodland	Null	Official Plan – Linkages	0.31483
226	AG	Agriculture	Null	Null	0.963424
227	WOM	Mixed Woodland	Null	Null	2.221808
228	ME	Meadow	Null	Null	0.748993
229	WOC	Coniferous Woodland	Null	Null	0.363652
230	CSWMP	Constructed Storm Water Management Pond	Null	Null	0.251084
231	THD	Deciduous Thicket	Null	Null	0.112982
232	CGL	Constructed Green Lands	Null	Null	0.646861
233	MEG	Graminoid Meadow	Null	MNR – Unevaluated Wetland	0.346539
234	FOM	Mixed Forest	Null	Official Plan – Parks, Official Plan – Significant Woodland	0.012417
235	ME	Meadow	Null	Null	0.002379
236	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.001764

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
237	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.001365
238	ME	Meadow	Null	Null	0.779697
239	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.399508
240	WOM	Mixed Woodland	Null	Official Plan – Significant Woodland	0.003253
241	ME	Meadow	Null	Null	0.007793
242	ME	Meadow	Null	Null	0.002842
243	WOM	Mixed Woodland	Null	Official Plan – Significant Woodland	0.045567
244	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.937256
245	TAGM5	Fencerow	Null	Null	0.373143
246	SA–R	Shallow Aquatic – River	Kincardine River	MNR – Waterbody, MNR – Watercourse	0.397951
247	FOC	Coniferous Forest	Null	Null	0.886549
248	SWC	Coniferous Swamp	Null	Official Plan – Unevaluated Wetland	0.625641
249	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.869677
250	FOC	Coniferous Forest	Null	Official Plan – Significant Woodland	1.957906
251	FOC	Coniferous Forest	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.271232
252	MAM	Meadow Marsh	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.432958
253	ME	Meadow	Null	Official Plan – Significant Woodland	0.284007
254	ME	Meadow	Null	Null	0.045688
255	ME	Meadow	Null	Official Plan – Significant Woodland	0.359455
256	MAM	Meadow Marsh	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.197478
257	MEM	Mixed Meadow	Null	Null	0.038005
258	MEG	Graminoid Meadow	Null	Null	0.119798
259	CSWMP	Constructed Storm Water Management Pond	Null	Null	0.387104

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
260	WOD	Deciduous Woodland	Legion Park	Official Plan – Linkages, Official Plan – Parks	0.039426
261	SWD	Deciduous Swamp	Legion Park	Official Plan – Parks, Official Plan – Unevaluated Wetland	0.082332
262	MA	Marsh	Legion Park	Official Plan – Parks, MNR – Unevaluated Wetland	0.654853
263	MA	Marsh	Legion Park	Official Plan – Parks, Official Plan – Unevaluated Wetland, MNR – Unevaluated Wetland	0.37995
264	WOD	Deciduous Woodland	Legion Park	Official Plan – Parks	1.679153
265	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.473096
266	CGL	Constructed Green Lands	Null	Null	0.009336
267	WOC	Coniferous Woodland	Null	Null	0.003225
268	FOM	Mixed Forest	Null	Official Plan – Significant Woodland	3.516707
269	FOC	Coniferous Forest	Null	Official Plan – Significant Woodland	1.70859
270	SWC	Coniferous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	1.687482
271	WOM	Mixed Woodland	Null	Official Plan – Significant Woodland	0.074104
272	WOD	Deciduous Woodland	ANSI: Glammis Bog – Provincial Significance	MNR – ANSI: Life Science	0.077002
273	FOC	Coniferous Forest	Null	Official Plan – Significant Woodland	0.070642
274	TAGM5	Fencerow	Elgin Market Park	Official Plan – Parks	0.161523
275	CGL	Constructed Green Lands	Inverhuron Park	Official Plan – Parks	0.347475
276	SHO	Open Shoreline	Null	Null	0.06846
277	OA–R	Open Aquatic – River	Rotary Park, Penetangore River	Official Plan – Parks, MNR – Waterbody, MNR – Watercourse	0.122895
278	WOM	Mixed Woodland	Null	Null	0.187906
279	WOM	Mixed Woodland	Null	Official Plan – Significant Woodland	1.912475
280	SBO	Open Sand Barren and Dune	Null	Null	0.009449
281	WOD	Deciduous Woodland	Connaught Park	Official Plan – Parks	0.747935
282	CGL	Constructed Green Lands	Null	Null	0.31819
283	WOM	Mixed Woodland	Null	Null	0.028064
284	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.012352

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
285	SWM	Mixed Swamp	Lorne Beach Swamp	Official Plan – Locally Significant Wetland, Official Plan – Significant Woodland, MNR – Locally Significant Wetland	0.028508
286	THD	Deciduous Thicket	Null	Null	0.008893
287	CGL	Constructed Green Lands	Null	Null	0.011876
288	CGL	Constructed Green Lands	Null	Null	0.004241
289	MEM	Mixed Meadow	Null	Null	0.296986
290	SBT	Treed Sand Barren and Dune	ANSI: Scott Point – Provincial Significance	MNR – ANSI: Life Science	0.235324
291	FOC	Coniferous Forest	Null	Official Plan – Significant Woodland	0.389646
292	SWC	Coniferous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.001772
293	OA–L	Open Aquatic – Lake	Lake Huron	MNR – Waterbody	0.013228
294	WOM	Mixed Woodland	Null	MNR – Woodland	0.220194
295	CGL	Constructed Green Lands	Null	Null	0.044804
296	WOD	Deciduous Woodland	Null	Null	0.019532
297	OA–R	Open Aquatic – River	Little Sauble River	MNR – Watercourse	0.070627
298	WOD	Deciduous Woodland	Null	Null	0.083007
299	THD	Deciduous Thicket	Null	Null	0.122152
300	TH	Thicket	Null	Null	0.0832
301	TH	Thicket	Null	Null	0.184073
302	AG	Agriculture	Null	Null	0.10716
303	CGL	Constructed Green Lands	Kin Huron Park	Official Plan – Parks	0.170708
304	WOM	Mixed Woodland	Null	Null	0.07131
305	WOM	Mixed Woodland	Null	Official Plan – Significant Woodland	0.065999
306	WOM	Mixed Woodland	Null	Null	0.024231
307	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.025278
308	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland. Official Plan – Significant Woodland	0.361381
309	CGL	Constructed Green Lands	Null	Null	0.014796
310	CSWMP	Constructed Storm Water Management Pond	Null	Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.909292

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
311	CGL	Constructed Green Lands	ANSI: Scott Point – Provincial Significance	MNR – ANSI: Life Science	0.293421
312	CGL	Constructed Green Lands	Null	Null	0.007452
313	WOM	Mixed Woodland	Null	Null	0.517485
314	CGL	Constructed Green Lands	Walking Trail	MNR – Unevaluated Wetland	0.081137
315	WOM	Mixed Woodland	Null	Null	0.060042
316	WOM	Mixed Woodland	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.496092
317	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.206752
318	SA–R	Shallow Aquatic – River	Penetangore River	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland, MNR – Waterbody, MNR – Watercourse	0.051807
319	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.003473
320	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.131054
321	MA	Marsh	Null	Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.109279
322	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.009549
323	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland, MNR – Unevaluated Wetland	3.994336
324	CGL	Constructed Green Lands	Cemetery	Null	2.483618
325	WOD	Deciduous Woodland	Null	Null	0.497591
326	CGL	Constructed Green Lands	Kincardine Soccer Fields	Official Plan – Parks	1.411111
327	WOD	Deciduous Woodland	Null	Null	0.168769
328	MA	Marsh	Null	Official Plan – Unevaluated Wetland, MNR – Unevaluated Wetland	0.028829
329	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.681632
330	OA–R	Open Aquatic – River	Penetangore River	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.049086

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
331	OA–R	Open Aquatic – River	Penetangore River	Official Plan – Significant Woodland, MNR – Waterbody, MNR – Watercourse	0.245885
332	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.119408
333	FOD	Deciduous Forest	Null	Null	4.936783
334	THC	Coniferous Thicket	Null	Null	1.976205
335	WOC	Coniferous Woodland	Null	Null	3.461827
336	MAM	Meadow Marsh	Null	MNR – Unevaluated Wetland	2.341385
337	TH	Thicket	Null	Null	1.668818
338	AG	Agriculture	Null	Null	0.123868
339	WOC	Coniferous Woodland	Null	Null	10.452789
340	SWD	Deciduous Swamp	Null	MNR – Unevaluated Wetland	0.200425
341	TAGM1	Coniferous Plantation	Null	Null	2.089135
342	SWD	Deciduous Swamp	Null	MNR – Unevaluated Wetland	0.4436
343	SWD	Deciduous Swamp	Null	MNR – Unevaluated Wetland	0.30121
344	TAGM1	Coniferous Plantation	Null	Null	0.319342
345	TAGM1	Coniferous Plantation	Null	Null	0.47642
346	SWD	Deciduous Swamp	Null	MNR – Unevaluated Wetland	0.433024
347	WOD	Deciduous Woodland	Null	Official Plan – Parks	0.169436
348	TAGM5	Fencerow	Null	Official Plan – Parks	0.013458
349	CGL	Constructed Green Lands	Null	Official Plan – Parks	0.296831
350	WOM	Mixed Woodland	Null	Null	0.152061
351	WOD	Deciduous Woodland	Geddes Park	Official Plan – Parks, Official Plan – Significant Woodland	0.069912
352	OA–R	Open Aquatic – River	Penetangore River, Geddes Park	Official Plan – Parks, Official Plan – Significant Woodland, MNR – Waterbody, MNR – Watercourse	0.303106
353	OA–R	Open Aquatic – River	Penetangore River, Geddes Park	Official Plan – Parks, MNR – Waterbody, MNR – Watercourse	0.050361
354	WOD	Deciduous Woodland	Geddes Park	Official Plan – Parks, Official Plan – Significant Woodland	0.452393
355	WOD	Deciduous Woodland	Geddes Park	Official Plan –Parks	0.128805

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
356	WOD	Deciduous Woodland	Geddes Park	Official Plan – Parks, Official Plan – Significant Woodland	0.746794
357	FOD	Deciduous Forest	Null	Official Plan – Significant Woodland	0.476137
358	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.527059
359	SWC	Coniferous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.062576
360	WOD	Deciduous Woodland	Null	Official Plan – Significant Woodland	0.526733
361	CGL	Constructed Green Lands	Null	Null	0.280456
362	ME	Meadow	Null	Official Plan – Linkages	0.028186
363	SA–R	Shallow Aquatic – River	Null	Official Plan – Linkages	0.012773
364	ME	Meadow	Null	Official Plan – Significant Woodland	0.000413
365	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.017398
366	SA–R	Shallow Aquatic – River	Null	Official Plan – Significant Woodland	0.000266
367	ME	Meadow	Null	Official Plan – Significant Woodland	0.001077
368	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.200534
369	CGL	Constructed Green Lands	Null	Null	0.286325
370	CGL	Constructed Green Lands	Reunion Park	Official Plan – Parks	3.414088
371	CGL	Constructed Green Lands	Null	Null	0.640077
372	SA–P	Shallow Aquatic – Pond	Null	Null	0.377297
373	THD	Deciduous Thicket	Null	Null	0.435096
374	FOD	Deciduous Forest	Null	Null	0.467669
375	SWD	Deciduous Swamp	Null	MNR – Unevaluated Wetland	0.660155
376	FOD	Deciduous Forest	Null	Null	15.673051
377	WOD	Deciduous Woodland	Null	Null	0.944747
378	ME	Meadow	Null	Null	0.074758
379	FOM	Mixed Forest	Null	Null	1.223285
380	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland, MNR – Unevaluated Wetland	0.092957

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
381	CGL	Constructed Green Lands	Mystic Cove Trail	Null	0.034266
382	FOC	Coniferous Forest	Null	Official Plan – Significant Woodland	8.103555
383	CGL	Constructed Green Lands	Mystic Cove Trail	Null	0.76089
384	TAGM5	Fencerow	Null	Null	0.607043
385	CGL	Constructed Green Lands	Tiverton and District Sports Complex	Official Plan – Parks	5.367196
386	TAGM5	Fencerow	Tiverton and District Sports Complex	Official Plan – Parks	0.153598
387	SWM	Mixed Swamp	Davidson Centre and Lions Park	Official Plan – Parks, Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.742143
388	CGL	Constructed Green Lands	Davidson Centre and Lions Park	Official Plan – Parks	0.094218
389	SWM	Mixed Swamp	Davidson Centre and Lions Park	Official Plan – Parks, Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.532589
390	CGL	Constructed Green Lands	Davidson Centre and Lions Park	Official Plan – Parks	0.557219
391	CGL	Constructed Green Lands	Davidson Centre and Lions Park	Official Plan – Parks	6.532073
392	CGL	Constructed Green Lands	Davidson Centre and Lions Park	Official Plan – Parks	0.151474
393	FOM	Mixed Forest	Davidson Centre and Lions Park	Official Plan – Parks, Official Plan – Significant Woodland	8.763322
394	WOM	Mixed Woodland	Davidson Centre and Lions Park	Official Plan – Parks, Official Plan – Significant Woodland	1.68248
395	CGL	Constructed Green Lands	Helliwell Park	Official Plan – Parks	1.094189
396	CGL	Constructed Green Lands	Helliwell Park	Official Plan – Parks	0.026512
397	SWD	Deciduous Swamp	Helliwell Park	Official Plan – Parks, Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.143317
398	CGL	Constructed Green Lands	Helliwell Park	Official Plan – Parks	0.232954
399	SWM	Mixed Swamp	Helliwell Park	Official Plan – Parks, Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.061549
400	CGL	Constructed Green Lands	Helliwell Park	Official Plan – Parks	0.019853
401	CGL	Constructed Green Lands	Helliwell Park	Official Plan – Parks	0.115248
402	SWM	Mixed Swamp	Helliwell Park	Official Plan – Parks, Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.111042
403	CGL	Constructed Green Lands	Helliwell Park	Official Plan – Parks, Official Plan – Significant Woodland	0.008257
404	MEM	Mixed Meadow	Alps Park	Official Plan – Parks, MNR – Unevaluated Wetland	0.579497

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
405	MEM	Mixed Meadow	Alps Park	Official Plan – Parks, Official Plan – Significant Woodland	0.007954
406	MAS	Shallow Marsh	Alps Park	Official Plan – Parks, Official Plan – Unevaluated Wetland, MNR – Unevaluated Wetland	0.154755
407	SWD	Deciduous Swamp	Alps Park	Official Plan – Parks, Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.21343
408	WOD	Deciduous Woodland	Alps Park	Official Plan – Parks, Official Plan – Significant Woodland	0.167537
409	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.007559
410	WOM	Mixed Woodland	Null	Official Plan – Significant Woodland	0.042655
411	MEM	Mixed Meadow	Null	Null	0.048767
412	THD	Deciduous Thicket	Null	Null	1.011552
413	MEM	Mixed Meadow	Null	Null	0.29344
414	CGL	Constructed Green Lands	Null	Null	0.143199
415	TAGM5	Fencerow	Null	Null	0.188141
416	CGL	Constructed Green Lands	Patterson Park	Official Plan – Park	0.168656
417	WOD	Deciduous Woodland	Null	Null	0.098615
418	CGL	Constructed Green Lands	Null	Null	0.51063
419	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.057975
420	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.00036
421	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.000914
422	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.006542
423	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.001818
424	WC	Watercourse	Kincardine River	MNR – Watercourse	0.008433
425	WC	Watercourse	Kincardine River	MNR – Watercourse	0.005228
426	WC	Watercourse	Kincardine River	MNR – Watercourse	0.015031
427	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.002371
428	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.0026
429	WC	Watercourse	Kincardine River	MNR – Watercourse	0.02412
430	WC	Watercourse	Kincardine River	MNR – Watercourse	0.015807
431	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.004449

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
432	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.003959
433	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.001787
434	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.007599
435	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.030891
436	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.002576
437	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.001919
438	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.009335
439	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.033908
440	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.001727
441	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.001736
442	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.00356
443	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.006039
444	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.000984
445	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.03238
446	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.021725
447	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.00369
448	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.001371
449	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.005246
450	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.004044
451	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.008091
452	OA–L	Open Aquatic – Lake	Null	Null	0.040086
453	SHO	Open Shoreline	Null	Null	0.04047
454	SHO	Open Shoreline	Null	Null	0.020858
455	CGL	Constructed Green Lands	Beach	Null	0.018324
456	MEM	Mixed Meadow	Null	Null	0.016259
457	SA–R	Shallow Aquatic – River	Little Sauble River	MNR – Watercourse	0.023685
458	SHO	Open Shoreline	Null	Null	0.115094
459	CGL	Constructed Green Lands	Null	Null	0.09814
460	SHO	Open Shoreline	Null	Null	0.01605
461	CGL	Constructed Green Lands	Dunsmoor Park	Official Plan – Parks	1.424419
462	SHO	Open Shoreline	Dunsmoor Park	Official Plan – Parks	0.210161

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
463	TAGM5	Fencerow	Null	Null	0.029911
464	CGL	Constructed Green Lands	Null	Null	0.012709
465	WOM	Mixed Woodland	Null	Null	0.110407
466	OA–R	Open Aquatic – River	North Penetangore River	MNR – Waterbody, MNR – Watercourse	0.136359
467	TAGM5	Fencerow	Null	Null	0.107255
468	SA–P	Shallow Aquatic – Pond	Null	Null	0.262491
469	SA–P	Shallow Aquatic – Pond	Null	Null	0.104002
470	SA–P	Shallow Aquatic – Pond	Null	Null	0.145928
471	WC	Watercourse	Contains a drainage ditch	Null	0.005971
472	CGL	Constructed Green Lands	Huron Ridge	Official Plan – Parks	0.467901
473	WOD	Deciduous Woodland	Null	Null	0.442501
474	CGL	Constructed Green Lands	Null	Null	0.985505
475	CGL	Constructed Green Lands	Null	Null	0.002636
476	WOD	Deciduous Woodland	Huron Ridge	Official Plan – Parks	0.260763
477	ME	Meadow	Null	Official Plan – Significant Woodland, MNR – Waterbody, MNR – Watercourse	0.034728
478	WC	Watercourse	Penetangore River	MNR – Watercourse	0.004816
479	OA–R	Open Aquatic – River	Penetangore River	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland, MRN – Watercourse, MNR – Waterbody	0.557313
480	SWD	Deciduous Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.194099
481	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland, MNR – Waterbody, MNR – Watercourse	0.143323
482	SWM	Mixed Swamp	Null	Official Plan – Significant Woodland	0.244891
483	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.053467
484	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.012043
485	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.054022
486	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.042084

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
487	SWM	Mixed Swamp	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.149175
488	MAS	Shallow Marsh	Null	Official Plan – Unevaluated Wetland, Official Plan – Significant Woodland	0.105408
489	SA–R	Shallow Aquatic – River	Null	Null	0.092301
490	ME	Meadow	Null	Null	0.015123
491	FOC	Coniferous Forest	Null	Null	0.067861
492	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.020355
493	WC	Watercourse	Unnamed Watercourse	MNR – Watercourse	0.037857
494	SWM	Mixed Swamp	Null	Null	0.033663
495	SWM	Mixed Swamp	Null	Null	0.117668
496	OA–R	Open Aquatic – River	Null	MNR – Watercourse	2.475575
497	WOM	Mixed Woodland	Null	Null	0.128544
498	MAS	Shallow Marsh	Null	Null	0.53862
499	SWC	Coniferous Swamp	Null	Null	0.31013
500	SWD	Deciduous Swamp	Null	Null	0.183113
501	OA–R	Open Aquatic – River	Null	MNR – Watercourse	0.028691
502	WOD	Deciduous Woodland	Null	MNR – Woodland	0.037698
503	OA–L	Open Aquatic – Lake	Null	Null	0.02661
504	SHO	Open Shoreline	Null	Null	0.056381
Null	CV	Constructed	Municipal Airport	Null	58.554789
Null	CV	Constructed	Null	Null	0.125953
Null	CV	Constructed	Null	Null	0.924269
Null	CV	Constructed	Null	Null	0.823738
Null	CV	Constructed	Null	Null	0.146607
Null	CV	Constructed	Null	Null	0.024984
Null	CV	Constructed	Null	Null	0.219112
Null	CV	Constructed	Null	Null	0.10445
Null	CV	Constructed	New Residential Development	Official Plan – Significant Woodland	0.970915
Null	CV	Constructed	Null	Null	0.025176
Null	CV	Constructed	Null	Null	0.01643
Null	CV	Constructed	Null	Null	0.092779

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
Null	CV	Constructed	Null	Null	0.003439
Null	CV	Constructed	Null	Null	0.088859
Null	CV	Constructed	Null	Null	0.01286
Null	CV	Constructed	Water Treatment Lagoons	MNR – Waterbody	15.895992
Null	CV	Constructed	Null	Null	0.048483
Null	CV	Constructed	Null	Null	0.082796
Null	CV	Constructed	Null	Null	0.004877
Null	CV	Constructed	Null	Null	0.745996
Null	CV	Constructed	Null	Null	0.106207
Null	CV	Constructed	Residential Lawn	Null	0.01603
Null	CV	Constructed	Null	Null	0.358125
Null	CV	Constructed	Null	Null	0.040469
Null	CV	Constructed	Null	Null	0.005574
Null	CV	Constructed	Golf Course	Null	0.11305
Null	CV	Constructed	Null	Null	0.532188
Null	CV	Constructed	Null	Null	1.420022
Null	CV	Constructed	Null	Null	0.091975
Null	CV	Constructed	Null	Null	0.042913
Null	CV	Constructed	Null	Null	1.069976
Null	CV	Constructed	Appears that residential owners have built their yard into the City parcel	Null	0.170097
Null	CV	Constructed	Appears that residential owners have built their yard into the City parcel	Null	0.028913
Null	CV	Constructed	Appears that residential owners have built their yard into the City parcel	Null	0.103402
Null	CV	Constructed	Null	Official Plan – Significant Woodland	0.006971
Null	CV	Constructed	Appears that residential owners have built their yard into the City parcel	Null	0.048908
Null	CV	Constructed	Null	Null	1.38661
Null	CV	Constructed	Null	Null	0.016567
Null	CV	Constructed	Legion Park	Official Plan – Parks	0.207962

Natural Asset ID	ELC Code	Natural Asset Type	Notes	Corresponding Designation	Area (ha)
Null	CV	Constructed	Appears that residential owners have built their yard into the City parcel	Null	0.030395
Null	CV	Constructed	Appears that residential owners have built their yard into the City parcel	Null	0.002921
Null	CV	Constructed	Appears that residential owners have built their yard into the City parcel	Null	0.260507
Null	CV	Constructed	Null	Null	0.072575
Null	CV	Constructed	Null	Null	0.117496
Null	CV	Constructed	Electrical Station	Null	0.043374
Null	CV	Constructed	Null	Null	0.342211
Null	CV	Constructed	Null	Null	0.073942
Null	CV	Constructed	Null	Null	0.004176
Null	CV	Constructed	Residential	Null	0.025849
Null	CV	Constructed	Residential	Null	0.121775
Null	CV	Constructed	Null	Null	0.037895
Null	CV	Constructed	Null	Null	1.533917
Null	CV	Constructed	Null	Null	12.295142
Null	CV	Constructed	Null	Null	0.09076
Null	CV	Constructed	Null	Null	0.214731
Null	CV	Constructed	Tiverton and District Sports Complex	Official Plan – Parks	1.706115
Null	CV	Constructed	Null	Null	0.193853
Null	CV	Constructed	Dunsmoor Park	Official Plan – Parks	0.064298
Null	CV	Constructed	Null	Null	0.015036
Null	CV	Constructed	Null	Null	0.117508
Null	CV	Constructed	Appears that residential owners have built their yard into the City parcel	Null	0.178422
Null	CV	Constructed	Null	Null	0.010869

Appendix B

Natural Asset Risk Tables

Table B-1: Likelihood of Failure

Threats	Woodlands, Forests and Plantations	Meadows and Thickets	Swamps	Marshes	Watercourses and Rivers	Lakes and Shorelines	Natural Ponds	Sand Barrens and Dunes	Agriculture and Fencerows	Constructed Green Lands	Constructed Storm Water Management Ponds
Invasive Species	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pests and Disease	Yes	Yes	Yes	Yes	No	Yes	Yes		Yes		
Encroachments/ Disturbances	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Yes	No
Overuse/ Inappropriate Use	No	No	No	No	Yes	Yes	Yes	No	No	No	No
Contamination	No	No	No	No	Yes	Yes	Yes	No	No	No	No
Drought	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Construction Impacts	No	No	No	No	No	No	No	No	No	No	No
Flooding	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Erosion and Sedimentation	No	No	No	No	Yes	Yes	Yes	Yes	No	No	Yes
Extreme Wind	Yes	No	Yes	No	No	No	No	No	Yes	Yes	No
Ice Storms	Yes	No	Yes	No	No	No	No	No	Yes	Yes	No
Extreme Heat	No	No	No	No	No	No	No	No	Yes	No	No
Fire	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	No
Total Interactions	**7**	**5**	**7**	**4**	**5**	**6**	**6**	**5**	**8**	**7**	**5**
Likelihood of Failure	54%	38%	54%	31%	38%	46%	46%	38%	62%	54%	38%
Rating	**5**	**4**	**5**	**4**	**4**	**4**	**4**	**4**	**5**	**5**	**4**

Table B-2: Consequence of Failure

Natural Assets	Low	Moderate	High
Woodlands, Forests and Plantations	No	Yes	No
Meadows and Thickets	Yes	No	No
Swamps	No	Yes	No
Marshes	No	Yes	No
Watercourses and Rivers	No	No	Yes
Lakes and Shorelines	No	No	Yes
Natural Ponds	No	Yes	No
Sand Barrens and Dunes	No	No	Yes
Agriculture and Fencerows	No	Yes	No
Constructed Green Lands	No	No	Yes
Constructed Storm Water Management Ponds	No	No	Yes

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