



Valens Lake Conservation Area Master Plan 2019

FINAL – April 2020



A Healthy Watershed for Everyone



Prepared by: Hamilton Region Conservation Authority (HCA)
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1.0 APPROVAL STATEMENT

We are pleased to approve the Valens Lake Conservation Area Master Plan as the official policy document for the management and development of this conservation area. This Master Plan supports the current Hamilton Region Conservation Authority's (HCA) Strategic Plan.

This plan reflects HCA's Vision for a healthy watershed for everyone and Mission to lead in the conservation of our watershed and connect people to nature.

Moving forward over the next ten years this plan will help guide the development and operation of the conservation area in support of these goals.

Lisa Burnside
Chief Administrative Officer
Hamilton Region Conservation Authority

Date

Councillor Lloyd Ferguson
Chair, Board of Directors
Hamilton Region Conservation Authority

Date



2.0 PREFACE

The Valens Lake Conservation Area Master Plan is the guiding policy document for the development and management of this conservation area which is owned and administered by the Hamilton Region Conservation Authority (HCA). The recommendations in this Master Plan are intended to help provide direction and guidance for sustainable management and operation of Valens Lake Conservation Area (Valens) over the next ten years.

This Master Plan was developed by HCA staff utilizing in-house expertise and resources, with a public consultation process to receive input from stakeholders and the public as follows:

Phase 1 Background

Background review was initiated January 2019 with the HCA executive team review of the work plan, engagement of staff, collection of mapping information, and gathering information through staff meetings. This phase was completed April 2019 with presentation of an information report to the HCA Conservation Advisory Board.

Phase 2 Inventory

Inventory was completed October 2019 with the collection and assembly of natural areas field surveys and mapping information, ecological reports, trail counter data, and visitor surveys. Visitor surveys were conducted by staff over the summer months, both in the conservation area and on-line through the HCA website. HCA's marketing staff assisted on social media to manage the surveys and release public information announcements. Public information booths were operated by staff at the campground on the Victoria long weekend and the day use beach area on the Civic long weekend to engage and listen to the visitors, share information on the plan, and respond to questions.

Phase 3 Concepts

Concepts in this plan were completed in-house by HCA staff and refined further from public and stakeholder input. Staff professional expertise and experience, plus lessons learned from operating Valens for decades helped inform this plan. Facilitated workshop sessions were held with staff covering site concept planning, analyzing and assessing site activities, evaluating recreation trends, and reviewing financial sustainability in order to update the concept plans. All the maps in this plan were presented at a public information meeting September 2019 at the Valens Community Centre. At all Phase 2 and 3 public meetings, members of the public interested in reviewing the draft plan were invited to join the stakeholders list to provide further comments in Phase 4.

Phase 4 Summary

Finalizing the draft Master Plan included reviews of the compiled draft plan by staff, stakeholders, and board advisory members. The draft plan was posted online for public review and comment. The final draft document was compiled after public comment, presented to the Conservation Advisory Board and ultimately adopted by the HCA Board of Directors.

3.0 EXECUTIVE SUMMARY

3.1 Introduction

Valens Lake Conservation Area is a 335-hectare property owned and managed by the Hamilton Region Conservation Authority located at the north end of the watershed near the village of Valens, in Flamborough. The main feature of the area is the Valens reservoir but also contains natural woodlands, plantation forests, provincially significant wetlands, meadow areas, drumlins and cultural heritage features, both pre-existing and relocated. Valens supports camping on both electrical and non-electric sites, group camping, and trailer camping. Day use picnicking and swimming facilities, as well as recreational trails round out this all-inclusive conservation area.

HCA acquired the majority of properties that make up Valens today during the 1960's. The Spencer Creek Conservation Authority (now HCA) purchased the original land parcels to create the Valens reservoir, and the site was opened as a public day-use facility in 1968.



3.2 Goals

This Master Plan outlines the long-term goals for conservation and land management at Valens, and is intended to be a living document that will be updated completely in ten years' time.

This plan supports the following goals as outlined in HCA's current strategic plan:

Vision

- A healthy watershed for everyone.

Mission

- To lead in the conservation of our watershed and connect people to nature.

Commitment and Corporate Values

- Provide excellent customer service and a solution-oriented approach.
- Be accountable, transparent, and responsible in the use of resources.
- Embrace new technologies to help develop new ways of doing business and foster innovation.
- Promote teamwork internally and externally to achieve common goals, support existing relationships and build new partnerships.
- Maintain trust, act with integrity, and treat others with respect.
- Value knowledge to continually learn and improve, in an effort to achieve best solutions.

Organizational Excellence

- Ensure corporate and financial viability and the HCA's relevance in the community.
- Identify opportunities to engage the community, adjacent landowners and Indigenous Peoples.

Water Management

- Protect the watershed for people, property, flora and fauna, and natural resources through flood and erosion control, water quality programs, low flow augmentation and adaptation strategies to adapt to changing climatic conditions.

Natural Heritage Conservation

- Conservation, restoration and enhancement of watershed natural areas and ecology.
- Continue on-going ecological restoration projects and monitoring programs.
- Identify invasive species strategies and natural heritage plans in the Master plan.

Conservation Area Experience

- Provide high quality, diverse conservation areas that promote outdoor recreation, health, and well-being and strengthen public awareness of the importance of being in

or near our conservation areas.

- Update and develop Master and management plans, and implement priorities to further enhance conservation areas for current and future generations.

Education and Environmental Awareness

- Provide outdoor learning experiences for students, teachers and the community, increasing knowledge and awareness of the value of our environment and heritage.



3.3 Objectives

The goals and objectives in the previous Master Plan have been assessed, and through consultation and analysis of current operations, the HCA supports the following long-term objectives for Valens:

1. To conserve and protect natural areas while providing recreational opportunities for visitors to enjoy, appreciate, and learn about the natural environment.
2. To protect and manage environmentally significant areas.
3. To provide camping and day use facilities that offer visitors of all ages and abilities a high-quality recreational experience.
4. To sustain year-round facilities while minimizing long term operating costs.
5. To offer sustainable programs for visitors, groups and events.

3.4 Key Items

Through consultation with HCA staff, visitors and stakeholders, the following key items were identified and are addressed in this Master Plan:

Resource Management

- Designate zones in this plan for the protection of environmentally sensitive areas.
- Conduct natural areas inventories and identify habitat improvement priorities.
- Consider recommendations from the current forest management plan.
- Identify and provide recommendations for invasive species management.
- Identify and provide recommendations for restoration and monitoring projects.
- Review the agricultural land use agreements and determine management strategies for these areas.
- Assess the water resources: water quality, aquatic habitat, fisheries of the wetlands, streams, and reservoir. Provide recommendations to guide future management and protection of water resources.
- Hunting is not permitted on the property for public safety.
- Explore options to discourage Geese on the day use beach.

Administration and Workshop Area

- Reduce traffic congestion at the park entrance, while accommodating more visitors checking into the campground at the gatehouse.
- Review potential for enlargement of the gatehouse building for better customer service.
- The log house in the administration area is not accessible to the public. It has a historic link to the area and great potential for educational programs. Relocation of this building to the campground area is proposed in this plan.

Day Use Area

- Improve day use parking and trail access to support more visitors.
- Improve facilities for boat rentals, boat launching, swimming.
- Develop sustainable beach sand recovery practices.

Campground

- Improve campground infrastructure to support intended and anticipated campsite use, considering recreational trends in the camping market.
- Expand the campground west onto the newly acquired lands.
- Accommodate camping cabins in this plan.
- Invasive species control and tree planting to maintain natural appeal of campsites.



Trails

- Implement trail counters and provide visitor count data with this plan.
- Evaluate capital recommendations to improve the current trail system.

Programming

- Conduct visitor surveys and report on the results.
- Identify tourism and marketing trends anticipated for the life of this plan.
- Review the operational budgets and provide guidance for future programming.

Capital Infrastructure

- Review areas to be protected (for example ESA areas) in setting out the capital development zones in this plan.
- Identify capital development priorities and append a list for the next ten years with implementation recommendations.

3.5 Policy and By-Law Framework

Conservation areas owned and operated by the HCA are diverse in nature and spread across the HCA watershed. Valens is situated in the north end of the HCA watershed near the headwaters of Spencer Creek. A portion of the conservation area is in the watershed of the Grand River Conservation Authority as shown in Figure 2. See Section 4. for more information.

HCA has approached this Master Plan with the mind-set that other conservation areas in the HCA portfolio requiring Master Plans or updates to Master Plans will follow a consistent methodology. Although Valens is not located within the jurisdiction of the Niagara Escarpment Commission, the policies of the Niagara Escarpment Plan and guidelines of the Niagara Escarpment Parks and Open Space System (NEPOSS) 2012 planning manual have been observed in the preparation of this Master Plan.

HCA recognizes that certain public infrastructure such as utility corridors, trails, or transportation links may be required to cross conservation area lands. HCA policy for planning review and regulation of these features adheres to the *Conservation Authorities Act, R.S.O. 1990, C.27*. See Section 7 for more information.

The Valens Lake Conservation Area Master Plan adheres to policies of the Hamilton Conservation Authority, City of Hamilton, Grand River Conservation Authority, and provincial policy. The property is within the Greenbelt Plan, rural boundary of the City of Hamilton, and the watersheds of the Hamilton Conservation Authority and the Grand River Conservation Authority. HCA will consult with outside agencies, and obtain the required approvals and permits when implementing projects flowing from this Master Plan.

3.6 Master Plan Zones

This Master Plan follows the NEPOSS planning manual and identifies six land use zones for Valens. These zones are intended to help guide future planning, development, and management of the conservation area. The zone boundaries are shown in more detail in *Appendix 1. – Conservation Area Zones Map 2*.

Zones are intended to fulfill a variety of functions in the conservation area, including the following as outlined in the current NEPOSS manual:

- Identification and recognition of the features and attributes.
- Protection of key natural heritage features and cultural heritage features and functions.
- Segregation of conflicting recreational activities by directing activities with higher impacts to the least sensitive areas and low-impact activities to areas that are more sensitive, if appropriate.
- Delineation of areas on the basis of their requirements for management.
- Standardization of the approach to support management objectives and actions, based on a variety of features.
- Balancing of public use with the preservation of the natural environment.



There are six types of zones as follows:

- | | |
|-----------------------|----------------------------|
| ○ Nature Reserve Zone | ○ Cultural Heritage Zone |
| ○ Natural Zone | ○ Development Zone |
| ○ Access Zone | ○ Resource Management Zone |

The following sections briefly describe each zone. The tables in each section provide a zone description, management direction, and permitted uses, including types of development in each zone. All resource, recreational, and facility development uses are subject to Canadian legislation and policies governing public lands and conservation areas, as well as the resource management policies identified in Section 7.

Appendix 7 contains the natural inventory species lists from background research and field work completed for the preparation of the Master Plan. In this Master Plan, “species at risk” means species listed by the MECP or Government of Canada as threatened, endangered, extirpated or extinct in Ontario including:

- Species designated as endangered, threatened or special concern by the Species at Risk Act (federal) via the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and listed on Schedule 1.
- Species designated as endangered threatened, or special concern by the Endangered Species Act (provincial) via the Committee on the Status of Species at Risk in Ontario (COSSARO)



Nature Reserve Zone

Nature reserve zones include significant earth and life science features which require management distinct from that in adjacent zones, as well as a protective buffer with an absolute minimum of development.

Valens' nature reserve zones contain provincially significant wetlands, water courses, the reservoir, and wetland habitat.

Table 1. Nature Reserve Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Nature Reserve	Include significant natural heritage features or areas that require careful management to ensure the long-term protection of natural heritage features. Intended to protect in perpetuity features and values of selected life and earth science areas such as: ➤ Habitat of endangered, threatened, and rare species or species of special concern. ➤ Wildlife and fish habitat. ➤ Hydrological systems (e.g. streams, wetlands, ponds) ➤ Woodlands ➤ ANSIs ➤ Significant landforms or escarpment features	These areas are predominantly natural and should contain naturally functioning ecosystems. This zone is intended to protect natural heritage features in the long-term.	To protect, preserve, and rehabilitate identified natural heritage features, visitor uses are limited or restricted. Development is generally restricted to trails, necessary signs, interpretive facilities (where warranted), temporary research facilities and conservation practices.

Natural Zone

Natural zones include natural, cultural, and aesthetic landscapes in which minimum development is required to support low-intensity recreational activities.

Valens' natural zones are the natural woodland areas adjacent to the nature reserve zones.

Table 2. Natural Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Natural	Includes natural and high-quality natural settings, and aesthetic landscapes in which a minimum of development is permitted to support low to moderate intensity recreational activities.	The Natural Zone can function as a buffer between Development Zones and Historical or Nature Reserve Zones.	Low to moderate intensity recreational activities are permitted. A minimal level of development (e.g. trails, backcountry campsites, necessary signs and minimal interpretive facilities) is permitted to support low-intensity recreational activities.



Access Zone

Access zones serve as staging areas to support adjacent zones.

Valens' access zones are located at the main park entrance on Highway 97, service access and access to the dam from Valens Road, and service access/group camping access from the 10th Concession Road.

Table 3. Access Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Access	Serve as staging areas (e.g. trailheads, parking lots) where minimal facilities support the use the Nature Reserve Zones and relatively undeveloped Natural and Historical zones.	Access zones are intended to support the use of and access to adjacent zones.	Development may include minimal facilities to support Nature Reserve, Natural, and Historical Zones. Examples include roads, signs, trailheads, and parking lots.



Cultural Heritage Zone

Cultural heritage zones are intended to protect significant archaeological or cultural heritage features.

Valen's cultural heritage zones include the workshop area stone farmhouse under heritage designation, the stone house at Valens Road of historic interest, and the two-storey log house of historic interest moved to the property.

Table 4. Cultural Heritage Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Cultural Heritage	Include significant archaeological or cultural heritage features or areas that require management that will ensure the long-term protection of the significant features.	Management planning for archaeological or cultural heritage features may range from maintaining their present condition to restoring and/or reconstructing the site.	Development will include protection and interpretation of archaeological or cultural heritage features. Examples include interpretive, educational, research and management facilities, trails, signs and historical restorations or reconstructions.



Development Zone

Development zones provide the main access to the conservation area for the visitor.

Valen's development zone includes the main entrance area at Highway 97, all parking areas, day use area, campgrounds, picnic areas, service buildings and work areas for conservation area operations.

Table 5. Development Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Development	Development Zones provide the main access to the conservation area or open space, and facilities and services to support the recreational activities available. This type of zone may allow for the development of visitor and conservation area facilities.	A Development Zone is usually oriented to the provision of recreational opportunities that are suited to the natural character of the conservation area or open space and are conducted in an environmentally sustainable manner. This zone should have minimal negative impact on natural heritage features, cultural heritage features, the natural landscape or watersheds. Development Zones are not permitted within / inside Nature Reserves.	Development may include roads, parking lots and gates, beaches, picnic areas, campgrounds and commercial service facilities, and orientation, interpretive, educational, research, and maintenance facilities. Development of facilities must be designed and undertaken in a way that will minimize their environmental and visual impact.

Resource Management Zone

Resource management zones include areas managed to provide resource-related projects such as forest products, disturbed areas requiring restoration, and land that has a long-term resource agreement such as a managed forest.

Valen's resource management zones include the forest plantations, former agricultural lands, and active agricultural lands.

Table 6. Resource Management Zone

Zone	Description	Management Direction	Permitted Uses (subject to management planning)
Resource Management	Includes certain public lands that are managed primarily to provide resource-related benefits such as forest products, fish and wildlife, or flood control. Previously disturbed sites (e.g. old farm fields, abandoned quarries) where active measures are being taken to re-establish natural vegetation. May include land that has traditionally been managed under long-term resource agreements (e.g. forest management agreements or agricultural leases)	Resource Management Zones are sustainably managed for many diverse values such as wildlife, fisheries, forestry and outdoor recreation. Such zones may be places for experimenting with alternative resource management practices and developing a better understanding of ecosystem structures and functions in a scientifically sound manner. Should demonstrate exemplary conservation and stewardship. Should not be established in Nature Reserves.	These areas may be used to demonstrate ecologically sustainable resource management practices. Establishing permanent research plots for monitoring purposes (e.g. permanent sample plots for growth and yield studies) is encouraged in this zone. Water may be controlled for purposes related to flood protection, watershed management, or municipal water supply. Recreation uses in this zone are subject to HRCA policies and management planning.

3.7 Development Priorities

The capital development priorities and estimates of development costs for Valens over the next ten years are listed in *Appendix 2.* and shown in *Appendix 1.,* Map 4. Site Concept.

All development projects are to be reviewed annually for the life of this Master Plan, and the capital development priority list updated as necessary. Capital projects should not be started until a long-term strategy with timelines and costs for each project are clearly defined and sufficient resources are available to complete them. See Section 8.2 for further information.

Significant capital development for Valens over the next ten years falls within these three categories:

1. Replace Significant Park Features

These significant park features require ongoing repairs for public safety, are nearing or past the end of their life cycle, and are proposed to be replaced:

- Fishing Bridge
- Lookout Tower
- Reservoir Trail Bridges and Boardwalks



2. Add New Park Features

These capital projects are proposed to help serve a greater number of visitors, generate revenue, and improve customer service:

- Access improvements at the park entrance including road works to improve traffic flow, enhanced visitor parking for camping check-in, and gatehouse building expansion.
- New campground expansion onto the west lands.
- Relocation of the log cabin to the campground hub (camp store area) with associated site development for this area.
- Add a new off-road multi-use trail between the campground and day use area.

3. Enhance Existing Park Features

These capital projects are proposed to enhance existing park features and improve customer service:

- Double the area for trailer storage by expanding to the west.
- Relocate the boat rental operation to the day use beach.
- Improve the existing boat launch area.

- Improve day use parking areas.
- Improve the trail head area at the fishing bridge.
- Upgrade existing mown trails to formal trails
- Modify features and operations in the conservation area as necessary to deter geese presence and reduce conflicts with visitor activities, particularly at the day use beach area.



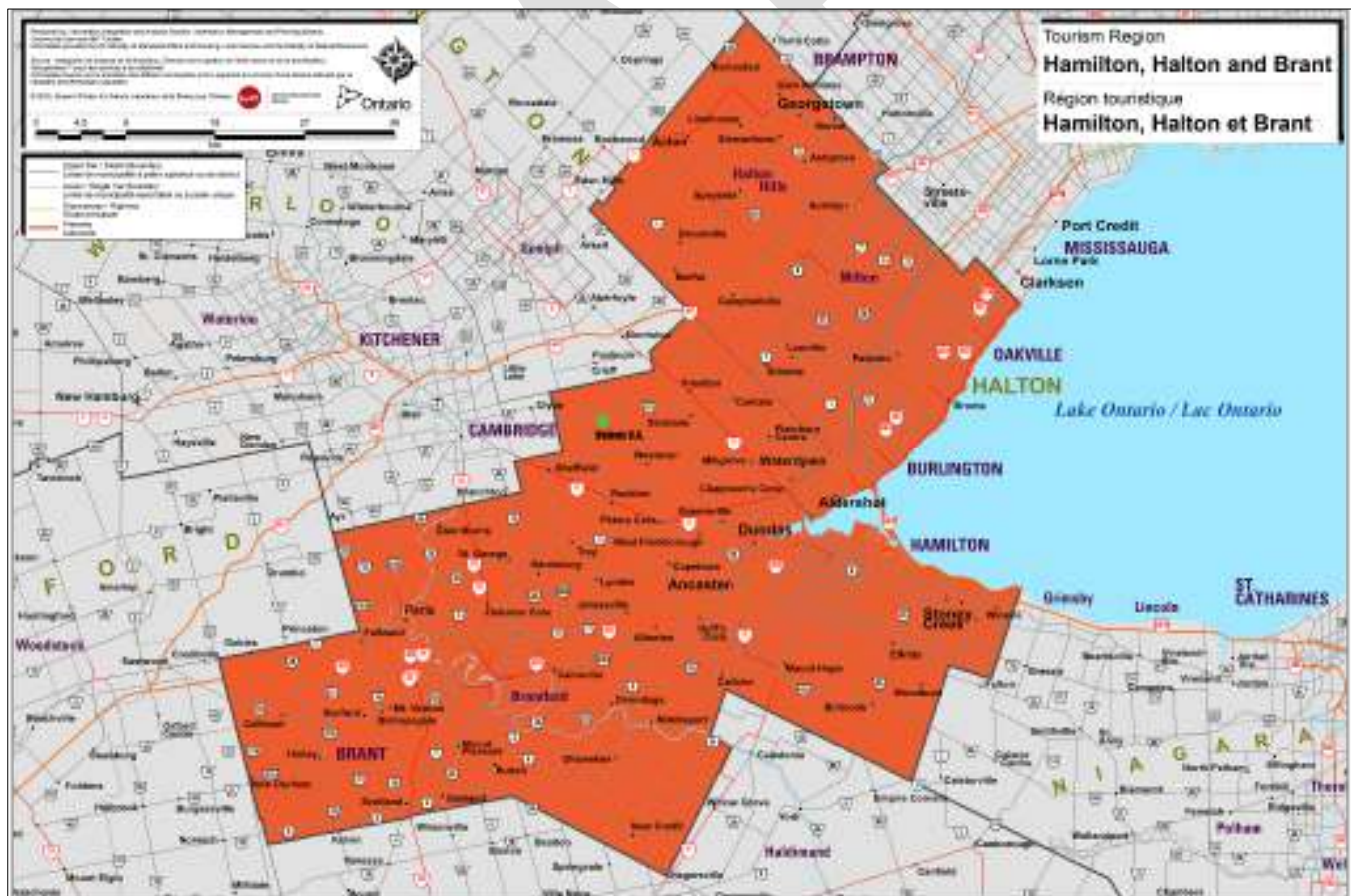
4.0 BACKGROUND

4.1 Study Area

Valens is located within the City of Hamilton near Puslinch. The main entrance to the park is at 1691 Regional 97 Rd on the north Side. Tenth Concession West forms the north Boundary and Valens Road the east boundary. On the east side of Valens Road there is about 0.5 hectares of flooded land. The surrounding countryside is essentially rural in character.

Valens is an important tourist attraction and family vacation destination within an easy day-trip of major urban centers in the Greater Toronto and Hamilton Region. Hamilton, Cambridge and Guelph are the largest nearby cities. Figure 1 shows the location of the conservation area in Tourism Region 3 established by the Ontario Ministry of Tourism, Culture and Sport. This region is marketed as the “Heart of Ontario” by the Hamilton Halton Brant Regional Tourism Association.

Figure 1: Tourism Region

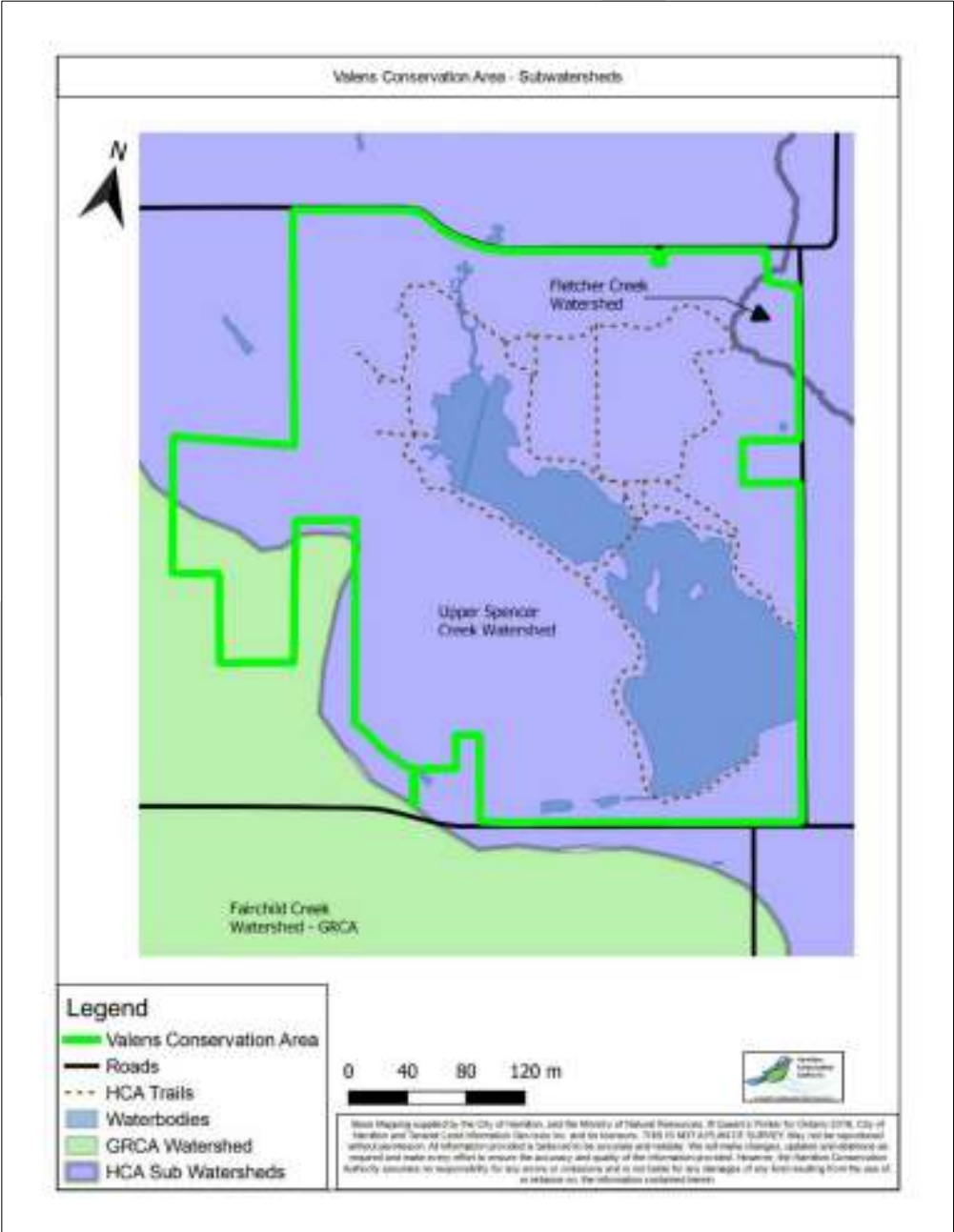


Map Source: Ontario Ministry of Tourism, Culture and Sport

During the preparation of this Master Plan two visitor surveys were distributed online and at the park. One survey targeted day-use visitors and another survey targeted camping. These public surveys ran from May to August 2019, results of the surveys are attached in *Appendix 5*. See Marketing section 6.5 for the survey analysis.

Valens is located within the Upper Spencer Creek and Fletcher Creek watersheds which are regulated by the Hamilton Conservation Authority, as well as the Fairchild Creek watershed which is regulated by the Grand River Conservation Authority. The study area and these sub-watersheds are shown in Figure 2.

Figure 2: Watersheds and Valens location Map

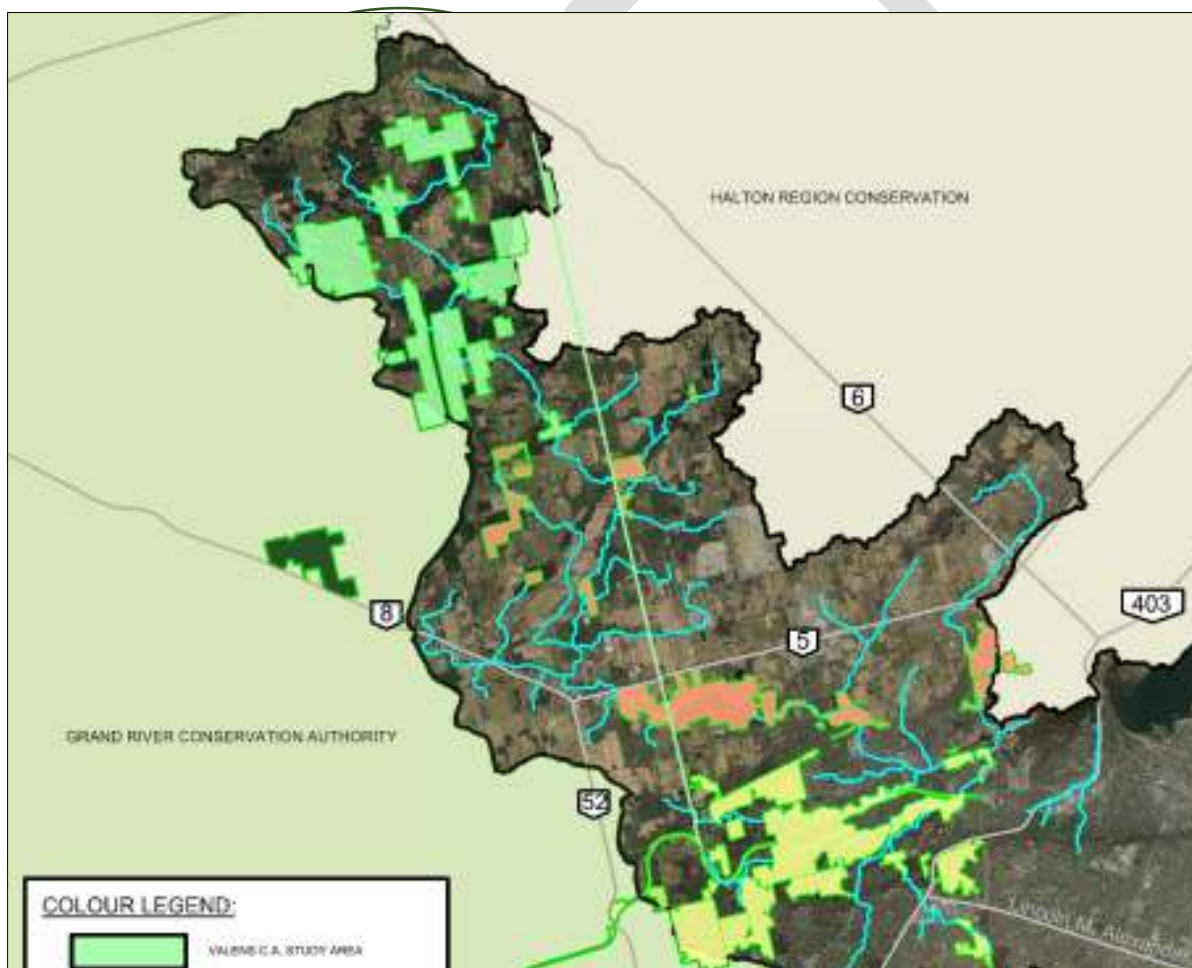


Source HCA

Development proposed for Valens will require review by the Hamilton Conservation Authority as well as the City of Hamilton (City) and the Grand River Conservation Authority (GRCA). The City and GRCA received and reviewed draft copies of this document and their comments have been incorporated.

Figure 3 shows the overall study area and HCA landholdings associated with Valens Lake Conservation Area. Beverly Swamp, Fletcher Creek Ecological Preserve, and the Lafarge Trail are located within this study area. Management plans for these areas are being updated in connection with this Master Plan. The study area boundary is based on grouping land holdings within sub-watershed areas, and is part of a ten-year strategy for reviewing HCA lands across the watershed. HCA staff are following this strategy to systematically glean valuable scientific data and site information from targeted study areas, and to use this information in the preparation of master and management plans.

Figure 3: Study Area – in HCA's 10 Year Master Plan and Management Plans Strategy



Source: Hamilton Conservation Authority

** Note: The Lafarge Trail management plan study area extends beyond the circle shown.

4.2 Property History

Valens is a 335-hectare conservation area within the City of Hamilton, operated by the HCA.

The original Valens land parcels were purchased by the Spencer Creek Conservation Authority (now HCA) in the early 1960's with the primary purpose of creating the Valens Reservoir to augment the summer flow through the Spencer Creek system during dry periods and provide limited flood control, as well as providing an opportunity for public outdoor recreation.

Construction of the dam was completed by 1966 and subsequent development of the property commenced with installation of the gatehouse, main roads, beach area and day use facilities. The property opened June 28, 1968 for day-use recreation.

Construction of the dam 1964



Filling the reservoir



Campsites were added in the early 1970's along with portions of the circular trail system in place to this day. The 140m (460ft) long fishing bridge across the reservoir was completed in 1977.



The first Master Plan was prepared in 1970 and subsequently updated in 1979 by HCA staff, providing good background information on the land acquisition and early planning and development of the conservation area. By 1988 a new Master Plan was completed by Dillon Consulting Engineers, Planners and Environmental Scientists. This plan proposed adding several features including camping cabins, camp store, an adventure play structure, converting the current farm buildings into an orientation complex with tea room facilities, relocating the workshop to the west side of the entrance area, and adding game courts and trails. A chlorinated swimming curtain was installed in 1973-74 for swimming at the beach area. However, this system was removed by 2010 for ecological and maintenance reasons and will not be re-instated. The overall intent in the early years of operation was to provide a diversity of recreation activities while protecting the natural resources and qualities of the property that attracted visitors.

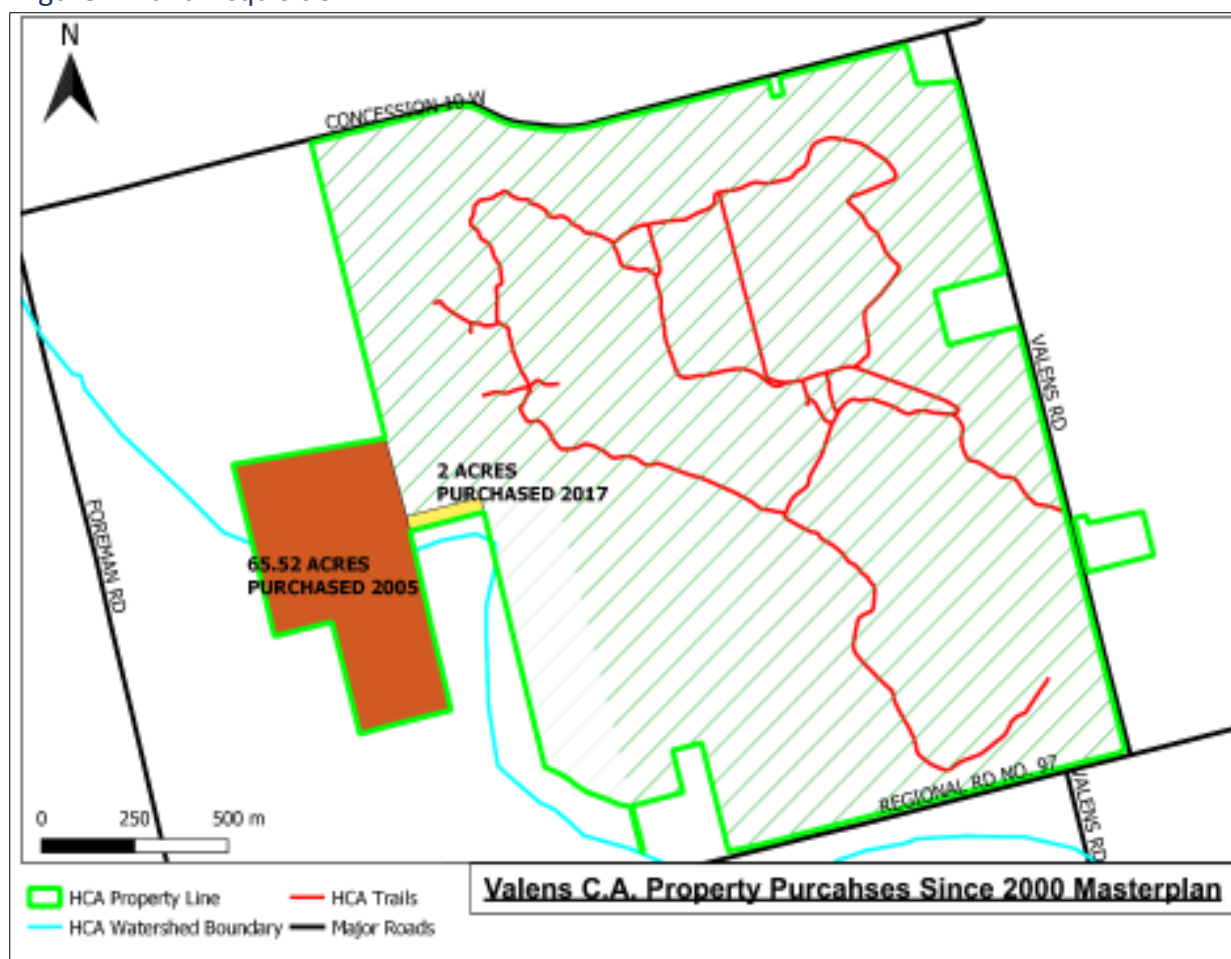
By the 1990's the campground saw an increase in popularity. More campsites were added, and electrical and water hookups began to be provided. Most summer weekends the camping facilities were at capacity, with the day use beach area seeing a steady increase in visitors. A few facilities were also added, such as play structures and a pavilion, but the major changes proposed in the 1988 Master Plan were not implemented. Over this decade with changes in fees and increased use, the property began to generate a profit.

By 2000 a revised Master Plan was once again prepared by HCA staff. This plan's goal was "to conserve and protect the valued natural areas while providing economically viable recreational facilities that encourage vacationers and day visitors to enjoy, appreciate and learn about the natural environment."

In 2005, 26.5 hectares of farmland and wetland was purchased to the west of the conservation

area for the purposes of future campground expansion and naturalization. In 2017 a 0.8-hectare strip of land was acquired to allow for an access road to be built to the new acreage with minimal disruption to the existing campgrounds. These acquisitions are shown in Fig. 5.

Figure 4. Land Acquisition



Source: Hamilton Conservation Authority

4.3 Planning and Development Controls

Valens is located in part lots 20, 21, 22, 23, 24 and 25 of Concession 9 and part of lot 22 Concession 10 of Beverly Township, Town of Flamborough which is now part of the city of Hamilton.

The Rural Hamilton Official Plan designates lands within Valens as Open Space or Agriculture (Schedules A and D). These lands are also identified as part of the Protected Countryside in the Greenbelt Plan, and as Core Areas and Linkages in the Greenbelt Natural Heritage System (Schedules A and B). City Official Plan and provincial policies for these lands are in place for protection of natural features, water features and their associated functions. New development or site alteration is regulated by these policies.

The City of Hamilton (City) Zoning boundaries for Valens are shown on Figure 6 and are as

follows:

- City of Hamilton comprehensive zoning for these lands is “Open Space (P4)” “Agriculture (A1)” and “Conservation/Hazard Land-Rural (P7, P8).”
- The Open Space (P4) Zone encompasses the west side of Valens Lake with the gatehouse, day use beach area, picnic areas and maintenance building. The Open Space (P4) Zone is also on the east side of the lake where there are group camping areas and plantation forests and open fields.
- The Agriculture Zone (A1) is on a portion of the newly acquired land parcels to the west of the conservation area. It contains fields used for agriculture. There also two slivers of A1 on the property. The one is near Regional Road 97 on the south side of the area, on what appears to be an old laneway. The second is on the north-west corner near 10th Concession.
- The Conservation/Hazard Land –Rural (P7) Zone applies to a large portion of the lands including the campground area and a large portion in the north-east quadrant.
- The Conservation/Hazard Land – Rural (P8) Zone applies to the wet portions on the site including the reservoir.

The City zoning regulations prescribe permitted uses, setbacks for buildings and parking areas, and the wetland areas as mapped by the Hamilton Conservation Authority.

The Grand River Conservation Authority regulates some areas within Valens. The Grand River Conservation Authority and City of Hamilton planning department have been consulted in the preparation of this Master Plan.

Figure 5. Valens Zoning Map



Source: City of Hamilton

4.4 Buildings

See Section 4.6 for historic buildings, and *Appendix 1. Map 2.* and *Map 6.* for building locations.

The original farm buildings on the property are located in the workshop area and at Valens Side road near the dam. The workshop area serves as the administration and maintenance headquarters for the conservation area. The stone Robson House is a designated heritage building and was formerly used as the superintendent's residence and office. This house is currently used as a rental residence, as well as the Valens Homestead near Valens Side road which is of historic interest. The Cook Cabin was moved to the workshop area in 1963 and is currently open only by appointment for heritage interpretation, tours, and research.

New building development commenced at Valens in 1966 with installation of a gatehouse, entrance sign, and change/concession building to prepare for the opening of the property June 28, 1968 for day-use recreation.

Campground building development began in the 1970's with the first washroom buildings, pump house, and picnic shelter. At the same time, the fishing bridge, boat house, and workshop were completed as the campground loops were developed. The furnishing of the Cook Cabin was also completed in the 70's by donations.

Additional site enhancements commenced in the 1980's with the building of the Powell Pavilion, renovations to the beach house, additional pit privies in the campgrounds, and the installation of two observation towers near the reservoir and campground. By 2006 the larger of these two observation towers was removed due to privacy concerns expressed by an adjacent landowner.

The 1990's saw continued increase in visitation, and by 1995 the original gatehouse was renovated and expanded for better customer service, adding the first computer system for electronic campsite reservations. HCA's first automated gate system was installed at Valens in 1996. The Powell Pavilion was enclosed with glass panels, and routine maintenance and repairs of all buildings was now becoming required in the annual operation plans. Towards the end of this decade the campground sewage system and infrastructure were being studied and future capital improvements being planned to accommodate campground expansion.



In 2000 the previous Master Plan was adopted setting out updated building plans for the conservation area that we see today. Site planning and design for the camping cabins commenced in 2013, these buildings are being constructed and set to open in 2020. A temporary camp store (trailer) was in place by 2003, the permanent camp store building followed in 2004. Campground washrooms and infrastructure were also improved in this

decade to keep pace with the campground development.

4.5 Physical Features

The 76-hectare Valens reservoir (full capacity) is the main physical feature. Maximum depth of the reservoir is 4.6 meters and the reservoir, wetlands and marshes within the area helps to maintain surface water quality and provide flow augmentation in the upper sections of the Spencer Creek watershed. The wooded wetlands and marsh at the north end of the reservoir are identified as Provincially Significant and act as a ground water recharge area.

Wetlands, woodlands through the campground area, and wooded swamp on the west side have been identified as local natural heritage Environmentally Significant Areas (ESA) in the Rural Hamilton Official Plan. These areas provide habitat to a number of significant species.

The topography is characterized by drumlin landforms. Soils are generally shallow on the remainder of the property.

A natural buffer of upland shrubs and cattail marsh has developed around the reservoir. The day use area contains manicured grass and shade trees. The campground is located within a mature forest plantation. Most of the north side of the reservoir has also been planted with conifers (mostly Scots and Red Pine) or is naturally regenerating. The forest plantations are to be managed as per HCA's 2018-2027 Managed Forest Plan.



4.6 Cultural Heritage

HCA recognizes that First Nations inhabited this area before European contact. Respect for the cultural heritage of Indigenous Peoples is supported in this Master Plan and HCA's Strategic Plan.

Written historical records for this area date back to 1834. In that year John Valens, an immigrant carpenter from Scotland, purchased the southern half of Lot 24, Concession 9 in the former Township of Beverly. In doing so, he became the first recorded settler into the lands north of the Beverly Swamp.

Valens constructed the first saw mill north of the swamp on the banks of the Spencer Creek, known in 1850 as Valens Creek. This saw mill was demolished in 1885 and replaced by a

steam generated mill, which was subsequently destroyed by fire in 1890. The Valens dam was constructed on the site of the initial saw mill.

Two years after his arrival, John Valens pioneered the cutting of a road south from Valens through the swamp. At the same time, an east-west road was constructed from Galt (now part of the City of Cambridge) to Freelon by the Township authorities. Valens Road was completed in 1836, while the Township road required ten more years of construction, passing 1 Km west of the Valens farmstead.

John Valens married in 1842 and built part of his stone home, the first of its kind, north of the swamp. After his death in 1894, the homestead was purchased by the McNeilly family in 1912 who, in turn, sold it to the Spencer Creek Conservation Authority (now HCA) in 1961. A member of the Valens family, the last to be born on the homestead, lived long enough to see the dam under construction.



4.7 Heritage Designation and Historic Buildings

The Ontario Heritage Act enables the City of Hamilton to protect and manage Ontario's cultural heritage resources. Part IV of the Act provides for municipal designation of individual properties as having cultural heritage value. Properties are designated by a municipal by-law, with reasons for designation or a description of heritage attributes which must be retained to conserve the cultural heritage value. Heritage property designation serves to: recognize the importance of a property to the community; identify and protect the property's cultural heritage value; encourage good stewardship and conservation; and promote knowledge and understanding about the property and the development of the community.

Valens contains one building with heritage designation – the Robson House; and one building with historic interest – the Valens Homestead.

The Robson House achieved heritage designation for both its historical and architectural importance. The home was built circa 1854 by William Robson and his wife Jane Valens, both of whom were members of the first families to settle in this part of Flamborough. This building situated in the current workshop area has been subjected to few alterations over the years. Notable exterior features of this simple, elegant building include an original stone kitchen wing; the two massive stone chimneys located on the kitchen and east



walls; and a finely preserved bake oven of beehive configuration. Notable interior features include interior woodwork and trim details particularly the fireplace mantles; interior window shutters; and the staircase with carved banister and newel post.

The stone and clapboard (now stucco) Valens Homestead at Valens Side road adjacent to the dam and reservoir is of historic interest. The home was built circa 1854 by John Valens and the interior of the house has been remodeled many times. Early pioneers used the west wing for their kitchen, until 1900 when an addition was added to become a ballroom, and later a room for the curing of meat. From 1900 to 1913 it at one time housed the local teachers' room. A portion of the house was also used as the post office up until 1913.



The Cook Cabin, constructed circa 1842 by George Cook, is thought to be one of the last of the two storey log cabins in the Hamilton region. The cabin was purchased in 1961 by the Spencer Creek Conservation Authority (now HCA), but the authority had no location to which the cabin could be moved. By 1963 the plans for the Valens dam had been completed, and a spot for the cabin was chosen on the Ferguson (formerly Robson) farm which had been purchased by the authority. In

1963 authority staff moved the cabin piece by piece 5.6 Km down Highway 97 and rebuilt it at its current location. During the reconstruction it was found necessary to replace the bottom log on all four sides, and the rotted first floor joists. A new stairway, side door, fire place, partitions, shingles, wooden eaves troughs, a dumb waiter, and new flooring over the old were installed. With donations the cabin was furnished in a style typical of the 1842 to 1885 period. The building is currently used for historic interpretation, research, and programming and open by appointment only.

4.8 Natural Areas

Valens natural areas include an Environmentally Significant Area (ESA), Provincially Significant Wetland and Significant Woodland, forest management area, and fish habitat. Valens contains a mix of vegetation including wetlands, forests, plantations, former agricultural fields that are naturalizing, and meadows. The reservoir encompasses 16% of the conservation area and is a central feature.

The conservation area and two additional woodlots, as noted in Section 5.13, contain ESA protected within the rural official plan for the City of Hamilton. All future development from this Master Plan is to follow the Master Plan zone guidelines outlined in Section 3.6 and will have to be reviewed with the City.

The agricultural fields at Valens include lands that are no longer being farmed, and lands that are actively farmed under a long-standing agreement with the current farmer. Agricultural fields are designated as resource management lands in this Master Plan, these fields have potential for ecological restoration once they are no longer farmed, or other compatible uses as noted in this plan.

The plantation forests at Valens are under HCA's Managed Forest Plan completed in 2017 and included in *Appendix 6*. As noted in Section 5.15 a comprehensive restoration plan for these lands that encourages natural regeneration, adds new plantings, and controls invasive species is recommended. Different types of forest management techniques could be implemented to demonstrate differences in habitat and regeneration such that visitors have an opportunity to observe and learn.

Fishing is a very popular activity at Valens, and fish habitat is an important natural resource. In order to ensure the resource remains viable, HCA staff have been and will continue to further study and monitor the lake for future fisheries resources management. See the fisheries assessment in Section 5.12 for more information.



5.0 NATURAL AREAS INVENTORY

5.1 Physiography and Topography

This study area is located in the southwestern portion of the Flamborough Plain physiographic region. This large natural area encompasses the central portion of the extensive, gently-sloping bedrock plain stretching from Rockton, north to Kirkwall, and east to Westover.

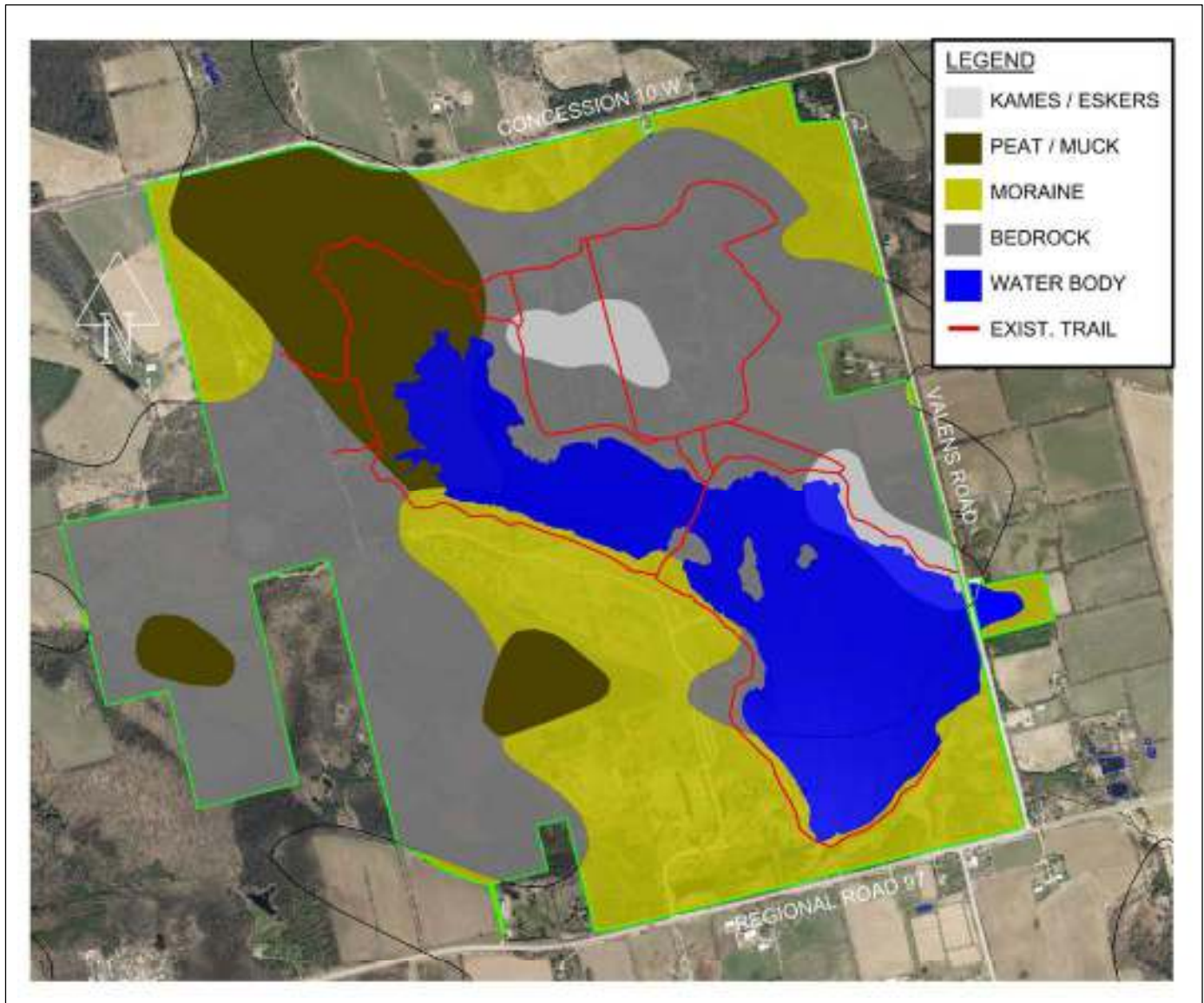
Topography surrounding the reservoir is typical of post-glacial and glacio-fluvial terrain. Features include raised shorelines, drumlins, eskers and moraines. Elevations range from 273m at the dam to heights of 290m in the northeastern corner and west of the campground. The intermediate knolls north and south of the reservoir rise to approximate heights of 283m. Wetlands occupy the low or poorly drained intervening areas and bedrock is close to the surface outside of these areas. See Figure 6 for more information.

5.2 Soil Composition

The following represents a brief description of the soils on site. The numerous soil types reflect the diverse geologic processes that have played a part in the formation of the area.

Guelph Loam:	A well-drained loam surrounds the reservoir, having a slope of roughly 10 to 15%. This soil is quite stoney.
Dumphries Loam:	A well-drained gravelly sand loam at the north and west portions of the site. The soils are moderately stoney.
Farmington Loam:	Well-drained till with less than 30cm of cover over bedrock. Slope ranges from between 2 and 5% and is particularly stoney. This soil is indicative of an aquifer recharge area and exhibits percolation rates in the range of 10 to 12 cm per hour.
London Loam:	An imperfectly drained moderately stoney loam at the south end of the site.
Killeen Loam:	An imperfectly drained very stoney loam.
Parkhill Loam:	A poorly drained loam that is moderately stoney.
Lily Loam:	A poorly drained loam till of sand and gravel that is moderately stoney.
Stream Course:	At the dam outlet, a stoney till with bedrock exposed in some areas.
Muck and Peat:	Poorly drained accumulations of organic material, roughly 0.3m or greater in depth.

Figure 6. Surficial Geology Map



Source: Hamilton Conservation Authority

5.3 Hydrology and Surface Drainage

The Valens Dam and Reservoir were designed primarily to augment the summer flow in Spencer Creek during periods of intense drought. The dam and reservoir also cause a slight delay in the transmission of a flood peak down through to the creek to reduce the downstream flooding during spring runoff or after major storms. Valens is located approximately 6.4 Km from the origin of Spencer Creek.

The Spencer Creek system is the longest regulated watercourse in HCA's jurisdiction. The headwaters of the main branches of the creek originate in the Galt Moraine west of the community of Crieff in Puslinch, Ontario. South of the Galt Moraine but north of the reservoir the creek and tributaries weave their way through a drumlin field sitting atop a Limestone Plain of the Guelph Formation. The upper reaches of the reservoir are composed of a wetland which

acts as a storage area by virtue of the peat and muck soils. The artificially constructed Valens reservoir is 76 hectares in size and approximately 1.6 Km in length flanked by Drumlins and abuts a portion of the Moffatt Moraine.

The rolled earth filled dam measures 121.9 m in length, is approximately 5.2m high and the peak elevation of 277m. The reservoir is relatively shallow with a maximum depth of 4.6m at the dam. During normal operating procedures, the reservoir recreation level 275m is maintained by allowing the appropriate overflow through to the concrete spillway. In the spring surface runoff and snow melt is retained in the reservoir. The reservoir levels off during the summer as water is slowly released to augment flow during drought conditions. By the fall and winter months the level of the reservoir is at the lowest point 274.1, to protect the dam from damage by ice breakup upstream.



The Beverly Swamp wetland just downstream of the reservoir acts as a recharge area for the watershed by holding water and allowing it to seep through the organic layers to the underlying bedrock where it lies close to the surface. From here the creek then winds its way a distance of over 30 Km to the marshy reaches of Cootes Paradise in Dundas.

5.4 Biophysical Inventory Methodology

The entire conservation area was surveyed by HCA ecology staff for flora, breeding birds and fauna as noted in Table 7. Ecological Land Classification was completed across the entire property and is shown on Map 1. in *Appendix 1*. Species lists are included in *Appendix 7*. Methodologies for these field studies are included below.



Table 7 Summary of Ecological Field Studies at Valens

Survey Type	Dates	
	Year	Day(s)
Floral Inventory	2018	May 8, 18, June 28
Breeding Bird Surveys	2018	June 7, 29
Frog Call Surveys	2014	April 19 and June 27
Ecological Land Classification	2014	Various dates June – Oct.
	2018	June 18, 25, 28, July 4
Fish Rescue at the Dam	2010	August 4
Stream Sampling	1973 1984 1993 1995 1998 2013	N/A (historic inventory data) N/A (historic inventory data) July 31 June 25 August 12 August 9
Shoreline Seine Surveys	2006 2008 2010 2012 2014 2016	June 21,24,26 and, July 26 June 1,15 and, July 13 May 24, 28 and, June 24 June 4, 9, 10 and, July 5 June 29, 30, 31 and, July 29 June 26 and, August 8
Boat Electrofishing Surveys	2000 2001 2003 2004 2006 2008 2010 2014 2016 2019	August 16 June 27 December 8 July 28 July 31 August 5 August 9 August 14 August 17 August 26
Incidental Wildlife	Recorded when encountered during all visits	

The Ecological Land Classification (ELC) System for Ontario was used to describe the vegetation communities at Valens. Staff conducted multi-season inventories of the property over two years, 2014 and 2018. Details on the canopy, sub canopy, shrub and ground layers of each vegetation community were recorded. The pine plantations were not surveyed as they have been surveyed in 2016 by the contract forester for the Managed Forest Plan. The information recorded by the forester was converted to ELC codes and used to map and describe the vegetation in this area. Vegetation community boundaries were determined using air photo analysis and further refined in the field.

Botanical inventories were conducted as a part of the Ecological Land Classification surveys of the property. Specific floristic inventories occurred in the spring over the whole property looking specifically for spring ephemerals (early spring flowers) as these can die back throughout the summer and not be identified later in the season. Species nomenclature is based on the Ministry of Natural Resources and Forestry “Southern Ontario Vascular Plant Species List-3rd Edition” (Bradley 2013). Species and community ranks were determined provincially by the Ministry of Natural Resources and Forestry Natural Heritage Information Centre Database (Srnks) and locally via the Hamilton Natural Areas Inventory (Schwetz 2014).

All wildlife encounters were incidental while conducting other aspects of field work, or were from historical surveys conducted for the Natural Areas Inventory project (2014). These surveys involved general coverage recording all species observations and signs (e.g. tracks/trails, scat, and burrows, dens, browse and vocalizations). A summary of the findings is in *Appendix 10*. Historical surveys of butterflies, mammals and dragonflies have been completed for the Natural Areas Inventory at Valens Lake CA. In addition, dragonflies and butterflies were regularly surveyed by volunteers between 2005-2013.

Amphibian call surveys were conducted on this property as part of the Natural Areas Inventory project. These surveys followed the Marsh Monitoring Program protocol. This includes three nights of surveys from April to June when temperatures at night are 5, 10 and 15 degrees respectively. Only two surveys were completed for this conservation area. All amphibians encountered during other surveys were recorded.

Breeding bird surveys were completed between 5 am and 10 am, with two visits between June 6th and July 10th (June 7, 29). The methodology follows the Ontario Breeding Bird Atlas (Cadman 2010), with all species recorded as present, possible, probable, or confirmed depending on the level of breeding activity observed. These surveys were conducted in appropriate weather conditions with no rain and low or no wind speed.

The Aquatic Inventory for Valens is conducted as part of the HCA Aquatic Resource Monitoring Program. For Valens this includes biannual Electrofishing with a boat electrofisher following five set transects in the larger section of the reservoir, and using seine nets at six set locations along the shore. Included in this document are also the results of a fish rescue done at the dam as part of a repair. There are also four historic stream sampling stations for two of the stream segments found within the conservation area boundary.



5.5 Ecological Land Classification Results

Field surveys occurred on various dates in 2014 and confirmation site visits were conducted on June 18, 25, 28, and July 4 of 2018. The subject property was delineated into 29 different vegetation communities (Table 8). Overall, communities remained the same between the 2014 and 2018 surveys. Exceptions to this include the harvesting of multiple red pine plantations (FOCM6-2) in the north half of the property and the transition of a cattail mineral marsh (MASM1-1) along the south edge of the reservoir into an invasive common reed (*Phragmites australis*) dominated system.

A summary of each of the vegetation communities at Valens follows. See the Ecological Land Classification Map 1 in *Appendix 1* for more information.

Table 8. Vegetation Communities

Community Type	ELC Code	Community Description
Aquatic	OAO	Open Aquatic
Cultural	Anthropogenic	Anthropogenic
	TAGM1	Coniferous Plantation
Coniferous Forest	FOCM2-2	Dry - Fresh White Cedar Coniferous Forest Type
	FOCM6-1	Dry - Fresh White Pine Coniferous Plantation Type
	FOCM6-2	Dry - Fresh Red Pine Naturalized Coniferous Plantation Type
	FOCM6-3	Dry - Fresh Scotch Pine Naturalized Coniferous Plantation Type
	FODM4-2	Dry - Fresh White Ash - Hardwood Deciduous Forest Type
	FODM4-11	Dry - Fresh Black Locust Deciduous Forest Type
	FODM5-2	Dry – Fresh Sugar Maple – Beech Deciduous Forest Type
	FODM5-8	Dry – Fresh Sugar Maple – White Ash Deciduous Forest Type
	FODM8-1	Fresh – Moist Poplar Deciduous Forest Type
	FODM 1-1	Dry-Fresh Red Oak Deciduous Forest Type
Meadow	MEGM3	Dry-Fresh Graminoid Meadow Ecosite
	MEMM3	Dry - Fresh Mixed Meadow Ecosite
Hedgerow	H	Hedgerow
Wetland	SWDM3	Maple Mineral Deciduous Swamp Ecosite
	SWDM3-2	Silver Maple Mineral Deciduous Swamp Type
	SWDM 3-3	Swamp maple Mineral Deciduous swamp type
	SWDM4	Mineral Deciduous Swamp Ecosite
	SWDM 4-5	Poplar Mineral Deciduous Swamp type
	SWMM1	White Cedar Mineral Mixed Swamp Ecosite
	SWTM2-1	Red-osier Dogwood Mineral Deciduous Thicket Swamp Type
	SWTM3	Willow Mineral Deciduous Thicket Swamp type
	MAMM1	Graminoid Mineral Meadow Marsh Ecosite
	MAMM 1-12	Common Reed Graminoid Mineral Meadow Marsh
	MASM1-1	Cattail Mineral Shallow Marsh Type
	MASM1-5	Broad-leaved Sedge Mineral Shallow Marsh Type
Woodland	WODM4-2	White Ash Deciduous Woodland Type

.1 Aquatic

.1 Open Aquatic (OAO)

The open aquatic area on the property is due to the reservoir that was constructed to augment the flow through the Spencer Creek system. The reservoir provides limited flood control and also offers opportunities for public recreation such as fishing and boating. It is edged by public beaches, cattail and forb mineral marshes, and multiple patches of the invasive common reed (*Phragmites australis*).

.2 Cultural – Anthropogenic

.1 Anthropogenic (A)

This area is a house and residential yard location in the south-east corner of the property near the dam. The open parkland area is mainly dispersed throughout the south-central portion up into the north-west corner of the property. It contains multiple camp sites, pavilion and open picnic areas, trailer and vehicle parking lots, and roads for access by visitors.

.3 Coniferous Forest

.1 Dry – Fresh White Cedar Coniferous Forest Type (FOCM2-2)

The White Cedar dominated forest type occurs in a small section of the property that extends to the east side of Valens Road and is mostly surrounded by active agricultural fields. This community occurs in the north-east corner of this section, and is bordered on one side by a cattail marsh that is now mainly dominated by the invasive species *Phragmites australis*, and on the other side by a Tamarack forest. There is also small coniferous forest mixed with white spruce along the northern boundary of the conservation area.

.2 Coniferous Plantation (TAGM1)

The south-east corner of the property contains multiple patches of coniferous plantation scattered below the reservoir. These were planted 30-40 years ago and have not been harvested or naturalized other than through natural die-off of the pine trees that allows new growth to occur. This occurs at the main entrance to the conservation area, in a small block of old plantation along Regional Road 97. The lot is a mix of multiple vegetation communities, and the naturalized White Pine plantation portion surrounds a naturalized Red pine plantation. These plantations also occur on the north east section of the conservation area and some harvesting has occurred in recent years.

.3 Dry – Fresh White Pine Coniferous Plantation Type (FOCM6-1)

A small patch of FOCM6-1 occurs in the south-west corner of the property, within the old field/meadow ecosite. The canopy here is mainly composed of White pine, with rare occurrences of White ash, Sugar maple, and Black cherry. The understorey contains Prickly ash, Apple sp., Black cherry seedlings, and invasive Common buckthorn and Honeysuckle. The ground layer is mainly Red and Black raspberry, and Ironwood, but also contains Tall thimbleweed, Enchanter's nightshade, Dandelion sp. and Herb Robert.

.4 Dry – Fresh Red Pine Coniferous Plantation Type (FOCM6-2)

This Red pine dominated community occurs in various locations throughout the property. The canopy in the portions in the north-west section is dominated by both Red pine and Norway spruce. Common buckthorn mainly composes the understory along with Alternate-leaved dogwood. The ground layer is fairly sparse (10-25%) with Zig-zag Goldenrod and Calico aster, and rare occurrences of species like Knapweed, Burdock, Virginia Creeper, and Wood-sorrel.

A pine plantation harvest occurred in 2016 and portions of the Red pine Plantation along Concession 10 were harvested. Removal of all of the overstory pine trees was completed due to disease in the Red pine trees.



.5 Dry – Fresh Scotch Pine Coniferous Plantation Type (FOCM6-3)

The naturalized Scotch (Scots) pine plantation vegetation communities are found in the northern half of the Valen's property. They are interspersed with the White and Red pine naturalized plantation areas, some of which were selectively harvested in 2018. The canopy is dominantly Scotch pine, with rare occurrences of Black cherry. Understory is composed of Black cherry and Buckthorn, with ground cover being Orchard grass, Goldenrod species, Bed straw species, Hawkweed, and Dandelion. The section in polygon 1B (north-west section) is similar although not as thick with Buckthorn.

.4 Deciduous Forest

.1 Dry-Fresh Red Oak Deciduous Forest (FODM 1-1)

A small Red oak plantation occurs in this location. These are widely spaced rows of Red oak. Invasive shrubs occur in the understory including common and Glossy buckthorn as well as Russian olive. Goldenrod species were abundant in the ground layer.

.2 Dry - Fresh White Ash - Hardwood Deciduous Forest Type (FODM4-2)

This community is in a high point within the surrounding deciduous swamp. The area was dominated by White ash with the occasional White birch. Glossy buckthorn is abundant in this community along with Alternate leaved dogwood. Ground cover includes many Glossy and Common buckthorn saplings.

.3 Dry - Fresh Black Locust Deciduous Forest Type (FODM4-11)

This is a small planted section of Black locust on a knoll in on the western side of the reservoir.

.4 Dry – Fresh Sugar Maple – Beech Deciduous Forest Type (FODM5-2)

A small deciduous forest adjacent to the main campground and pine plantations. Sugar maple is dominating intermixed with American beech. There is a wide variety of ground cover species with many spring ephemerals and few invasive Common buckthorn shrubs.

.5 Dry – Fresh Sugar Maple – White Ash Deciduous Forest Type (FODM5-8)

Upland forest areas intermixed with Silver maple swamp. The community is dominated by Sugar maple with components of White ash and American beech. The ground cover diversity and shrub diversity are good with Prickly ash, Spicebush and Dogwoods. The ground cover species are extensive and include Wild ginger, Blue cohosh, Hepatica and a variety of sedge species.

.6 Fresh – Moist Poplar Deciduous Forest Type (FODM8-1)

Trembling aspen dominates this small polygon with scattered Eastern white cedar and Tamarack. Common and glossy buckthorn occur in this community as well as Viburnum and Honey suckle. Goldenrods and sedges make up the ground cover layer.

.5 Woodland

.1 White Ash Deciduous Woodland Type (WODM4-2)

The woodland is located adjacent to the meadow in the West portion of the property, and consists of a canopy of Bur oak and White ash, with a subcanopy of Ironwood. The understory predominantly contains Prickly ash and Common buckthorn, as well as some occasional species such as Chokecherry and Grey dogwood. The ground layer is dominated by young Buckthorn seedlings, but also contains Running strawberry bush, White ash and Sugar maple seedlings, Tall thimbleweed, Zig-zag goldenrod, and some grasses and sedges. The woodland also contains multiple pockets of Cedar dominated areas (FOCM2-2).

.6 Meadow

.1 Dry-Fresh Graminoid Meadow (MEMG3)

Formerly mown lawn in the conservation area have re-grown as old field meadows with a mix of grass species including Orchard grass and Timothy. Knapweeds are becoming a large component in these open fields. Scattered trees have been planted and consist mainly of pine species.

This community type also occurs on former agricultural fields on the west side of the property. Now it is transitioning into a sparsely treed meadow system that is split by hedgerows consisting of Buckthorn, Maple and Ash, and contains scattered shrubs. Knapweed are the dominant vegetation type in this meadow. A trail system also runs through the area for use by the public.

.2 Dry - Fresh Mixed Meadow Ecosite (MEMM3)

This meadow ecosite occurs in various pockets on the edge of the property along Region Road 97. Two pockets occur on the north and south edge of the open pond located at the main entrance to Valens. These areas have a sparse (0-10%) canopy and subcanopy of

White pine, White birch, and White ash. The equally sparse understory is composed of Eastern white cedar, and the invasive species Russian olive and Tatarian honeysuckle. The ground layer contains species such as Knapweed, Orchard grass, Brome grass, Common daisy, Birds-foot trefoil, and English plantain.

The meadow located along the south shore of the Valens reservoir is slightly different in species composition. The canopy and subcanopy are again sparse (0-10%) but are mainly Common buckthorn, with Red-osier dogwood in the subcanopy. The understory and ground layer contain Goldenrod species, Knapweed, Goatsbeard, Sugar maple seedlings, Brome grass, Common daisy, Hawkweed species, and Common milkweed.

.7 Hedgerow

A number of hedgerows occur within the Valens. These generally have a shrub layer of Common and Glossy buckthorn as well as Russian olive. The overstory is variable with Sugar and Silver maple as well as dyeing White ash trees. One hedgerow on the east side of the conservation area is a small Norway spruce plantation.

.8 Wetland Systems

.1 Maple Mineral Deciduous Swamp Ecosite (SWDM3)

A Silver maple, Black and Green ash wetland with a canopy cover of 25-60% and a tree height of close to 15 m. the canopy was sparse in the location due to the loss of ash from the polygon. Silver maple and White cedar have filled in along with Glossy buckthorn which is abundant in the shrub layer. This species is also abundant in the ground layer mixed with typical wetland species like Dewberry and Jewel weed.

.2 Silver Maple Mineral Deciduous Swamp Type (SWDM3-2)

This is a common vegetation type for Valens occurring in multiple locations. The northern- west corner is a complicated polygon as it is difficult to survey due to the depth of the water. There was significant die back of Green and Black ash which opens up the canopy to Glossy buckthorn and Phragmites in sections. There were abundant pockets of White cedar throughout the polygon and Silver maple was also abundant. Typical wetland plants occurred in this polygon including March fern, Glossy buckthorn and Dewberry.

The vegetation type also occurs on the eastern side of the conservation area. This is a small swamp community close to the reservoir. Spicebush and Glossy buckthorn occur in this community along with a wide variety of ground cover species.

Finally, the large wetland blocks on the west-central portion of the conservation area are Silver maple swamps. This is a large swamp system that has tall Silver maple trees with



hummock of dry lands around them. There is an abundance of Cinnamon and Royal ferns in this swamp as well as many species growing along the drier hummocks.

.3 Mineral Deciduous Swamp Ecosite (SWDM4)

Located on the western boundary of the conservation area, this Freeman maple swamp had a canopy closure of over 60%. Green ash and white Elm were mixed in the understory of this community. Reed canary grass is abundant in the understory. There was evidence of moderate deer browse and many of the ash in this wetland were dead due to Emerald ash borer.

.4 Poplar Mineral Deciduous Swamp type (SWDM 4-5)

A young wetland community dominated by Balsam poplar with occasional Silver maple in the canopy and subcanopy. Red osier dogwoods and willow species make up the shrub layer. Sedges are the dominant ground cover layer along with Joe pye weed and Reed canary grass.

.5 White Cedar Mineral Mixed Swamp Ecosite (SWMM1)

This is a dense White cedar swamp with some areas of Tamarack mixed in. Closer to the creek there is a lot of young Glossy buckthorn. Due to the dense cedar overstory there is very little ground cover.

.6 Red-osier Dogwood Mineral Deciduous Thicket Swamp Type (SWTM2-1)

A small polygon on the western side of the conservation area. The Red-osier dogwood forms a thick shrub layer along with willow species on this creek corridor. A few tree species are also growing here including White elm and Bur oak. Ground cover species include Joe pye weed, Purple stemmed aster and Tall meadow rue.

.7 Graminoid Mineral Meadow Marsh Ecosite (MAMM1)

An open wetland community with scattered willow shrubs. White spruce, Scots pine and Red cedar occurred on the higher edge portions of this site. Sedges and rushes were the dominant species in this community. They formed a contiguous ground cover throughout.

.8 Willow Mineral Deciduous Thicket Swamp type (SWTM3)

On the eastern edge of the conservation area, this wetland was dominated by willow species. There is sparse green ash in the canopy of this community which were



slowly dying. Red osier dogwood is mixed in within the shrub layer of this community and some Glossy buckthorn in the ground layer. It is a dense shrub layer with over 60% canopy coverage with plants 1-2 m tall. Cattails dominated the ground cover along with Reed canary grass.

.9 Common Reed Graminoid Mineral Meadow Marsh (MAMM 1-12)

Common Reed is dominating in areas of shoreline wetlands on the southern and western portions of the reservoir. There are also other pockets of Common reed in the north-western parts of the reservoir. There is very little biodiversity in these sections and it is almost completely common reed.

.10 Cattail Mineral Shallow Marsh Type (MASM1-1)

The large open cattail wetland at the northern end of the reservoir. This area is dominated by cattails with other common wetland plants such as Joe-pye weed, Boneset and sedge and rushes.

.11 Broad-leaved Sedge Mineral Shallow Marsh Type (MASM1-5)

A small wetland feature with a variety of sedges, cattails, willow sp. and Red osier dogwood. Water sedge was dominate mixed with other sedge species. This wetland community is quite open with less than 10% tree canopy cover. Other herbaceous species include Rice cut grass, Marsh fern and Rough leaved goldenrod. The herbaceous layer had over 60% canopy cover.

5.6 Flora/Botanical Inventory Results

Over the course of multiple survey dates including ELC surveys, staff identified 252 species of plants. Of these, 183 are considered native plant species (73%) while 38 are non-native species (15%) and 31 identified to genus only (12%). The Hamilton NAI (HCA 2014) indicates that there are 1496 species of plants in the Hamilton-Wentworth jurisdiction. Plant species at Valens represent 17% of that regional flora.

The Floristic Quality Index (FQI) and the Native Mean Coefficient of Conservatism (CC) have been calculated for the entire property. The CC is a measure of a species specificity of habitat requirements, with a coefficient of 0 indicating a plant tolerant of a wide range of conditions and 10 indicating a plant that has the most specific habitat requirements. Native plant species with higher CC values tend to be those that are restricted to higher quality natural areas. Those with a low CC value have a wider range of acceptable habitats and therefore could “grow anywhere”. Therefore, the higher the mCC, the higher number of plant species that prefer high quality habitats. The mCC for Valens Lake Conservation Area is 4.66. This is a moderate value for the mCC and means that the majority of native plant species found at Valens are tolerant of a wide range of habitat conditions.

FQI is a measure of vegetation quality and influence of human disturbance on the natural habitats surveyed. The FQI for Valens is 62.98. This is a relatively high FQI and is indicative

of a lower influence of human disturbance to the habitats surveyed and the plants within them.

5.7 Fauna Inventory Results

.1 Breeding Birds and Mammals

Sixty-five species of birds were identified during these surveys, including 19 locally uncommon and 3 locally rare species. This includes both breeding birds and incidental species (those seen in non-breeding season or as fly-overs). Eight provincially or federally listed species at risk were recorded on the property during these surveys or in other bird surveys in the last 5 years. Fifteen mammal species have been recorded for this area. This includes two federal and provincial endangered species: Little brown myotis and Northern myotis. All of these species are considered common in the City of Hamilton.

.2 Butterflies and Dragonflies

Data was also collected from past Lepidoptera and Odonata surveys completed at Valens between 2005-2013. During these surveys 60 butterfly were recorded on site. Of these only one was identified to species level only. Monarch and Black Dash butterflies are considered rare in the province. While Milbert's tortoiseshell and White admiral are rare locally. In addition, these past surveys for odonates have identified 48 species on the property. Four of these species are considered rare in the province and are ranked S3 or S2S3 with 80 or fewer recorded populations province wide. These species include River bluet, Clamp-tipped emerald, Azure bluet, and Double-striped bluet. Five of the recorded species are also rare locally and 15 are locally uncommon.



.3 Herpetofauna

Incidental observations of herpetofauna include 10 different species. Of these, Bullfrog is the only locally uncommon species in the City of Hamilton and snapping turtles are a species of special concern. Frog call surveys recorded a full chorus of spring peepers in the central wetland unit on the west side of Valens and within the wetlands on the northern end of the reservoir.

5.8 Aquatic Inventory Results

Valens Lake is an artificial reservoir of water created by the Valens Lake Dam. Historically the site would have been a cold-water stream with the associated fish assemblage including species such as Brook Trout. The creation of the lake would have displaced most of the

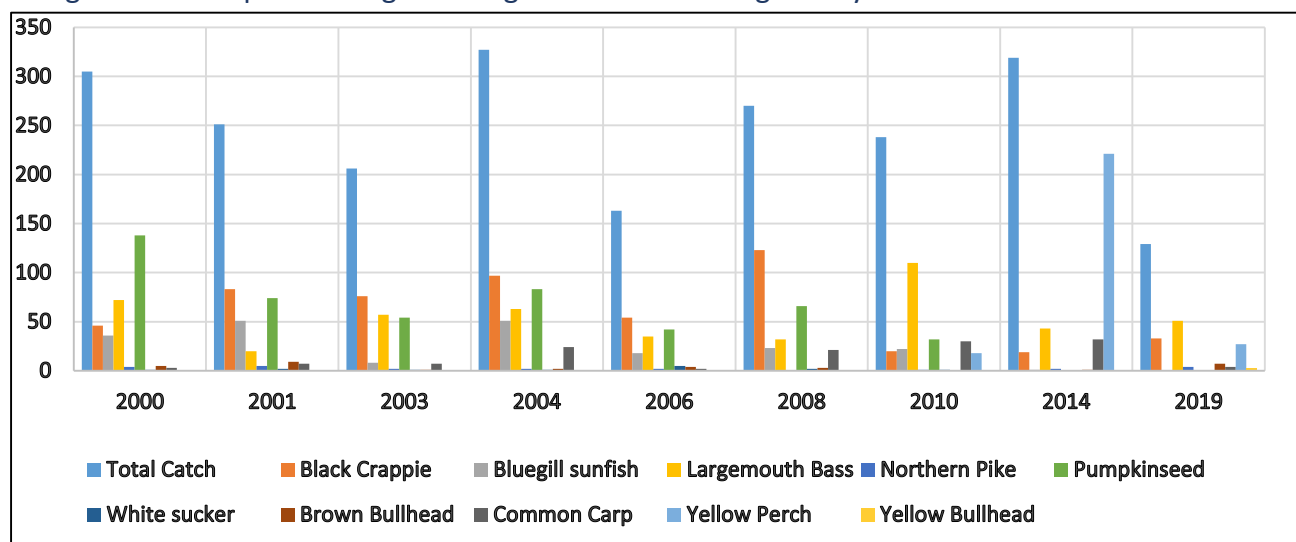
sensitive species and begun a transition from stream to lake fishery. Over the years many species of fish have found a way into the reservoir and this growing biodiversity has kept the fishery in a fluctuating state.

Yellow Perch are the most recent game fish arrival to the fishery and arrived between 2010 and 2012. Following this, the panfish catch has declined whereas the Largemouth Bass catch has been relatively stable over the entire sampling period (Figure 7). Currently there are 14 species of fish known to live in Valens Lake. Five of these are game fish sought after by anglers and they are Largemouth Bass, Northern Pike, Bluegill, Pumpkinseed and Black Crappie. The conservation area as a whole has an additional 8 species where catches have been restricted to the watercourses. Common Carp is also present and is an invasive non-native member of the fish assemblage.

Table 9. Fish Species of Valens Lake Conservation Area

COMMON NAME	SCIENTIFIC NAME	LOCATION SAMPLED IN CA
Central mudminnow	<i>Umbra limi</i>	Lake and Stream
Creek chub	<i>Semotilus atromaculatus</i>	Stream
Brook trout	<i>Salvelinus fontinalis</i>	Stream (1973 last record)
Black Crappie	<i>Pomoxis nigromaculatus</i>	Lake and Stream
Fathead minnow	<i>Pimephales promelas</i>	Stream
Finescale dace	<i>Phoxinus neogaeus</i>	Stream
Northern redbelly dace	<i>Phoxinus eos</i>	Stream
Yellow Perch	<i>Perca flavescens</i>	Lake and Stream
Blacknose shiner	<i>Notropis heterolepis</i>	Lake and Stream
Emerald shiner	<i>Notropis atherinoides</i>	Lake
Honeyhead chub	<i>Nocomis biguttatus</i>	Stream
Largemouth Bass	<i>Micropterus salmoides</i>	Lake and Stream
Common shiner	<i>Luxilus cornutus</i>	Lake and Stream
Bluegill sunfish	<i>Lepomis macrochirus</i>	Lake and Stream
Pumpkinseed	<i>Lepomis gibbosus</i>	Lake and Stream
Green sunfish	<i>Lepomis cyanellus</i>	Stream
Northern Pike	<i>Esox lucius</i>	Lake and Stream
Common Carp	<i>Cyprinus carpio</i>	Lake
Brook stickleback	<i>Culaea inconstans</i>	Stream
White sucker	<i>Catostomus commersoni</i>	Lake
Brown Bullhead	<i>Ameiurus nebulosus</i>	Lake and Stream
Yellow Bullhead	<i>Ameiurus natalis</i>	Lake

Figure 7. Fish Species Caught During Boat Electrofishing Surveys



In 2018 the Common Carp population in the reservoir suffered a large die-off. Specimens were collected and sent away for testing by the MNRF unfortunately they were not fresh enough for conclusive results. HCA staff have long suspected the carp's presence in the reservoir was having a negative impact on the fishery and water quality. This large die-off has acted as a test for this. So far anecdotally this idea may be true. Valens staff have observed weed beds that had disappeared over the years have returned, further study will be required to determine if this is a concern. The water was significantly clearer than it has been for many years in the summer of 2019. A monitoring plan should be considered to determine what effect the presence of the carp in the reservoir are having and if there is a need to control them for the benefit of the overall fishery and conservation area goals.

Located along the southern boundary of Valens is a small tributary of the reservoir, all except the very headwaters of this tributary occur within Valens. It consists of a small amount of watercourse and is mostly two ponds with the lower most portion within the ponding effect of the reservoir. This lower portion also appears to have a bedrock spring feeding it. This tributary should be explored to determine what resources are present and if there is an opportunity for improving its function for the overall benefit of the conservation area's ecology.



5.9 Significant Ecological Features

.1 Natural Heritage Designations

.1 Valens Conservation Area Environmentally Significant Area (ESA)

The Environmentally Significant Area includes the majority of the conservation area and two additional woodlots. The area is 448 Hectares in size and contains a mix of vegetation including wetlands, forests, plantations and meadows. Valens makes up 66% of this area while the reservoir encompasses 76 Ha or 16% of the area and is a central feature. This ESA was designated because it meets five of the 2003 ESA criteria including:

1. The riparian area serves as a link between natural areas
2. The area provides habitat for significant species
3. The area contains important habitat for migratory stopover
4. The area contains a locally rare biotic community
5. The reservoir, wetlands and marshes within the area helps to maintain surface water quality and provide flow augmentation in the upper sections of the Spencer Creek watershed.

.2 Valens Provincially Significant Wetland (PSW)

The Valens Provincially Significant Wetland Complex includes multiple properties near and within the conservation area. It is a large wetland area that contains Silver and Green ash swamps along with cattail marshes and swamp thickets.

.3 Significant Woodlands

The majority of the property owned by HCA in this area is considered by the City of Hamilton to be significant woodland. Significant woodlands for the City of Hamilton mean an area which is ecologically important in terms of features (species composition, age of trees and stand history) and function (contributes to the broader landscape because of its location, size or the amount of forest cover in the planning area) (City of Hamilton, 2019). Development is not permitted within significant woodlands.

5.10 Biophysical Inventory – Analysis

.1 Species at Risk and Locally Rare Species

.1 Flora

Of the plant species recorded on the subject lands through the 2018 field surveys, three plant species were found to be locally rare and six to be locally uncommon by the City of Hamilton. Marsh horsetail, marsh rush and swamp black currant are all considered locally rare. Aquatic sedge, Woolly sedge, Canada gooseberry, Hard-stemmed bulrush and Red-sheathed bulrush are locally uncommon in the area. All of these species are considered provincially secure (G5/S5).

.2 Fauna

The following twelve species recorded at Valens, listed in Table 10 are considered species at risk either federally (SARA status) or provincially (SARO status).

Table 10. Federal (SARA) and Provincial (ESA) Species at Risk

Common name	Scientific name	SARA status (Schedule 1*)	ESA status
Bald eagle	<i>Haliaeetus leucocephalus</i>	—	SC
Eastern wood-pewee	<i>Contopus virens</i>	SC	SC
Wood thrush	<i>Hylocichla mustelina</i>	THR	SC
Barn swallow	<i>Hirundo rustica</i>	THR	THR
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR
Chimney swift	<i>Chaetura pelagica</i>	THR	THR
Least bittern	<i>Ixobrychus exilis</i>	THR	THR
Common nighthawk	<i>Chordeiles minor</i>	THR	SC
Monarch	<i>Danaus plexippus</i>	SC	SC
Snapping turtle	<i>Chelydra serpentina</i>	SC	SC
Little brown myotis	<i>Myotis lucifugus</i>	END	END
Northern myotis	<i>Myotis septentrionalis</i>	END	END

*Species at Risk Act (SARA-federal) and Endangered Species Act (ESA-provincial)

Bald eagles are seen flying over the Valens Lake Reservoir in the spring and the fall. A breeding pair have not been observed here, but the habitat is used during migration of this species. The Eastern wood pewee and Wood thrush occur throughout the conservation area in the forests and wooded wetlands. These species are common at Valens despite being a species at risk. Barn swallows inhabit the barn at the workshop of the conservation area.

An eBird record and picture of a Least bittern in the Valens Lake reservoir was posted in 2017. The identification of this bird was confirmed and, as it was a juvenile, breeding of this species can be confirmed at Valens. In addition, Common nighthawks were recorded in significant numbers (22 individuals) feeding over the Reservoir in Valens on migration in June 2019. Chimney swift has also been observed flying over the conservation area, but there is no evidence of breeding for either species on the property.



Monarchs have been observed throughout the property according to the 2005-2013 survey data available on odonata and lepidoptera at Valens. Both Monarch adults and caterpillars on milkweed plants were also observed incidentally while on the property in 2018.

Snapping turtles have been observed both in the reservoir and along the roadside on the western side of the reservoir. These have been females attempting to nest along the roads within the conservation area. The bat species were recorded during the Natural Areas Inventory project (NAI 2014) and staff assume the two species noted in Table 10 likely persist at the conservation area.

Threatened and endangered species habitat is protected under the Endangered Species Act (provincially) and the Species at Risk Act (federally). Permits may be required for development within the habitat for threatened and endangered species.

.3 Significant Wildlife Habitat

The Significant Wildlife Habitat Technical manual (OMNR 2000) along with the Eco regional criteria tables for Ecoregion 6E (OMNR 2015) were used to determine and define significant wildlife habitat (SWH) on the Valens property. Significant wildlife habitat includes broad categories of habitats for flora and fauna. SWH has been identified under the provincial policy statement for Ontario. No new development is allowed within identified portions of significant wildlife habitat unless there will be no negative impact to the form and function of this habitat type. The broad categories for significant wildlife habitat include seasonal concentration areas of animals, rare vegetation communities or specialized habitat for wildlife, habitats for species of conservation concern and animal movement corridors.

Seasonal concentration areas of animals are areas where wildlife species occur annually in aggregations (groups) at certain times of the year (MNR 2015). This can include single species concentrations or aggregations of multiple species.

Although not directly observed by staff it is likely that the northern portion of the wetland/reservoir acts as an overwintering location for both Snapping turtles and Midland painted turtles. The northern portion of the reservoir would be considered a Turtle Wintering Area. Generally Wintering Areas are contained within a turtle's core habitat and consists of soft mud substrates where the water is deep enough to freeze. This designation would be restricted to the northern portion of the reservoir where there are water inputs and the area is not completely drained during winter drawdown.



Specialized habitat for wildlife is another category of SWH. Some species require large areas of suitable habitat for their long-term survival. Osprey having been foraging and nesting around Valens Lake for a number of years. Osprey nesting, foraging and perching habitat is considered SWH and maintaining undisturbed shorelines is important for this species. The

nest and 300 m around the nest or the associated contiguous woodland is considered SWH. The nesting location for this species was not observed during the inventory work completed for the Master Plan.

Finally, habitat for species of conservation concern includes wildlife that are listed provincially as species concern or are rare and declining. Four provincially rare dragonfly species have been identified at Valens: Azure bluet, River bluet, Double-striped bluet and Clamp-tailed emerald. As these were not observed by staff the specific location of breeding and feeding habitat cannot be identified at this time. These species use small streams and fishless ponds for the majority of their life cycles. Any development around these types of habitat should consider these dragonfly species.

.4 Invasive Species at Valens

Invasive species are wide spread throughout the conservation area. The species detailed below are a threat to the biodiversity and conservation values at Valens. Trails throughout the conservation area are movement pathways for a number of invasive species. The following section details the invasive species that occur at Valens. Recommendations for prioritization for each species are detailed here, where as a wider prioritization for the property is presented in the restoration and enhancement opportunities section below.

.1 Glossy and Common buckthorn

Glossy buckthorn is a member of the buckthorn family that grows in wetlands and in moist woods. This is a non-native tree species introduced from Eurasia about 100 years ago (NCC 2019). This species forms dense thickets that shade out native species. There are large thickets of Glossy buckthorn within the wetland communities at Valens. The west side of the lake in particular has an ELC polygon dominated by Glossy buckthorn. In addition, this species occurs along wetter trail edges throughout the conservation area. This shrub produces a dark berry that ripens in late summer and is eaten by birds. The birds disperse the seeds. It is very invasive due to its high seed production and tolerance for varied growing conditions. It will be important to begin the removal process for this species. It tends to be a weak plant and is easily pulled. Removing this shrub from the trail margins would be a recommended starting point. Some of the plants are small and could be removed by hand. For larger trees and large infestations chemical removal may be necessary. Any area treated for removals must be resurveyed yearly for developing seedlings.

Common buckthorn is a small tree or shrub that was introduced to Ontario from Eurasia. It was widely planted in farm hedgerows and fencerows as a wind break. It can survive in a wide range of conditions making it very good at invading a variety of habitats (Invading species centre 2019). Birds and small mammals feed on the berries of this plant and have spread it across Valens. This shrub/small tree is growing in between the campgrounds under the pine plantations, along trails and is invading the large 60-acre field on the west side of the conservation area. Unfortunately, it is also the dominate regeneration in the harvested pine plantations on the eastern side of the CA. A major effort will need to be under taken for the reduction in the dominance of this species throughout the conservation area. The focus should begin on all fruiting female trees within Valens. These fruiting

females along trails should be removed first as this is a major vector for spread of Common and Glossy buckthorn throughout the conservation area. A phased plan will need to be developed for the campground as the buckthorn forms the screen or buffer between many campsites. Removals can be achieved with additional plantings below these pines, in the campground, as the buckthorn are removed. Finally, the field on the western side of the CA and the pine harvest areas also need to have the Common Buckthorn controlled. As stated previously this should start with all fruiting females within these stands of Common buckthorn which can be treated with herbicide application. The remaining stems can be removed through volunteer events and work days. Replanting will also be required to shade out emerging Common buckthorn.

.2 Phragmites

This is a species of common reed from Eurasia is a perennial grass. It is not clear how it was transported to North America. It is an aggressive plant that spreads quickly and out competes other native species in wetland habitats. It forms large mono cultures that decrease plant biodiversity and create poor habitat for wildlife.

Patches of this species were found at Valens. These patches are around the reservoir and across Valens road. Removal of this species from the reservoir is a priority to keep it from invading more sensitive wetland habitats at the northern portion of the reservoir and on other parts of the property. If this species invades the northern wetland system, it will be very difficult to remove due to the flooded nature of the wetland in this location.

Ecology staff have begun removal of this plant from the reservoir, but it will take a number of years with the current level of effort. Effective control strategies would likely include drowning of stems when water levels are high (June) or pesticide application in dry periods for these wetland communities (September/ October). Drowning stems involves cutting them in June at the base of the plant, in at least 30 cm of water. This combined with pesticide application on the dry stems should be an effective treatment for this species at Valens.

.3 Black, Brown and Spotted knapweeds

Knapweeds were introduced to North America over 100 years ago in contaminated agricultural seed and soil in discarded ballast water. It spreads easily by seed.

Knapweeds were found along the trail edges at Valens and throughout the unmown meadows on this property. The campground expansion area is dominated by this species as is the meadow at the entrance to Valens. This species reduces the habitat for grasslands birds and reduces the biodiversity of these meadows in general. It becomes the dominant plant species.

This species forms a tap root and can be controlled with cultivation to a depth of 18 cm or hand removal. Persistent hand removal (pulling or digging) can control this species if the upper 7.5 cm of the crown portion of the plant are removed before it produces seeds. A targeted mowing in early august could prevent seed production and keep the knapweed from spreading further. Removal along trails would be a priority to keep the species from spreading further to other meadows at the conservation area. Targeted mowing should also

occur before this species produces seed to further reduce the likely hood of spread (mow the areas in late July). It is also recommended that the meadow at the front of Valens (before the gate house) be mown again as the entire area is knapweed and just contributing to the movement of this species into the conservation area. Finally, knapweed can be shaded out, so tree planting in some meadows where this plant is starting to dominate could help reduce its presence.

.4 Garlic mustard

This species was introduced in the 1800's from Europe as an edible herb for early pioneers in the spring. It is a biennial plant that produces seed in its second year. It can grow in a variety of conditions making it a very good invader in a variety of habitats. It easily outcompetes other native ground cover and can change the soil environments to favour its growth over others. There is very little garlic mustard at Valens. Active removal of this species is fairly straight forward with hand picking between April and June, before the plant goes to seed. With a dedicated effort over 5 years removal of this species can be achieved, provided no large-scale unintentional introductions occur.

An overall invasive species management plan should be developed for this conservation area. Various methods can be employed to control these species. These include manual and chemical means to achieve a reduction in invasive species throughout the property.

5.11 Managed Forest

A Managed Forest Plan was completed for the HCA properties owned within the watershed in 2018. This is a 20-year plan that covers 1,018 hectares of HCA owned lands. The majority of the eastern portion of Valens falls within the Managed Forest Plan area as this is the location of the majority of the pine plantations.

A plantation harvest was undertaken in the winter of 2018. In order for that to occur a forest management prescription was written and the trees marked for cutting by a registered tree



marker. The pine stands are between 35-45 years old and had not been managed before the harvest in 2018.

The Managed Forest Plan identified 118 hectares of conifer plantation at Valens. Of these 33 hectares were marked for harvesting. Mostly the harvest involved the removal of every third row or trees through each area. This allows for some regeneration and for the remaining trees to grow bigger for an additional harvest in 30-40 years. Some areas all of the trees were removed as they were red pine and heavily diseased. They were creating a hazard for park users and due to disease, the adjacent healthy trees would continue to die.

Post-harvest HCA has been completing regeneration surveys within the harvested sections to observe what natural regeneration might be occurring in these plantations. Unfortunately, much of the understory is now common buckthorn with a few scattered white ash trees. A restoration plan should be developed to encourage natural regeneration in these harvested locations and to control the influx of invasive species.

5.12 Natural Areas Recommendations

The existing natural habitat features at Valens have been evaluated for restoration opportunities and invasive species removals.

Restoration in certain parts of the site can assist with buffering the natural habitats of the conservation area, with the impacts of moderate to high levels of visitor use.

Priorities for natural areas restoration and invasive species removal in this Master Plan are as follows:

1. Continue to remove and control invasive *Phragmites* within the wetlands along the edges of the reservoir. Control of these smaller patches is important in order to keep this species from reaching the large cattail mineral shallow marsh at the north end of the reservoir.
2. Invasive species control (buckthorns and knapweeds) within the wetland communities on the north west side of the property is a priority. This would include controlling invasive Glossy and Common buckthorn along the trail and within adjacent wetland units.
3. A 30 m planted buffer (shrubs and trees) is recommended for around the large Silver maple swamp on the south-western side of the conservation area. This is an important area for frog reproduction and has relatively few invasive species. Providing a buffer helps to reduce likelihood of invasive species introduction and buffers this large wetland complex from edge effects.
4. Within the new campground area (west side), further tree planting is recommended for the southern boundary of this field. Planted tree diversity in this area is low and the presence of Brown knapweed is moderate. Planting a 20-30 m wide buffer adjacent to this woodlot would enhance the connectivity of this woodlot to those to

the west and south. In addition, it would buffer the larger woodlot from the impacts of increased camping. There were few invasive species in this woodlot at the time of survey. It is recommended that the walk-in camp sites in this area be pulled back from the edge of the forest and the area planted in trees to enhance these sites while giving a buffer to these woodlots.

5. Additional tree and shrub planting and habitat enhancements are recommended for the field beyond the proposed campground expansion area. The current regeneration is a pine monoculture and it would be beneficial to add diversity to the trees planted in this field. It will also be important to control the Common buckthorn as this field regenerates to a forested system. This will increase habitat value and suppress the development of brown and black knapweed in these fields.
6. Both the pine plantation and the current campground require invasive species control for Common and Glossy buckthorn as well as Knapweeds. In portions of the harvested areas all of the pine trees were removed. These areas require active management to remove the invasive species; tree planting to enhance this area should also be completed.
7. The vision for the active agricultural fields on the eastern edge of Valens is to see this land revert back to forest. Active management to remove invasive species, along with restoration planting to enhance these lands should be completed immediately once farming stops. HCA will consider this restoration strategy when evaluating the agricultural lease renewals. Given the current prevalence of brown and black knapweed at Valens, meadow habitat restoration for these fields is not recommended.
8. See Section 7.0 for additional conservation area management recommendations.



6.0 OVERALL SITE CONCEPT

This Master Plan for Valens balances the need to conserve the natural environment with the need to accommodate visitors and generate revenue. The property will continue to be divided between recreational camping, day-use activities and protected natural areas. This section outlines the key concepts for this Master Plan that have come out of public and stakeholder consultation, staff workshops, meetings, detailed design sessions and inventory results. See *Appendix 1 Mapping* for more information.

6.1 Site Concept / Philosophy

For the lifespan of this Master Plan, land acquisition will be undertaken on a willing buyer-seller basis based on the information available in the HCA's Land Securement Strategy.

Historically, the entire Valens property was farmed until acquisition of the lands by HCA and development of the dam and reservoir in the 1960's. Active farming is now restricted to the farm fields at Valens Road north of the reservoir, under a long-standing agricultural lease. In the future, should the tenant decide to no longer farm the lands, the vision for this area is to be naturalized with the managed forests, identified as a resource management zone in this plan.

To protect the natural areas of the property, nature reserve and natural area zones have been identified in this plan with management guidelines. The ecological mapping and species data documented within this plan are also provided as a baseline inventory to help guide future land management decisions and project planning. Future site development may also be subject to review by the City of Hamilton, and the Grand River Conservation Authority for those lands in their purview.

The plantation forests will continue to be managed under the objectives of the forest management plan in *Appendix 6*. The long-term objective of this plan is to have a healthy forest, with short term objectives focused on thinning and planting. Invasive species management and restoration projects to help naturalize these areas will also be required to help support this objective.

Increased visitation and the trend towards larger recreational trailers and vehicles are straining the internal roadways and parking in the day use and campground. This plan outlines general roadway and trail enhancements to improve traffic flow and reduce congestion. HCA properties are trending towards increased visitation and parking across the watershed and this is not expected to decline. Visitor management and vehicle parking strategies are currently being investigated by HCA in response. Capital development of the features identified in this plan will need to consider these strategies and trends, and additional studies may be required to inform detailed planning, design, and operational improvements.

6.2 Day Use Activity Areas

The current day-use area will remain in the existing location, with minor improvements suggested in this plan to improve operation and reduce undue wear on the facilities and property.

It is important to note that the reservoir is the significant feature and draw for the visitor, and the health of the reservoir is important not only for recreational use, but for the Spencer Creek watershed. Waterfowl (Geese) management will continue to be necessary for public enjoyment of the day-use area and beach, see Section 7.3 for more information. Sustainable beach sand recovery practices will also need to be developed. Continual management of the water resources is essential for sustainable recreational fishing, boating, and swimming. Removal of invasive vegetation, maintaining the beach area, and monitoring the water resource and activities continually is essential in supporting this resource.

Summer camping season and public holidays are peak times for visitation. Vehicle traffic circulation and parking management becomes problematic, with parking overflow occurring on the grassed areas. A more detailed design review of all the parking in the day use area is recommended.

The boat rental operation is proposed to be relocated to the beach area, for launching of rental boats outside the swimming area. This will improve customer service from the beach house concession building, and attract additional rentals by day-use visitors.



With loss of the Drumlin Pavilion for cabins noted in Section 5.3, the addition of a number of smaller picnic shelters are recommended for the day use area. With additional tree planting, these would provide needed shade and shelter to visitors. Picnic shelters may also be rented to provide additional revenue.

A naturalized buffer should be retained to screen the administration and workshop area from public view, especially along the reservoir. The log

house in the workshop area is not accessible to the public and is recommended to be relocated to the area near the camp store, unless another suitable location is identified. The rental house in the workshop area should be evaluated further for HCA usage when the current tenant vacates.

More formal trails are recommended to reduce wear on the grassed areas and improve accessibility. A new off-road trail is also proposed to link this area to the campground, to provide a safe place for people to walk or ride their bikes between these two activity areas.

6.3 Campground

With the new lands acquired, additional new fully serviced campsites are proposed to expand the existing campground. See *Appendix 1. Map 7* for more information.

The campground has seen some changes in recent years to accommodate larger trailers and add more fully serviced campsites. Winter camping has also been implemented on a limited basis and will be complemented by the addition of camping cabins. Although serviced



sites will be a higher priority in future campsite development, tent camping will continue to be accommodated. With any proposed change to the campground, careful attention will be paid to protecting the natural character that is valued and appreciated by campers year after year.

Eight camping cabins are currently under construction and set to open in 2020. These cabins will replace the Drumlin Pavilion and are located on prestige sites with commanding views of the reservoir. The cabins will be winterized and available for reservation year-round. Camping cabins will attract a different segment of the public to Valens. Operation and maintenance of these cabins is recommended for at least three to five years before contemplating any changes or expansion of this feature.

Minor refinement of the existing campground infrastructure is recommended to enhance the camping experience. Visitor surveys appended to this Master Plan provide a starting point for HCA review in the yearly operational plan.

6.4 Conservation Area Development

The site concept maps in *Appendix 1* outline a number of key improvements as follows:

- Improvements to park access at the main entrance into the conservation area to improve visitor check-in and traffic flow.
- Expanding the campground to the west on the newly acquired lands.

- Attending to the water and natural resources on the property with strategies for invasive species control, removal and site naturalization.
- Improvements to the park roads and trails to support increased visitation, enhance visitor safety, manage drainage, reduce long term maintenance demands, address potential damage to adjacent habitat and address potential risks to wildlife species (such as nesting turtles).
- Doubling the size of the current trailer storage area to support the campground expansion and in response to visitor demand.
- Replacement of the reservoir fishing bridge, lookout tower, bridges and boardwalks over the life of this plan.
- Improving campground services and amenities in the area of the camp store.

In all areas where new development is planned, low impact development solutions should be considered. As noted in section 4.3 all projects will be subject to more detailed planning, and agency consultation as required to confirm planning and permit / approvals necessary for implementation.

6.5 Marketing

There are many marketing and communications activities for Valens provided by HCA including promotion through print, on-air radio ads and on various social media platforms.

The online camping reservation system is used by the majority of visitors to reserve a campsite. Camping cabins will be added to this system as well.

It is recommended that at a minimum, marketing objectives for Valens include the following:

- Market Valens as an affordable, quality, family day-trip and camping destination.
- Increase education and awareness of Valens natural environment and heritage.
- Review the survey and trail count data in this plan when developing market surveys.
- Leverage tourism partnerships to identify tourism and marketing trends.
- Market new features proposed in this plan to help attract interest, drive revenue, increase visitation, reach out to stakeholders, and serve the community.



7.0 CONSERVATION AREA MANAGEMENT

7.1 Land and Water Management

.1 Management Planning

Land and water management planning will be accomplished through adherence to the guidelines of the conservation area zones noted in this Master Plan, and through additional resource management plans developed by HCA as necessary during the life of this Master Plan. The overall intent will be to ensure protection and conservation of the significant natural areas at Valens noted as Nature Reserve (Wetland) and Natural Zones on Map 2. appended.

Environmentally Significant Areas (ESA) of Valens are protected within the Rural Hamilton Official Plan. Provincially Significant Wetlands (PSW) of Valens are also protected in accordance with the Provincial Policy Statement issued under the Planning Act. No new development or site alterations are permitted within or adjacent to ESA's unless it can be shown, through an Environmental Impact Statement (EIS) that there will be no negative impacts on the ecological features or functions of the ESA.

All sewage from washrooms will continue to be disposed of in septic tank-tile field systems. Sewage from tanks will be removed from Valens for disposal. Waste consisting of natural materials will be reused or composted inside the conservation area where feasible and appropriate. Otherwise, all solid waste will be removed from the conservation area for recycling or disposal.

Wherever possible, new development or redevelopment will be undertaken so as not to disrupt natural drainage. Zone resource management plans will seek to restore natural drainage where it has been disrupted by past or present development.

.2 Public Infrastructure – Utilities, Trails and Transportation

Public infrastructure such as utility corridors (watermains, storm and sanitary sewers, natural gas or oil pipelines, hydro and communication corridors), trails (footpaths, boardwalks) and transportation links may cross conservation area lands. These uses may also have associated rights-of-way, land use agreements, licenses of occupation, permits etc. that are to be considered in the management of the conservation area and when implementing items from this Master Plan.

When new public infrastructure projects are proposed within conservation area owned lands, such uses will be subject, but not limited to the following criteria:

- The need for the project, area of construction disturbance, and potential site disruption such as soil erosion, flooding, and vegetation loss.
- To maintain or where possible improve or restore key ecological linkages, habitat, and wildlife movement corridors.

- The potential public benefits of the project for research, education, or recreation in the conservation area.

HCA may require detailed environmental assessments, studies, and resource management plans in order to support such land uses.

7.2 Vegetation Management

Where active management is required for a particular plant species, it will be accomplished through an acceptable HCA resource management strategy considering the guidelines outlined in this Master Plan, and in accordance with policies of all governing agencies.

Forest plantations will be managed in accordance with the MNR approved forestry management plan for Valens.

Invasive species are wide spread throughout the conservation area and a significant threat to biodiversity and conservation values at Valens. See Sections 5.14.1.4 and 5.16 for more information on invasive species vegetation management.



Additional non-native plant species will not be deliberately introduced into the conservation area. Introduction of any new plant species by HCA will consider the biodiversity of this site and contiguous surroundings, historical data of species present in the area, native species research findings, and additional relevant species inventories, within an approved restoration and stewardship strategy. In this Master Plan “non-native” means species not native to Ontario as well as species native to Ontario but not to Valens. If established non-native plant species threaten natural heritage values, a program for their eradication will be developed subject to specific guidelines noted in the natural heritage inventory of this Master Plan.

Vegetation may be mowed only:

- Along the conservation area boundary, where mowing would assist in clearer boundary identification.
- In the development zone of this Master Plan to support public usage of the open space, and only to the extent necessary.
- As required along roadways and recreational trails for safety.
- To assist in the control of invasive species, trees and brush may be cut and pruned only:

- To enable resource management or facility development specifically authorized by this Master Plan or an HCA approved resource management or other implementation plan.
- To ensure public safety.
- In service easements i.e. Utility corridors, subject to specific service agreements.

Trees may not be cut for the purpose of providing firewood. Trees and brush cut in nature reserve and natural zones outside of the forest plantations will be left to deteriorate naturally as close as possible to where they have been felled, or if that is not feasible, may be used for firewood or wood chips in the conservation area.

Native insects and diseases affecting vegetation will be allowed to progress naturally, except where they threaten significant natural heritage values in nature reserve and natural zones, or significant aesthetic and infrastructure values in development zones. Non-native insects and diseases will be controlled where feasible. Where controls are undertaken, it will be directed as narrowly as possible to the specific insect or disease so as to have minimal effects on the surrounding environment. Biological controls will be used whenever possible.

Fires in the day use area are not permitted. Fire pit areas and fires are permitted with the campground operation.

Chemical fertilizers, herbicides, pesticides and suppressants will not be used for any vegetation management purpose except:

- Insect and disease control under the conditions set out in this section of the Master Plan.
- Eradication of non-native species where it has been demonstrated other methods are not feasible.
- Control of poison ivy in development zones.

7.3 Fish and Wildlife Management

Where applicable on the conservation area property, fisheries management will seek to maintain and enhance native, self-sustaining fish populations. Where applicable, waters in nature reserve zones may be closed to angling temporarily or permanently for fisheries or wildlife research or management purposes.

For the fishery Valens staff currently maintain a policy of no fishing in the conservation area from ice out to the opening of bass season to protect the Largemouth Bass fishery from exploitation during their breeding season. Valens staff also have a voluntary catch and release policy for fish caught within Valens CA. In winter ice fishing is allowed when Valens staff determine the ice to be safe enough for the activity. The voluntary catch and release policy extend to the ice fishing season as well.

For fishing bait currently, the reservoir follows the MNR policies in regards to what bait is allowed to be used. Staff are currently revisiting this given the risks posed to the fishery from unintentional releases and the potential for disease transfer to the reservoir. As well restricting the use of lead sinkers is also being explored given there are adequate alternatives that don't have the negative consequences the lead as a heavy metal has for non-target wildlife such as loons.

For wildlife, hunting and harvest are not permitted within the conservation area to protect the populations, and people with an exception for Research (see Section 7.7) This includes the fall duck hunting noted in the previous Master Plan.

For wildlife/human conflict HCA has developed the Hamilton Conservation Authority Wildlife Conflict Management Strategy. This strategy outlines the process and methods staff are to follow when dealing with any animal related issues within all conservation areas. This document was produced by the Hamilton Conservation Authority Wildlife Management Committee (WMC). The WMC was a special committee of the Hamilton Conservation Authority (HCA) that was established in May 2014 based on HCA staff recommendation and at the direction of the HCA Board of Directors. The purpose of the WMC was to develop best management protocols and practices for the management of wildlife on HCA lands.

Valens Staff currently manage geese through relocation to McCormack Pond each summer. This requires a permit from the Canadian Wildlife Service. This permit is a temporary solution until more permanent solutions are in place. HCA staff will explore through the Master Plan management options and strategies for discouraging geese on the day use beach. Options to discourage or remove geese from this area will adhere to current wildlife regulations and HCA's wildlife policies and procedures. For Valens to accomplish this we will likely need to modify the large expanse of the day use area with features to deter the Geese combined with accepting their presence to some degree.

Additional non-native animal species will not be deliberately introduced to the conservation area, with the exception of animals brought into the conservation area for educational and interpretive purposes, or to assist with invasive species control. To avoid unintentional introductions of non-native species, HCA will endeavour to educate visitors and the general public with more detailed information on fish and wildlife regulated and permitted activities at Valens.

If already established non-native species threaten the conservation area values, a program for their eradication may be developed if feasible and practical. Missing native species may be re-introduced, and existing populations replenished if feasible and acceptable to HCA.

7.4 Cultural Heritage Management

Significant cultural heritage features, such as the historic buildings, will be protected from incompatible development in the conservation area. Incompatible resource uses and

recreational activities will be restricted or prohibited where necessary to protect cultural heritage resources.

Archaeological and historical artifacts may only be removed, and heritage landscapes altered, as part of an HCA approved cultural heritage research or management plan.

Archaeological studies have not been completed at Valens. Further historic research and archaeological study is encouraged. Management strategies for any archaeological sites found in the future may range from allowing the sites to remain without interference, to research, excavation, and rehabilitation. Protection and management will be undertaken in consultation with all governing agencies and first nations.

7.5 Conservation Area Operations

HCA will provide staff with information and resources as required to operate the conservation area on a day to day basis. This will include specific direction for the management and operation of all facilities and activities and address such topics as budgets, staffing, maintenance, enforcement and emergency services. The operation plan will be reviewed annually and updated as required.

Self-serve facilities may be developed, and individual volunteers and partner organizations may be involved in conservation area programs as approved by the HCA.

The HCA has the right to suspend operations of any facilities or services due to funding limitations, but in so doing will ensure that heritage values are not impaired and customer service standards are affected as little as possible.

New business practices may be introduced into the conservation area operations in accordance with HCA policy such as:

- Improving operating efficiency and controlling costs
- Contracting out some operating functions.
- Improving customer service standards.

7.6 Education

Education in the conservation area is intended to develop visitors' awareness and appreciation of Ontario's natural and cultural heritage, fostering a commitment to protect that heritage for all generations. Education opportunities are meant to be educational and recreational, formal and informal, and accessible to all. Information, education, and outdoor recreation are the three main components of education in the conservation area. The level of service provided at Valens will be determined by its significance and visitation.

7.7 Research

Valens, like all of HCA's properties, provides in essence an opportunity for living laboratories. HCA Ecologists monitor the health of lands using established protocols as well when needed can develop special research programs to answer resource related questions. Included below are a few potential projects that were identified while writing this plan:

- Research if there are any cold-water reaches within the tributaries found in Valens CA
- Research impacts of the Common Carp population on reservoir
- Research southern most tributary in CA and associated online ponds to determine what resources are present and if there is an opportunity for improving its function for the overall benefit of the CA's ecology.
- Research if there is an impact from sport fishing on the Fishery

Outside Research by qualified individuals that contributes to the knowledge of natural and cultural history and to environmental and recreational management will be encouraged by HCA staff.

All research projects will require authorization from HCA and authorization is obtained by contacting the staff ecologists who administer the process and issue letters of permission.



7.8 Recreation

Entry to the Valens will be controlled year-round, and HCA will enforce the collection of entrance fees from visitors. Day use parking spaces are provided on a first come, first serve basis and visitors may be restricted from entering the conservation area when the parking areas are full.

The following motorized recreational activities will not be permitted in the conservation area:

- All –terrain vehicle use
- Motor bikes on trails
- Snowmobiling
- Unmanned aerial vehicle (UAV)
- Gasoline powered motors on the lake

The following recreational activities are permitted in the conservation area:

- Camping
- Hiking
- Cycling
- Fishing
- Swimming
- Picnicking
- Boating (personal watercraft outside of spawning and nesting areas)
- Winter Activities: Winter Camping, Cross Country Skiing, Snowshoeing, Ice Skating/Hockey on the reservoir
- Geocaching
- Equestrian use by permission



A long-term goal of this Master Plan is to provide visitors with appropriate, high quality, sustainable recreational experiences. Recreational opportunities are to be provided that are appropriate to the conservation area and Master Plan zones outlined in Section 3.6. as well as Section 10.2. Recreational areas are identified on the maps in *Appendix 1*.

7.9 Partnerships

HCA values the community support from area residents and landowners, businesses, service clubs, interested First Nations, volunteers, and volunteer organizations that currently or could contribute in a variety of ways at Valens. The HCA will continue to nurture existing support and will seek out new opportunities for partnerships. Current support provided by the Hamilton Conservation Foundation and the Friends of Valens is encouraged and welcomed. Collaborative partnerships will continue to be sought to help HCA to efficiently achieve its goals and objectives at Valens.



HCA also values the relationships with neighbouring landowners and working cooperatively to manage natural areas and the species that utilize and inhabit Valens natural areas. HCA Stewardship Action Plans, public consultation, and stewardship work are examples of this and are to be encouraged for the life of this Master Plan.

Volunteers are governed by volunteer policies set by

HCA. Volunteer programs shall be maintained and developed to provide for recruitment, orientation, training, supervision, health and safety instruction, evaluation and recognition. Volunteer programs shall be considered in all business decisions made by HCA in the operation of this conservation area.

7.10 Paid Staff

A supplemental operation plan is recommended to be developed for Valens by HCA staff once this Master Plan is adopted.

Valens, similar to staffing at other conservation areas, includes full time permanent employees and a number of part time casual employees to undertake its operations.

In addition, staff from other departments at HCA are involved in varying capacities with the management and operation of Valens. Staff may also be involved in supervising the activities of outside consultants, partners, or contractors retained by HCA.



8.0 FINANCIAL

8.1 Attendance and Revenue Forecasts

Visitor attendance, and operating revenue and expenses for Valens is listed in *Appendix 4* and 5.

Visitation to Valens has remained stable over the past five years, however there is room to attract more visitors in the 20 to 30 age group. The majority of campers and day use visitors hear about Valens by word of mouth, live within a one-hour drive of the conservation area, and are returning visitors. Further analysis of the visitor data is in Section 8.4 business model.

Valens financial success is expected to continue to rely heavily on camping, with opportunity to increase revenue by adding more campsites and campground services. Day use visitation offers opportunities for increased revenue generation through special events and programs, enhancing existing features in the day use area will also help to attract and retain repeat visitors.

8.2 Capital Projects

The capital development priorities list in *Appendix 2* provides preliminary estimates for the development envisioned in the Master Plan. As noted in Section 3.7 and 6.0, the following capital development priorities are proposed for the next ten years at Valens:

1 Replace Significant Park Features

The reservoir fishing bridge, lookout tower, and bridges and boardwalks will need to be replaced within the next ten years. HCA staff are monitoring, maintaining and repairing these features for public safety until replacements can be implemented.

The reservoir fishing bridge and lookout tower are popular and well-used features at Valens, with the bridge an important linkage in the conservation area. Replacement of the bridge and tower are recommended as high priority projects in the capital development plan. Major fundraising initiatives will be required to support these significant projects.



The reservoir bridges and boardwalk projects are lower priority and recommended for replacement over the next three to ten years. These trail features are popular and well-used,

as supported by our trail data noted in *Appendix 5*.

.2 Add New Park Features

The park entrance and campground are targeted as priority areas for new capital development to drive revenue and improve customer service. See *Appendix 1*. Map 4 and 5 for more information.

New entrance features are proposed for visitor safety and to improve traffic flow in and out of the conservation area. Visitor check-in parking in front of the gatehouse is recommended as a priority item. New capital investment on the gatehouse building and roadways will also be required to round out the improvements in this area. This work is recommended to be phased-in with the campground expansion.

Campground expansion is a priority item shown in this plan to meet high demand at Valens for more serviced camp sites. This plan identifies campground expansion for the west lands (current group camping area), as well as new camping cabins east of the spruce hollow loop. Doubling the size of the trailer storage area near the park entrance is also recommended with this expansion, as well as reviewing all the trailer dump stations in operation.

To support campground expansion and improve the visitor experience, new features at the camp store area are proposed. See Map 5 for more information.

Relocation of the Cook Cabin to another area of the property could allow for better public access and educational use. See section 9 for more information.

.3 Enhance Existing Park Features

Rounding out the capital development projects for this master plan is enhancement of existing park features to support day-use activities in the conservation area. From our visitor data noted in *Appendix 5*, picnic and trail facilities drive the majority of day-use visits to Valens. Day-use enhancements are recommended to retain our current visitors, and attract new repeat visitors to Valens. Utility service improvements and washroom building upgrades will continue to be priority capital items in the park operation. Improvements to the parking areas, trail system, picnic areas near the beach, function of the boat launch including invasive species control measures for the reservoir, and relocation of the boat rental area are recommended to be phased in the annual capital development plan.

Capital projects should not be started until a long-term strategy with timelines and costs for each project are clearly stated and sufficient resources are available to complete them. As well, the additional operational costs for each item should be factored into the capital strategy.

8.3 Funding Sources

Operation of Valens is entirely self-funded. Financial statements are audited every year and are available to the public once approved by the HCA Board of Directors.

Revenue is generated at Valens through gate admissions (gate and pre-sold tickets), vehicle passes, camping reservations and camping services, day-use concessions (food, novelty sales etc.) boat rentals, and miscellaneous items as outlined in *Appendix 4*. Special events and programs help bring new visitors to the conservation area, with word of mouth advertising bringing most visitors to Valens. Valens has operated for over fifty years in the community and has a number of visitors who have returned faithfully over the years with their families.

Financing for special projects and annual capital development is provided through the City of Hamilton, grants, sponsorship, corporate donations and private donations. The Hamilton Conservation Foundation also provides funding for specific projects. There is good potential for increasing donor funding, donor recognition is also a key element that needs to be sustained.

User and membership fees will continue to be the primary funding source for the operation of Valens. As the campground operation expands in this Master Plan, HCA will need to wisely manage available resources to efficiently serve more visitors while protecting and managing the natural areas and resources on the property.

8.4 Business Model

Valens has succeeded in becoming an affordable, quality, camping and day-use destination for resident families, their visiting friends and relatives, and tourists. Its product has multi-market appeal, and operates on a strategic principal of “user-pay” to break even or realize net operational revenue for recreational programs.

HCA recognizes that the natural features and conservation values of Valens are a significant factor in Valens popularity and success. Consequently, supporting sustainable natural resource management and conservation of significant natural areas is to be addressed in all business decisions for the implementation of this Master Plan. The goals outlined in Section 3.2 are provided to help guide this process.

Increasing revenue at Valens will require HCA to refine their marketing, business, and development strategies to:

- Continue to attract campers and day use visitors, and provide quality recreational facilities and services so they will be encouraged to return.
- Diligently sustain the natural resource value of the conservation area by limiting activities to the zones prescribed in this Master Plan.



- Continue to invest in the campground facilities to keep pace with recreational trends and improve operational efficiency.
- Continue to promote Valens as a natural playground offering families open space for unstructured play, nature appreciation, and outdoor recreation.
- Provide visitors with opportunities to spend more money when on site.
- Continually monitor customer service, and conduct on-site and market research campaigns as necessary to measure customer satisfaction.
- Continue to explore pilot projects (such as the camping cabins), and best management practices as means of growing revenue and operating effectively.
- Continue to leverage tourism industry partnerships, public relations, community outreach, and corporate sponsorship.

Cost recovery is a prime requirement for all services and programs delivered at Valens. In the development of programs, the following factors will be considered: anticipated attendance, income sources, market, volunteer resources, HCA staffing requirements, advertising, insurance, administration, operation costs and maintenance expenses.

Concepts embodied in this Master Plan are to be weighed against the marketing demands for increased performance, attendance, programming, market penetration, awareness and ultimately financial return.



9.0 CAMPGROUND MANAGMENT

9.1 Campsites

Valens currently offers 225 campsites, including 125 sites with electrical and water hookups, 9 group areas and walk-in sites and is open to all members of the public looking for a vacation experience, rather than a seasonal residence. See *Appendix 1 Map 7* for more information.

Campsites offer lake views and forest covered areas, radio free zones, and are designated alcohol free year-round. Up to six people, three shelters, and one camper unit are permitted per campsite. One vehicle is free with the camping permit, and up to two vehicles are allowed per site. More overflow vehicle parking is happening in the campground from campsite visitors, this camping trend is expected to continue. The majority of campers arrive with trailers over 20ft, and the 30amp electrical sites are in high demand and fully-booked through the camping season.

Camping is available year-round. The camping season runs from the May Long Weekend to Thanksgiving, and an off-season winter camping program runs from January to April. Visitors surveyed tend to stay 2-3 nights, camp 2-3 times per year, and reserve their camp sites in advance through online booking. Consequently, most camping check-ins at the park require visitors to park at the gate and come into the gatehouse to complete their transaction. Development of new check-in parking and visitor services at the gatehouse as noted in this Master Plan are proposed to help improve customer service and consequently revenue generation for Valens.



Camping check-in is from 2pm and check out is before 1pm. Quiet hours are enforced from 10:30pm to 8:00am. Valens has been an oasis for outdoor nature lovers since the park opened in 1968.

Valens campers value the look and feel of the “north” in a peaceful, family friendly atmosphere within a close drive to home, as noted in the visitor survey comments in *Appendix 5*.

Campground management will continue to support this value by protecting natural areas adjacent to campsites, implementing tree planting, and controlling invasive species to help maintain the natural appeal.

The campground expansion proposed in this Master Plan is intended to follow this successful operation, and more campsites will be added pending detailed environmental review and site

planning. In response to camping trends observed, plus feedback from our visitor surveys, all new campsites are recommended to be fully serviced and accommodate trailers over 20 ft. in length. In addition, this plan recommends doubling the size of the trailer storage offered at Valens by expanding west of the current storage area, as well as enhancing the camp store area for the campground and visitors using the trail system.

9.2 Cabins

Camping cabins were first noted in the 1988 Master Plan as one way of attracting visitors in the shoulder seasons as well as the summer. The 2000 Master Plan took this idea further and proposed introducing 5 new, limited service cabins or yurts for Valens, to be constructed or phased in as the market dictates. Cabins were to be limited to having a common area, bedroom(s), communal water, electricity, and outdoor cooking area and to be located in an area that would not detract from vistas of the reservoir.

Since 2000 HCA staff have been working on this initiative and by the writing of this plan construction has started on 6 new small camping cabins, and to convert the drumlin picnic pavilion into two large camping cabins. These cabins are shown in *Appendix 1*, Map 7 and will open to the public in 2020. The small cabins will contain a common area with kitchenette, bedroom, and three-piece bathroom. The large cabins will contain a common area with kitchenette, two bedrooms, and a three-piece bathroom. All cabins will be fully serviced and winterized, available to be booked year-round. The current booking system will need to be evaluated by HCA to add this item into the reservation suite.



The move to cabins is on trend with the growing number of visitors in Ontario requesting roofed accommodations in campgrounds. Research conducted by Ontario Parks revealed many of their long-time visitors don't want to sleep in tents or haul trailers around but still want the camping experience. In response, roofed accommodations are springing up around the province, giving visitors the comforts of home without having to bring anything other than maybe a sleeping bag and food to their campsite.

Valens has capacity to expand the camping cabin program in future, within the development zone prescribed in this Master Plan. It is recommended however, that HCA operate the cabins for three to five years and evaluate market conditions accordingly.

With both new campsites and camping cabins proposed, it is also recommended that a supplemental campground operation plan be developed by the HCA for Valens once this Master Plan is adopted.

10.0 PROGRAMING

10.1 Education and Interpretation Programs

Valens currently offers a limited number of education and interpretation programs to campers and day-use visitors as staff time and resources allow. HCA also supports partnerships with outside agencies to run children's day-camps and camping programs. A small number of visitors are becoming interested in helping with program delivery, and could be recruited as volunteers with training and supervision. From our public outreach for this plan, the majority of visitors surveyed indicated they would like to see more interpretive programs and activities offered at Valens. Suggestions included live interpretive shows, guided nature hikes, geocaching, and camp crafts.

Education programs are an opportunity to entice new visitors to Valens, retain current visitors, and attract families to use the property for longer vacations. Opportunities for outdoor and nature focused programs at Valens range from individual hands-on activities, to educational demonstrations, live shows, workshops, self-guided hikes and more.

All programs should relate to HCA's strategic value of providing outdoor learning experiences for students, teachers and the community, increasing knowledge and awareness of the value of our environment and heritage.

10.2 Recreation

Since opening to the public in 1968, Valens has offered a wide range of outdoor recreational activities that are enjoyed by visitors of all ages and backgrounds.

During the winter, ice fishing and the ice fishing derby is a popular activity, as well as skating on the reservoir. Winter camping is also showing strong interest. Weather



permitting, visitors may enjoy other snow-based activities such as snow shoeing, cross country skiing, and winter cycling (fat bikes) on the park trails and roads. In the summer months, most visitors come to Valens to picnic, walk the trails, fish, paddle on the reservoir, and camp. Boat rentals are popular and book up very quickly during peak season. Camping continues well into the fall.

The Maps in *Appendix 1* identify the following new recreation features for the conservation lands:

- The new Trails Master Plan provides for the creation of 2.0 Km of new recreational trails between the campground and day-use area. This new trail, as well as the existing recreational trails are intended to be multi-use and provide opportunities for hiking, bicycling, winter snow shoeing and cross-country skiing, and nature appreciation. Horseback riding and wagon / sleigh activities may also be considered as part of an HCA approved program, and where this use will not damage trail infrastructure such as bridges and boardwalks. Trail staging areas are planned for the campground store, fishing bridge, and day-use parking areas.
- All existing recreational trails are recommended to be formalized granular surfaced trails, and trail bridges and boardwalks upgraded to meet current HCA standards.
- The boat rental operation is to be moved to the day-use beach for better customer service.
- The boat launch area is to be improved for visitors bringing their own watercraft to Valens.
- Picnic areas are to be enhanced with additional shade tree planting and shade structures that may be reserved by groups.
- Continue to offer flexible open space for unstructured outdoor recreational activities and programs, allowing people to experience the natural environment. The development of large play structures, and playground infrastructure is no longer feasible due to safety and land requirements, and better served in a municipal park setting.

10.3 Special Events and Programming

Organized public events have varied over the years, including fishing derbies and films in the forest. The HCA supports offering public programs and special events at Valens that promote outdoor recreation, health, and well-being and strengthen public awareness of the importance of the natural environment.



Cost recovery is a prime requirement for all programs delivered. For a successful program, the following factors need to be considered: anticipated attendance, income sources, market, volunteer resources, HCA staffing requirements, advertising, insurance, administration, operation costs, and maintenance expenses.

11.0 FACILITY RENTALS

Valens will continue to offer group camping areas and the Powell Pavilion for rental. Additional picnic pavilions are proposed to be added to the day-use area for rental as noted in Section 5.2

The YMCA of Oakville has a lease agreement with HCA to operate an outdoor education and leadership program on the north side of the reservoir. Facilities in place for this program include a group camping area, boat dock, picnic shelter, storage outbuildings, and archery range. HCA is working with this stakeholder to evaluate future program and capital investment needs anticipated for the life of this Master Plan.

HCA receives income from renting the Robson House and Valens Homestead, and leasing agricultural lands off Valens Road . As noted in Section 6.0 these agreements are recommended for review with the goals of this Master Plan.

Valens has been used as a filming location, and filming on site will continue to be supported with strict procedures so the integrity of the site is not sacrificed.

Wedding parties may use the site for the service, photographic opportunities, for outdoor reception and more. School and communtiy groups are welcomed to reserve use of the property for track and field meets, day-use camps etc.



12.0 SUMMARY

Valens Lake Conservation Area has been successfully operating for over 50 years, offering generations of campers and day-use visitors the look and feel of the “north” close to Hamilton, Cambridge, Burlington and Guelph.

This Master Plan identifies the natural features of the property to be protected, and land use zones intended to help guide future planning, development, and management of the conservation area.

It is the overall intent of the HCA to wisely manage the conservation area and undertake supplementary management and operating plans and initiatives to support the goals and objectives of this Master Plan within the next 10 years.



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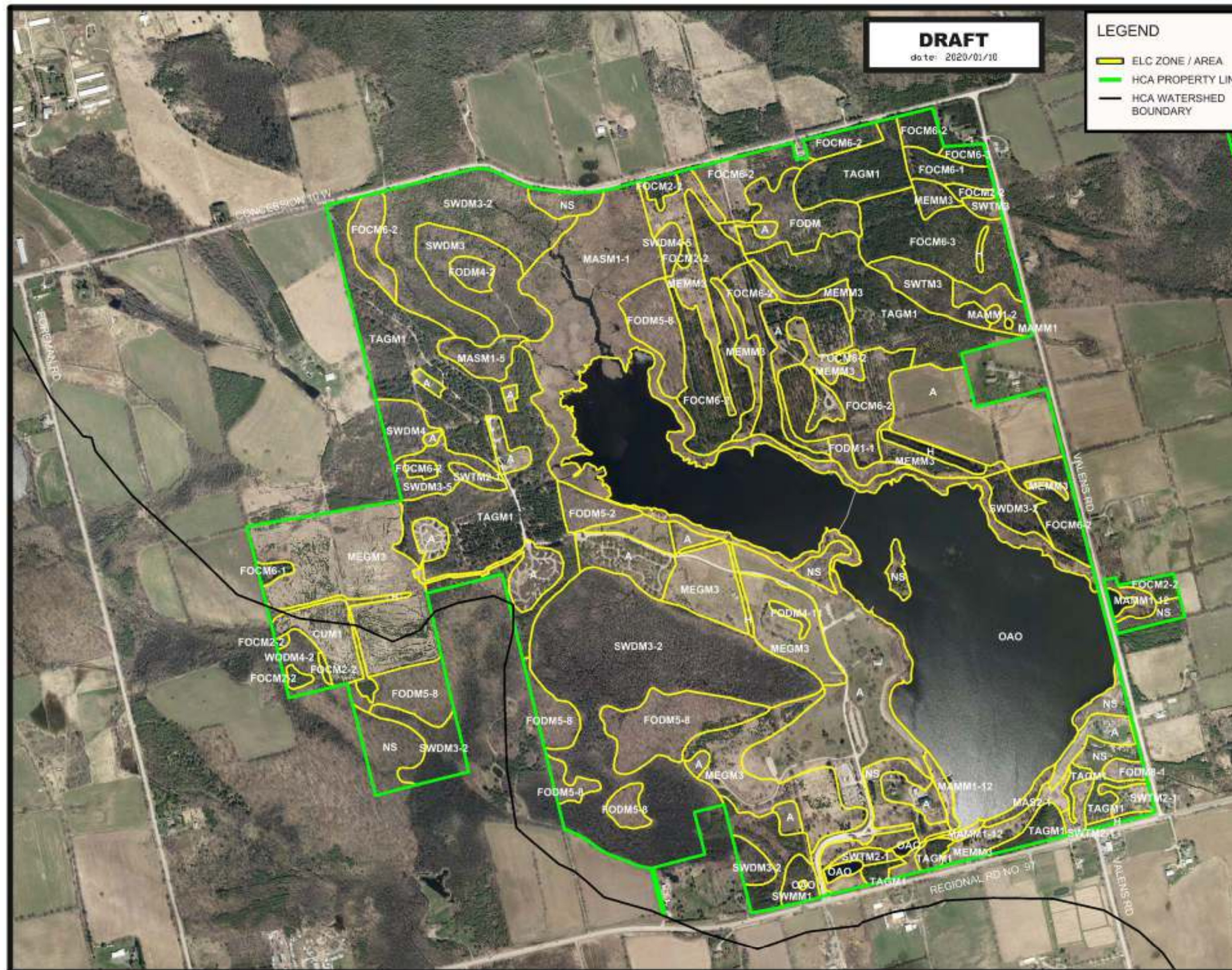
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DRAFT

date: 2020/01/10

LEGEND

- ELC ZONE / AREA
- HCA PROPERTY LINE
- HCA WATERSHED BOUNDARY

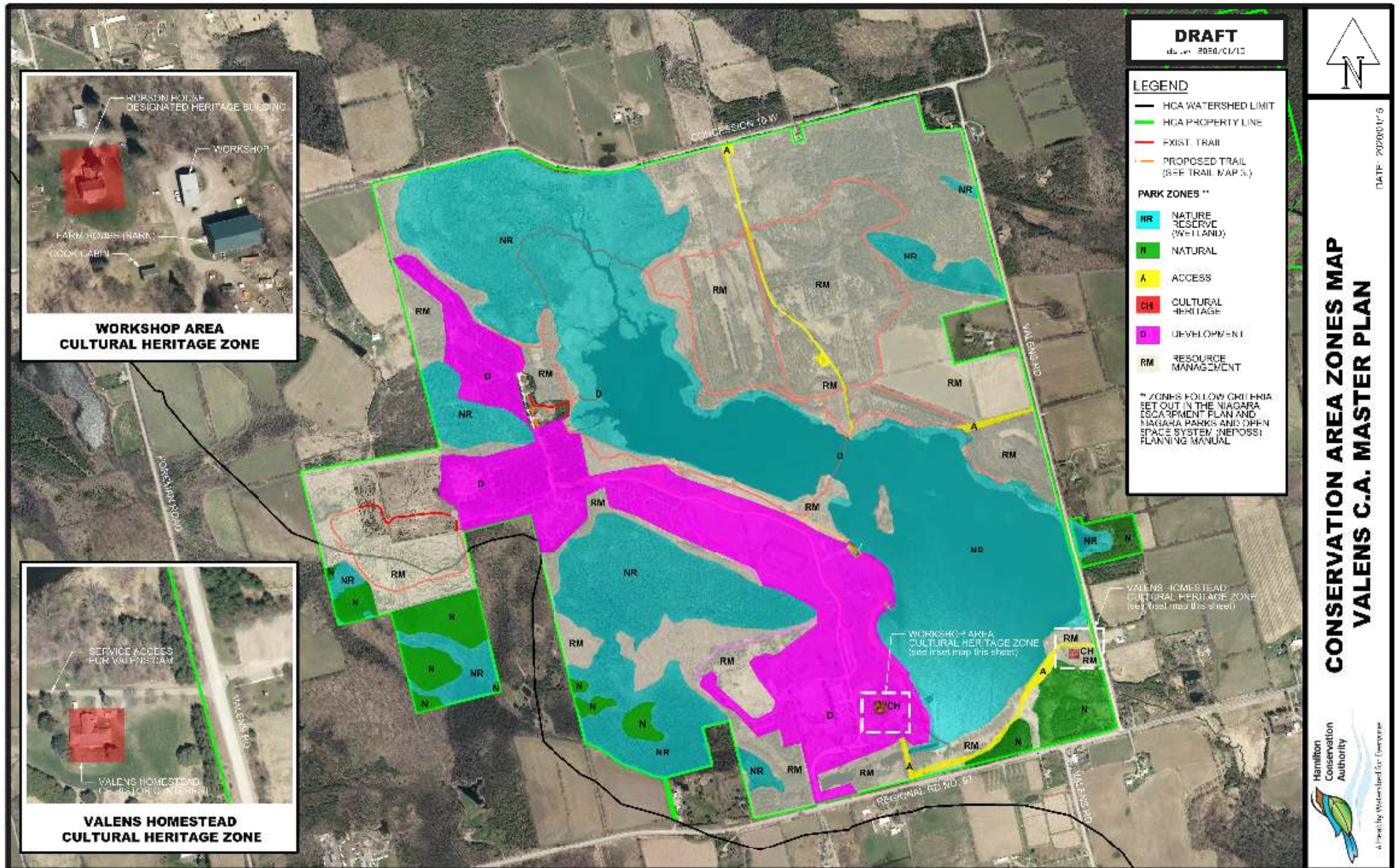
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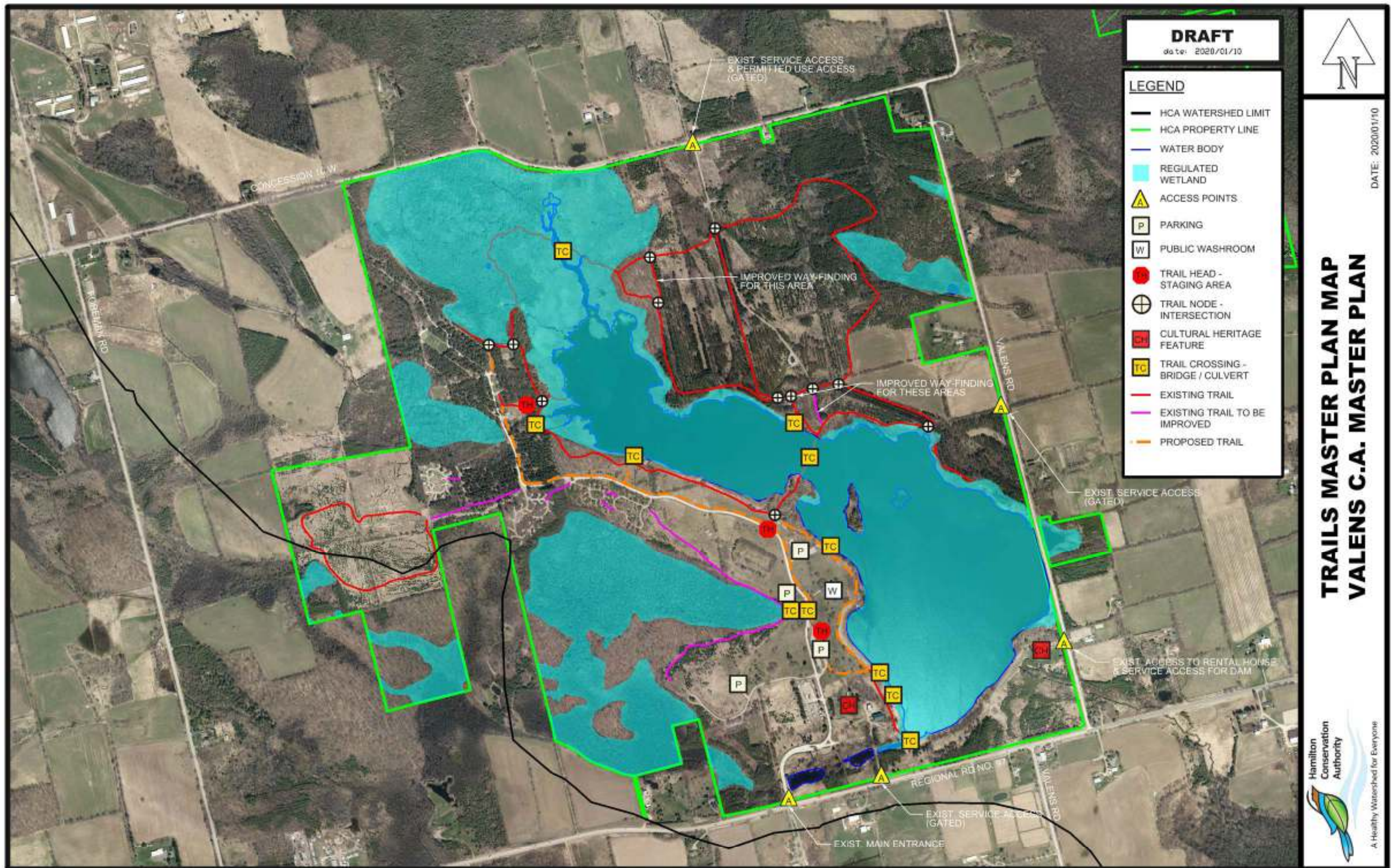
- OA0** OPEN AQUATIC
- A** ANTHROPOGENIC
- FOCM2-2** DRY-FRESH WHITE CEDAR CONIFEROUS FOREST
- TAGM1** CONIFEROUS PLANTATION
- FOCM6-1** DRY-FRESH WHITE PINE CONIFEROUS PLANTATION
- FOCM6-2** DRY-FRESH RED PINE CONIFEROUS PLANTATION
- FOCM6-3** DRY-FRESH SCOTCH PINE CONIFEROUS PLANTATION
- FODM1-1** DRY-FRESH RED OAK DECIDUOUS FOREST
- FODM4-2** DRY-FRESH WHITE ASH HARDWOOD DECIDUOUS FOREST
- FODM4-11** DRY-FRESH BLACK LOCUST DECIDUOUS FOREST
- FODM5-2** DRY-FRESH SUGAR MAPLE-BEECH DECIDUOUS FOREST
- FODM5-8** DRY-FRESH SUGAR MAPLE-WHITE ASH DECIDUOUS FOREST
- FODM8-1** FRESH-MOIST POPLAR DECIDUOUS FOREST
- WODM4-2** WHITE ASH DECIDUOUS WOODLAND
- MEMG3** DRY-FRESH GRAMINOID MEADOW
- MEMM3** DRY-FRESH MIXED MEADOW
- H** HEDGEROW
- SWDM3** MAPLE MINERAL DECIDUOUS SWAMP
- SWDM3-2** SILVER MAPLE MINERAL DECIDUOUS SWAMP
- SWDM4** MINERAL DECIDUOUS SWAMP
- SWDM4-5** POPLAR MINERAL DECIDUOUS SWAMP
- SWMM1** WHITE CEDAR MINERAL MIXED SWAMP
- SWTM2-1** RED-OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP
- MAMM1** GRAMINOID MINERAL MEADOW MARSH
- SWTM3** WILLOW MINERAL DECIDUOUS THICKET SWAMP
- MAMM1-12** COMMON REED MINERAL MEADOW MARSH
- MASM1-1** CATTAIL MINERAL SHALLOW MARSH
- MASM1-5** BROAD-LEAVED SEDGE MINERAL SHALLOW MARSH
- NS** NOT SURVEYED

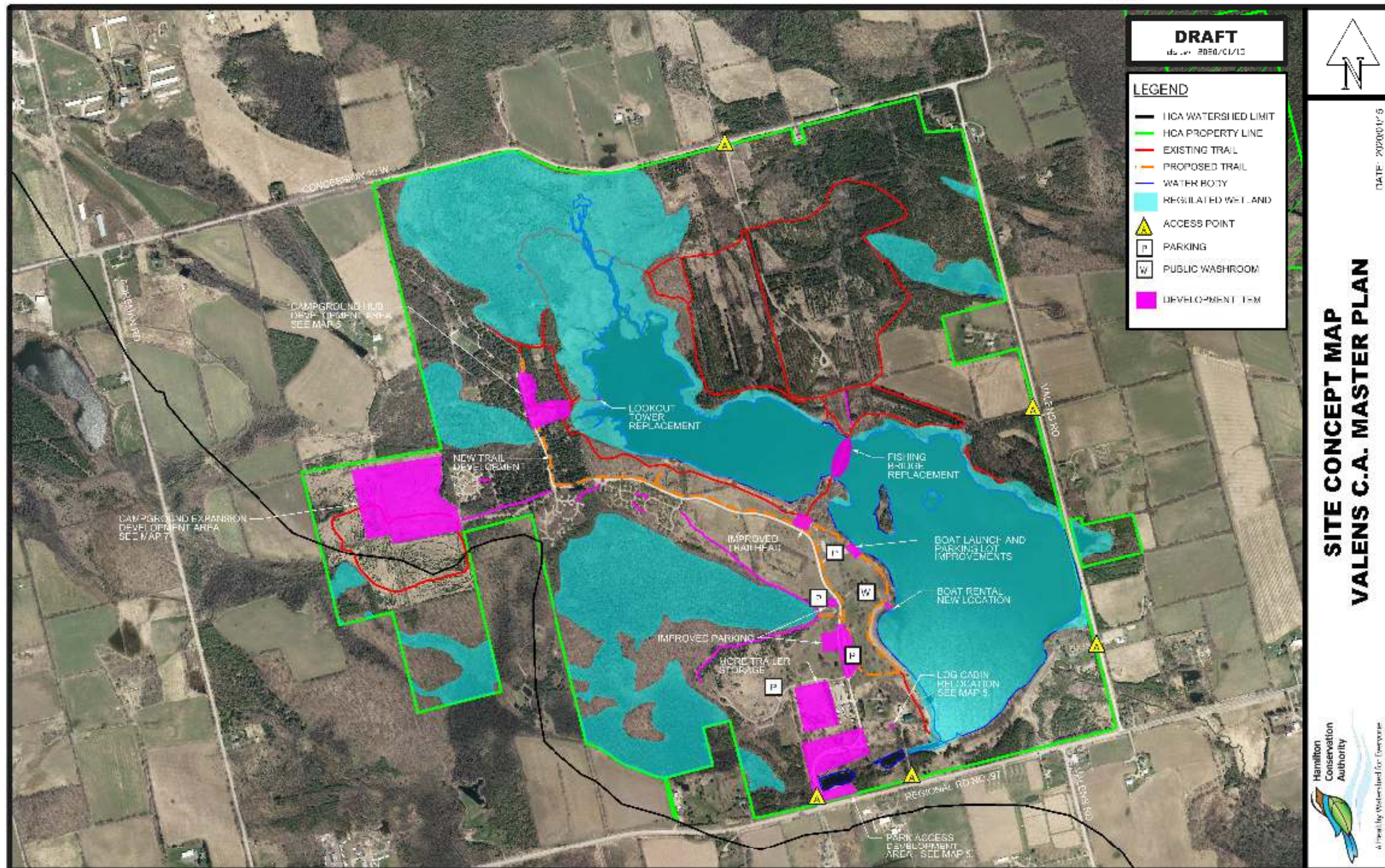


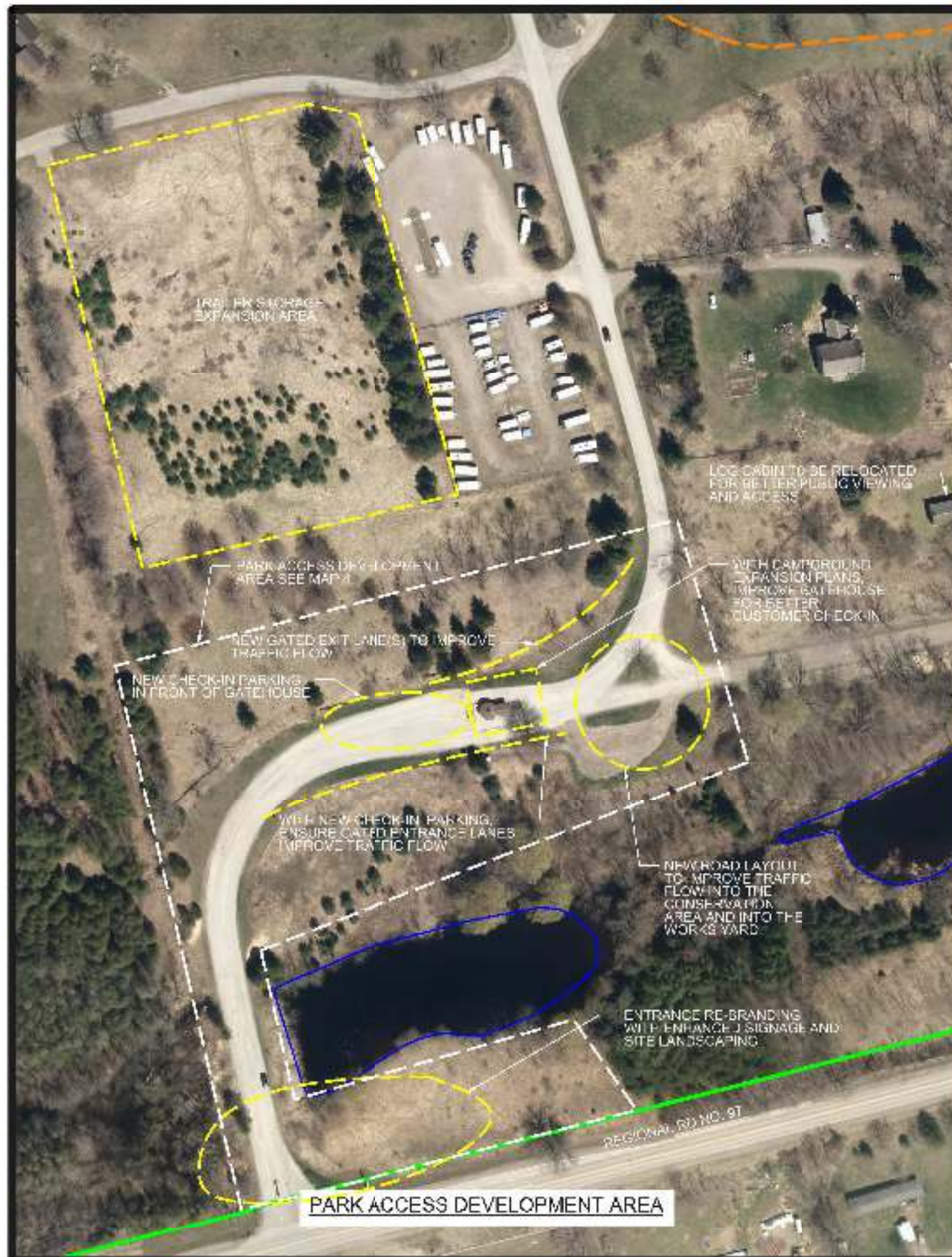
DATE: 2020/01/10

**ECOLOGICAL LAND CLASSIFICATION MAP
VALENS CONSERVATION AREA
MASTER PLAN**







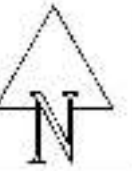


DRAFT

DATE: 2020/01/13

LEGEND

- HCA WATERSHED LIMIT
- HCA PROPERTY LINE
- EXISTING TRAIL
- PROPOSED TRAIL
- WATER BODY
- CONCEPT AREA SEE MAP 4.
- DEVELOPMENT TEM



DATE: 2020/01/13

**SITE CONCEPT AREAS MAP
VALENS C.A. MASTER PLAN**

DRAFT

date: 2020/01/10



DATE: 2020/01/10

BUILDING MAP VALENS C.A. MASTER PLAN

LEGEND

- | | |
|----------------------------|--------------------------|
| ① GATEHOUSE | ⑭ TAMARACK WASHROOM B |
| ② STORAGE SHED A | ⑮ CEDAR WASHROOM |
| ③ COOK CABIN | ⑯ CAMPGROUND STORE |
| ④ FARM HOUSE | ⑰ CAMPSTORE PAVILION |
| ⑤ WORKSHOP | ⑱ PINEGROVE WASHROOM |
| ⑥ ROBSON HOUSE | ⑲ HILLTOP WASHROOM |
| ⑦ STORAGE SHED B | ⑳ WILDERNESS PAVILION |
| ⑧ PUMP HOUSE | ㉑ EQUIPMENT STORAGE SHED |
| ⑨ POWELL PAVILION | ㉒ RESIDENCE BARN |
| ⑩ BEACH HOUSE | ㉓ VALENS HOMESTEAD |
| ⑪ DRUMLIN CABINS 1 & 2 | ㉔ MAPLENOOK WASHROOM |
| ⑫ SPRUCE HOLLOW WASHROOM A | ㉕ BCAT RENTAL BUILDING |
| ⑬ TAMARACK WASHROOM A | ㉖ OBSERVATION TOWER |
| | ㉗ SMALL CABIN 1 |
| | ㉘ SMALL CABIN 2 |
| | ㉙ SMALL CABIN 3 |
| | ㉚ SMALL CABIN 4 |
| | ㉛ SMALL CABIN 5 |
| | ㉜ SMALL CABIN 6 |

— HCA WATERSHED LIMIT
— HCA PROPERTY LINE

● DESIGNATED HERITAGE BUILDING PROTECTED UNDER THE ONTARIO HERITAGE ACT

● HISTORIC BUILDING OF INTEREST

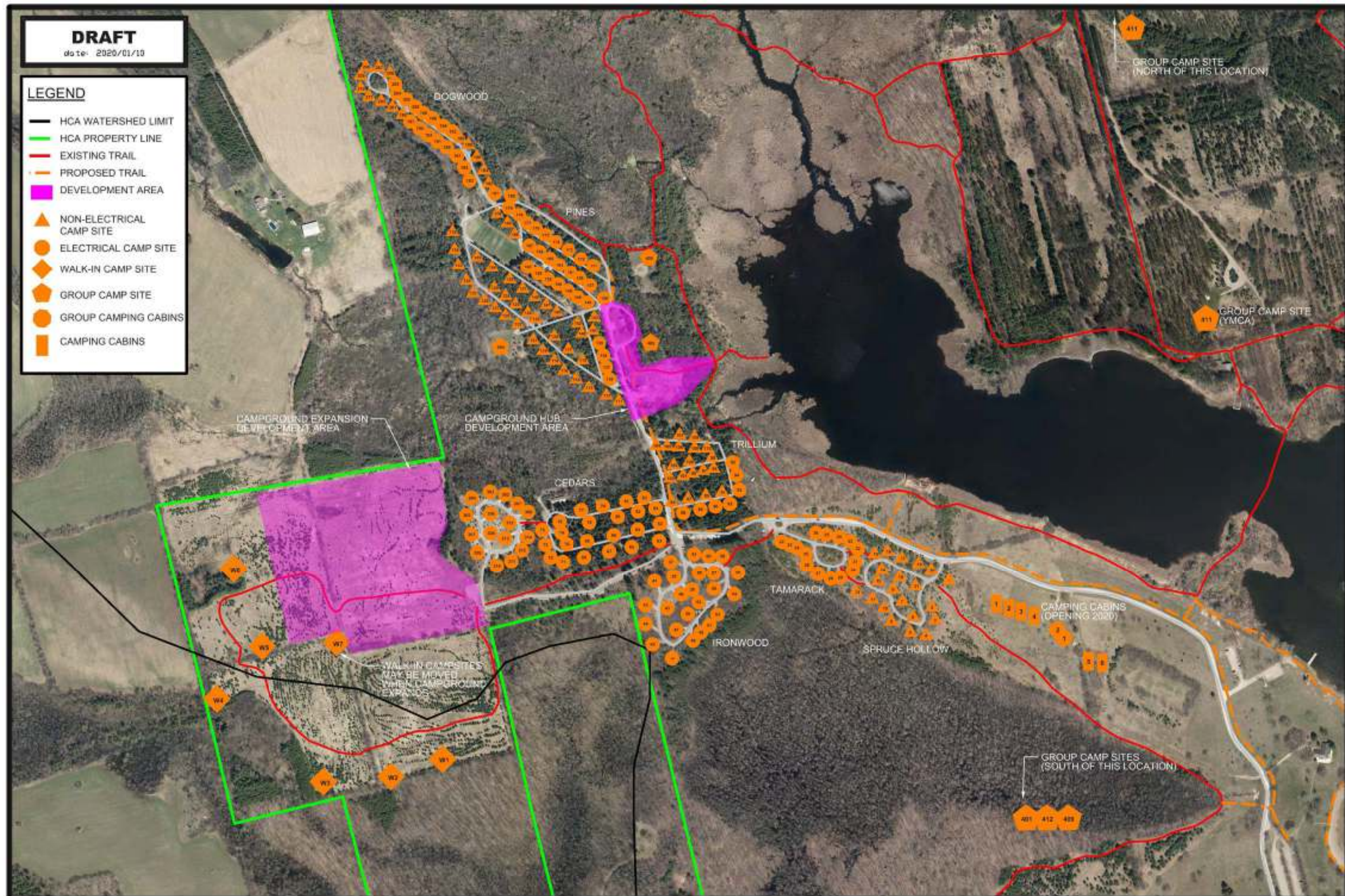


DRAFT

date: 2020/01/10

LEGEND

- HCA WATERSHED LIMIT
- HCA PROPERTY LINE
- EXISTING TRAIL
- PROPOSED TRAIL
- DEVELOPMENT AREA
- ▲ NON-ELECTRICAL CAMP SITE
- ELECTRICAL CAMP SITE
- ◆ WALK-IN CAMP SITE
- ⬡ GROUP CAMP SITE
- GROUP CAMPING CABINS
- CAMPING CABINS



CAMPGROUND MAP

VALENS C.A. MASTER PLAN

DATE: 2020/01/10

APPENDIX 2

DRAFT - VALENS CAPITAL DEVELOPMENT PRIORITIES: 2020 - 2030**A. Site Concept Improvements** ***Budget (3.5 M)**

**A1	Fishing Bridge Replacement	1.2 M
**A2	Log Cabin Relocation	400,000
A3	Lookout Tower Replacement	250,000
A4	New Campground – Expansion	300,000
A5	Campground Hub Area	350,000
A6	Park Access / Gatehouse Improvements	350,000
A7	New Multi-Use Trail, Trail Kiosks	250,000
A8	Day Use Parking Area Upgrades	250,000
A9	Boat Rental Relocation	50,000
A10	Boat Launch	25,000
A11	Trailer Storage Expansion	100,000

B. Conservation Area Improvements ***Budget (1.4 M)**

B1	Perimeter Fencing	25,000
B2	Perimeter Service Gates	10,000
B3	Dam Access Improvements	25,000
B4	Trail Formalization	150,000
B5	Bridges and Boardwalks	300,000
B6	General Building Improvements	400,000
B7	Invasive Species Management	150,000
B8	Site Signage	30,000
***B9	Natural Area Restoration	150,000
***B10	Resource Management Restoration	100,000
***B11	Wetland Area Restoration	50,000

* Budget costs are in 2019 dollars, projects and budgets to be reviewed annually.

** Major capital item dependent on fundraising.

*** Costs subject to ecological findings and recommendations.

APPENDIX 3



Eight Guiding Principles in the Conservation of Built Heritage Properties

The following guiding principles are ministry statements in the conservation of built heritage properties and are based on international charters which have been established over the century. These principles provide the basis for all decisions concerning good practice in heritage conservation around the world. Principles explain the "why" of every conservation activity and apply to all heritage properties and their surroundings.

1. RESPECT FOR DOCUMENTARY EVIDENCE:

Do not base restoration on conjecture.

Conservation work should be based on historic documentation such as historic photographs, drawings and physical evidence.

2. RESPECT FOR THE ORIGINAL LOCATION:

Do not move buildings unless there is no other means to save them.

Site is an integral component of a building or structure. Change in site diminishes cultural heritage value considerably.

3. RESPECT FOR HISTORIC MATERIAL:

Repair/conservé - rather than replace building materials and finishes, except where absolutely necessary.

Minimal intervention maintains the heritage content of the built resource.

4. RESPECT FOR ORIGINAL FABRIC:

Repair with like materials.

Repair to return the resource to its prior condition, without altering its integrity.

5. RESPECT FOR THE BUILDING'S HISTORY:

Do not restore to one period at the expense of another period.

Do not destroy later additions to a building or structure solely to restore to a single time period.

6. REVERSIBILITY:

Alterations should be able to be returned to original conditions. This conserves earlier building design and technique.

e.g. When a new door opening is put into a stone wall, the original stones are numbered, removed and stored, allowing for future restoration.

7. LEGIBILITY:

New work should be distinguishable from old.

Buildings or structures should be recognized as products of their own time, and new additions should not blur the distinction between old and new.

8. MAINTENANCE:

With continuous care, future restoration will not be necessary.

With regular upkeep, major conservation projects and their high costs can be avoided.

For more information, please call the Ministry of Culture at (416) 212-0644 or Toll Free at 1-866-454-0049 or refer to the website at www.culture.gov.on.ca.

Spring 2007

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The information contained in this InfoSheet should not be relied upon as a substitute for specialized legal or professional advice in connection with any particular matter.

APPENDIX 4

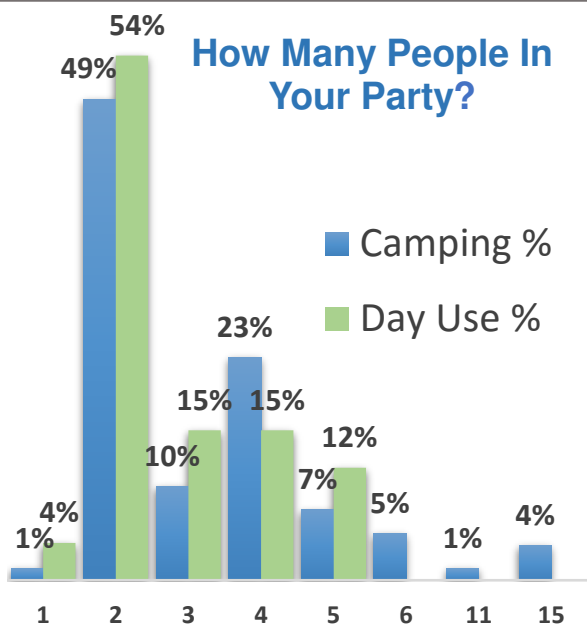
Operation Revenues	Amount	% of Revenues
Admissions (Gate and Pre-Sold tickets)	\$ 178,552.92	14.0%
Vehicle Passes	\$ 109,835.19	8.6%
Camping, Reservations, Trailer Storage	\$ 736,933.03	57.6%
Day Camps	\$ 15,000.00	1.2%
Food / Novelty Sales/Bait/Boat Rentals	\$ 41,275.43	3.2%
Beach Concession	\$ 136,275.92	10.7%
Rental - Res and Land Tenants	\$ 1,430.00	0.1%
Rental - Facilities	\$ 13,632.43	1.1%
Rental - Films	\$ 6,400.00	0.5%
Grants	\$ 12,277.00	1.0%
Miscellaneous	\$ 10,337.43	0.8%
Event Revenues (see below)	\$ 6,527.04	0.5%
Valens Sundry North Revenue	\$ 10,406.35	0.8%
Total Revenues	\$ 1,278,882.74	100%

Operation Costs	Amount	% of Costs
Marketing and Advertising	\$ 4,552.97	0.5%
Equipment, Site & Building Maintenance	\$ 39,732.47	4.4%
Wages and Salaries	\$ 449,883.79	49.3%
Supplies and Services	\$ 13,868.89	1.5%
Equipment Rentals	\$ 63,994.98	7.0%
Contracts	\$ 58,930.86	6.5%
Utilities	\$ 41,933.85	4.6%
Insurance	\$ 12,708.94	1.4%
Taxes, Licences, Permits	\$ 27,044.91	3.0%
Beach Concession	\$ 128,737.66	14.1%
Sundry North Area & Lafarge Trail Exp.	\$ 69,443.33	7.6%
Event Expenses	\$ 2,280.53	0.2%
Total Expenses	\$ 913,113.18	100%

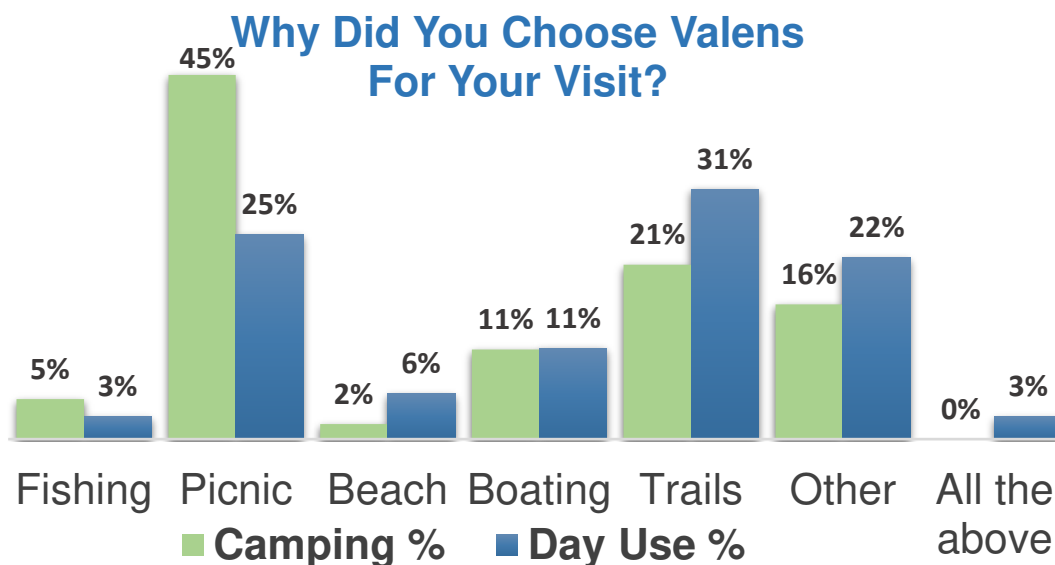
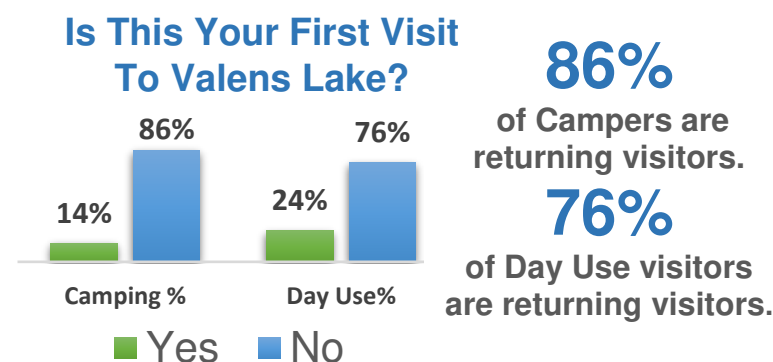
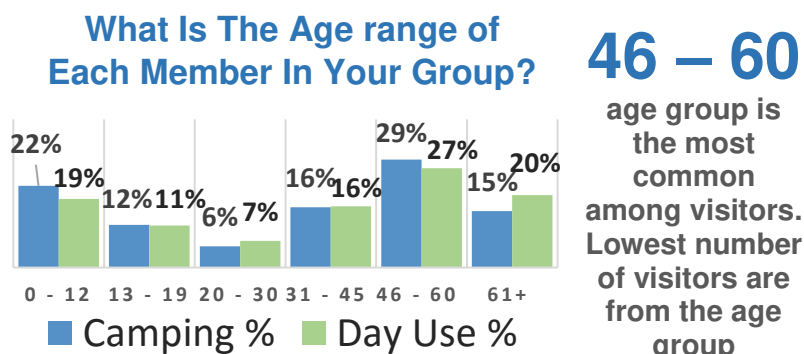
Events	Revenue Generated	% of Event Revenue
Ice Fest	\$ 4,938.05	76%
Films in the Forest	\$ 233.33	4%
Special Events	\$ 1,355.66	21%
Total Event Revenue	\$ 6,527.04	100%

APPENDIX 5

Combined Camping & Day Use Survey Results Summary



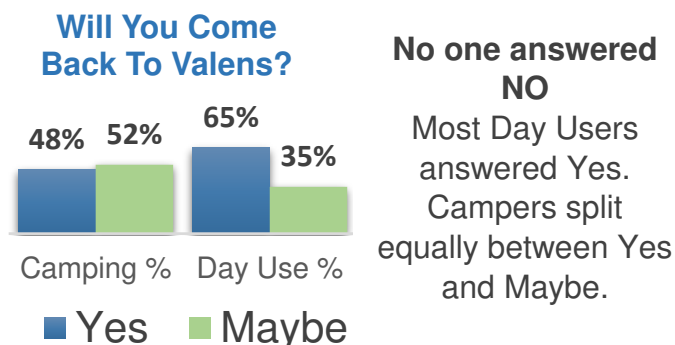
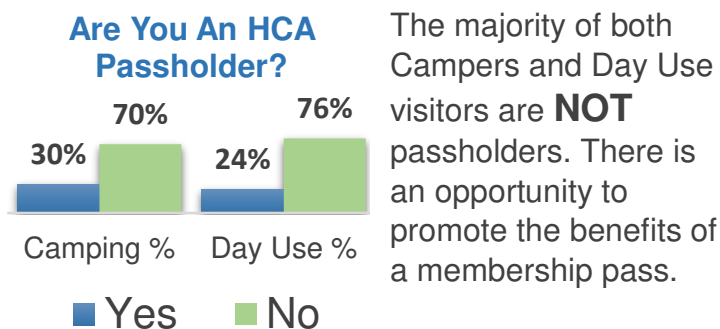
Half of both Campers and Day Use visitors were in groups of two (2). Groups of four (4) was the next highest segment. More Day Use visitors came as a group of one (1).



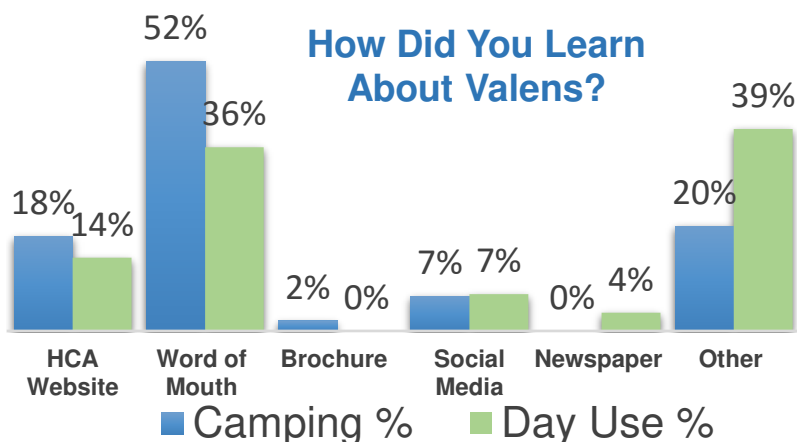
Picnics and Trails

Most popular answer among Campers and Day Use visitors.

Other answers included: dog walking, live close by, nice views.



How Did You Learn About Valens?



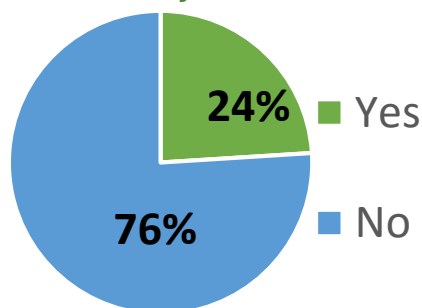
Word of Mouth

advertising remains most popular with both Campers and Day Use visitors. HCA Website and Social Media are other ways visitors are learning of Valens.

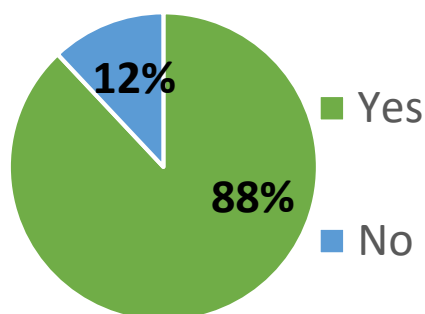
Other Answers included: School Classes, here since a kid, Google search, live close by or drove by.

Day Use Survey Results Summary

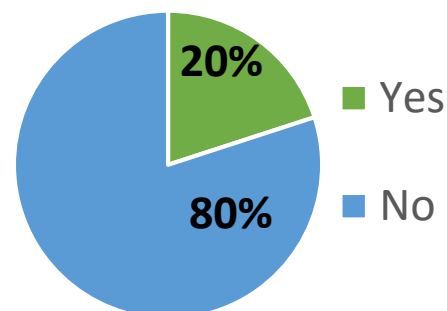
Will you post on social media about your visit?



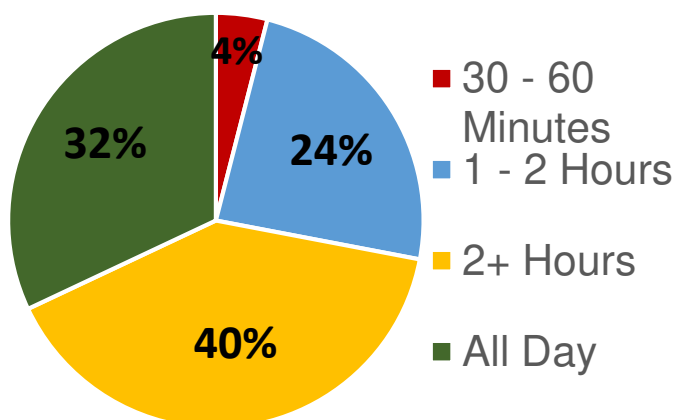
Did you bring your own food?



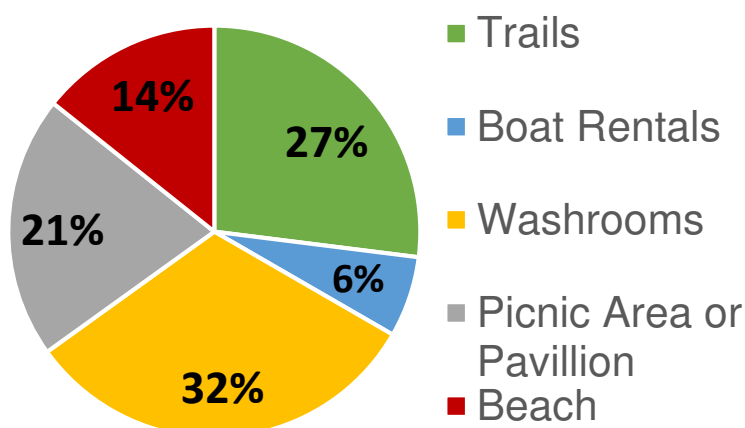
Did you use the Valens Lake brochure or newspaper?



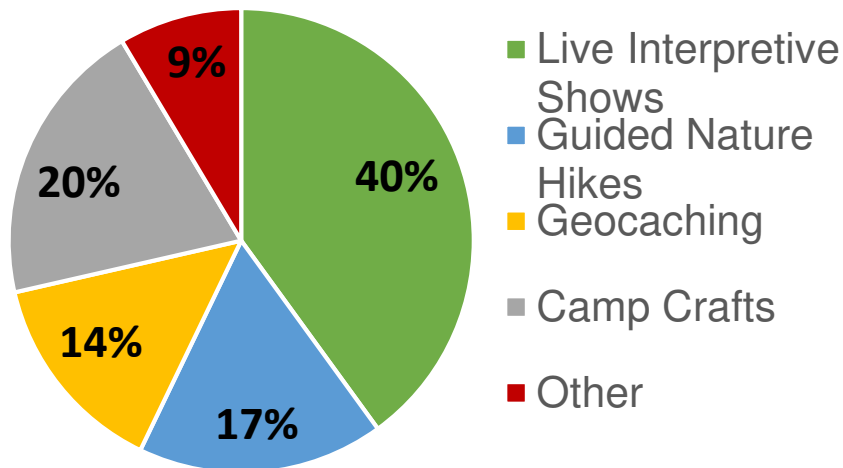
How Long Do You Plan On Staying In The Park For?



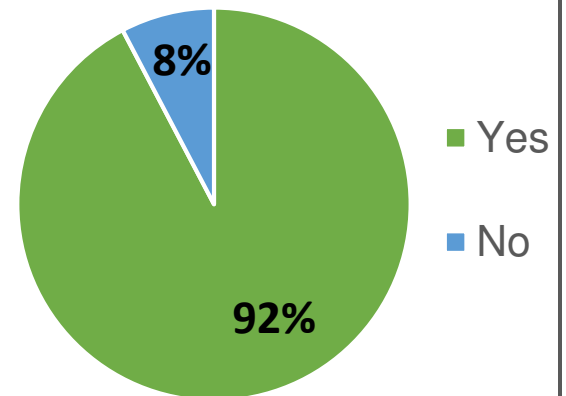
What Facilities Do You Plan On Using?



What Would You Like To See More Of At Valens?



Are You Aware that Valens Lake Offers Camping?



What Is Your Favourite Thing About Valens?

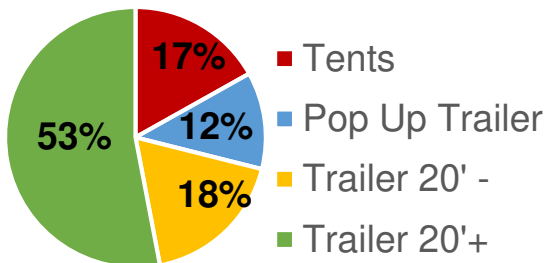
- Trilliums
- Benches with Lake View
- Boardwalk
- Lovely place to walk with our dog
- Having a BBQ with an amazing view of Valens Lake.
- Having a walk on a trail.
- Friendly staff
- Not too many people
- The beach is always great
- Trail
- Shaded Area
- Quietness
- Good camping area
- Clean beach
- Cleanliness
- Peace and quiet (midweek)
- Easy access with gates
- Beautiful bright clean park with lots of easy trails and room for picnics and yard games.
- Spending time with family
- Lots of picnic tables
- Nice trails
- Lots of space
- Nice beach
- Saw a racoon and lots of birds
- Close to home
- Camping
- The smells of campfires, the trails, the beach

What Additional Services or Features Would you Like to see at Valens Lake?

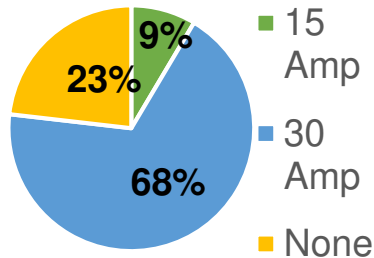
- Less geese poop
- More Food options
- Ability to reserve boats online and in advance
- A portable washroom near boat launch
- More educational natural conservation heavy on eco systems and predator-prey.
- Man in nature emergency procedures.
- How to effectively put a fire out (before starting)
- Respect to other campers - yelling, music, dog poop
- Motorized vehicles
- Boat launch signage. A lot of disregard for the signage.
- Maybe a movie night or volleyball on the beach
- Playground for kids
- A few more garbage cans to encourage poop scooping - especially winter.
- The "No Parking" signs at the boat launch to say "because this is for launching boats only" - Some people don't seem to get this!!
- A washroom near the boat launch otherwise your gear needs to be left unattended
- A natural playground
- Kids playground
- Better map
- Concession
- Stocked lakes
- More garbage cans
- Stand up paddle board rentals
- Naturalist Talks/Hikes/Boating

Camping Survey Results

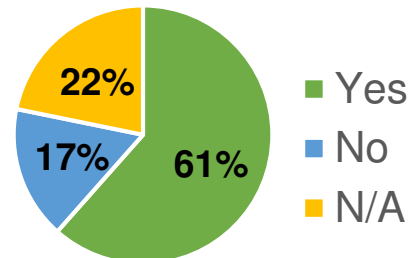
What Equipment Are You Camping With?



What Site Hookups Did You Use During your Stay?



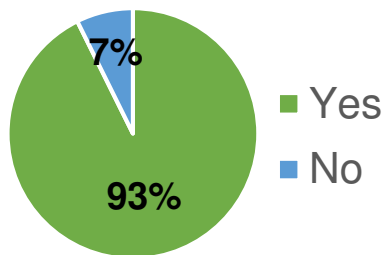
Did You Find Everything You needed at the Campground Store?



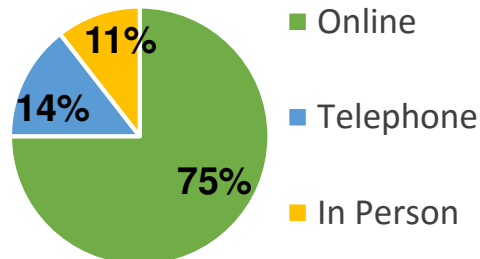
What Were We Missing?

- Drumsticks
- Firewood
- General Groceries
- Frozen Hamburgers

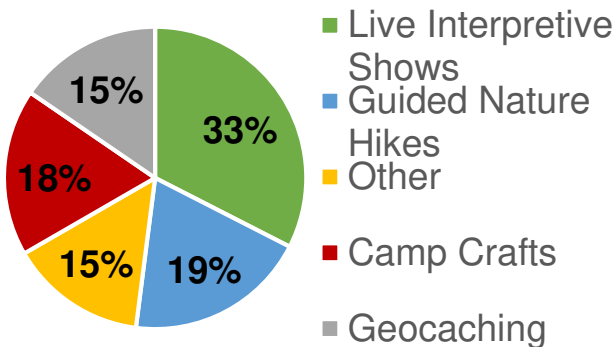
Did You Reserve Your Campsite?



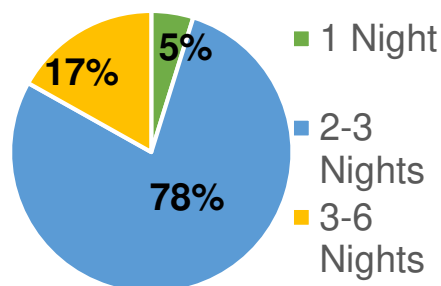
How Did You Reserve Your Campsite?



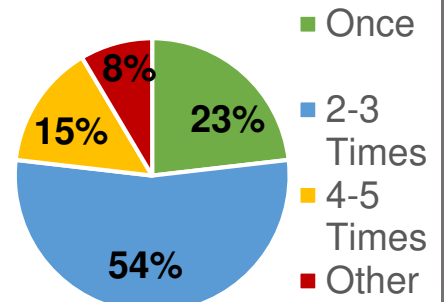
Which Of The Following Would You Like To See More Of At Valens?



What Is The Length Of Your Stay?



How Many Times Per Year Do You Camp At Valens?



What Other Attractions or Campgrounds Do You Visit?

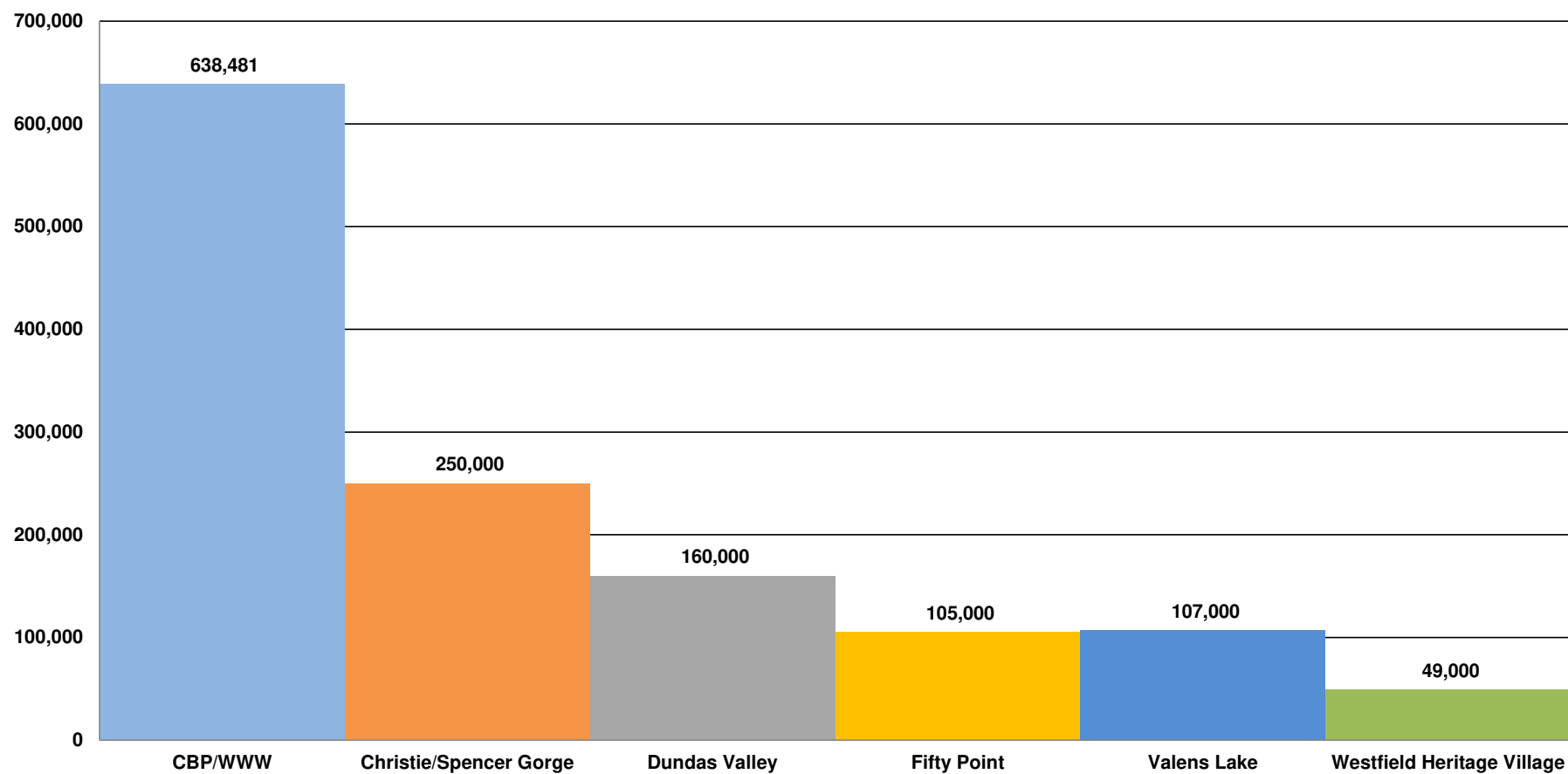
- St Jacobs
- Westfield
- Waterloo/Cambridge
- Trails
- Fishing
- Travel Around Ontario

What Was Your Favourite Thing About Your Stay At Valens Lake?

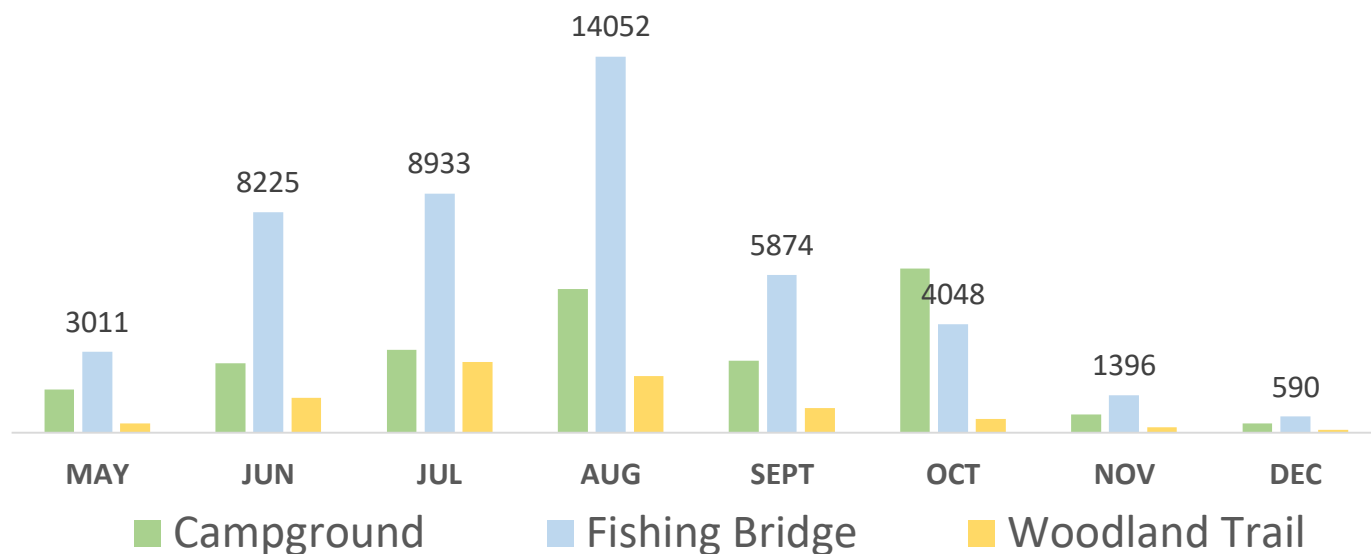
- Easy Access
- Winter Camping
- Bike Trails
- Quietness
- Friendly Staff
- Clean Park

What Better Services Would You Like To See At Valens?

- Showers
- Reno'd Bathrooms
- Playground
- WIFI
- Quietness
- Friendly Staff
- Clean Park
- Sewage hook ups
- Clean beach better
- Speed control
- More special events/activities
- Bushes trimmed back on campsites
- More electrical campsites
- Clean sites better
- Signs indicating if water is safe to drink
- Better Power
- Dog Beach
- Lift on Alcohol ban
- Seasonal/Monthly Sites
- Better Picnic tables
- Gate does not work sometimes

2018 Annual Attendance Estimate (CBP/WWW & CLAC/SGCA Combined)

Valens Lake Monthly Trail Counts



- **Fishing Bridge** counted the highest numbers

- May: 3011
- June: 8225
- July: 8933
- August: 14,052
- September: 5874
- October: 4048
- November: 679
- December: 331

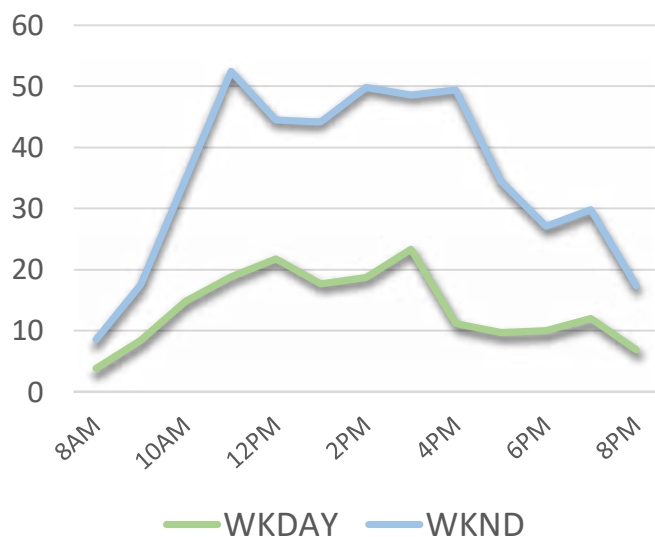
- **Campground** second busiest counter

- May: 1597
- June: 2577
- July: 3079
- August: 5370
- September: 2676
- October: 6119
- November: 679
- December: 331

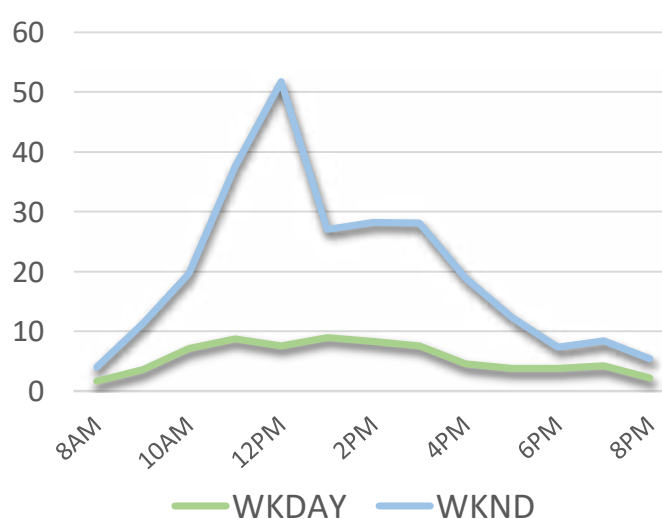
- **Woodland Trail** least busiest counter

- May: 345
- June: 1299
- July: 2632
- August: 2107
- September: 904
- October: 515
- November: 205
- December: 101

Fishing Bridge Hourly Average



Campground Hourly Average



APPENDIX 6

6.4 Valens Lake Conservation Area

Located on the headwaters of Spencer Creek the 300 hectare Valens Lake Conservation Area is a multi-use recreational area that offers camping (225 campsites) hiking, swimming, boating, and picnicking. This property also includes extensive wetlands and small sections of hardwood forest. It provides habitat for a wide variety of species. *Source: <https://conservationhamilton.ca/valens-lake/>*

In 2016 approximately 33.5 ha (82.8 ac) of conifer plantations were marked for thinning. The thinning is scheduled for winter 2018.

Managed Forest Summary

Roll Number (5-digit)	Forest Type 1	Area 1 (ac)	Forest Type 2	Area 2 (ac)	Forest Type 3	Area 3 (ac)	Forest Type 4	Area 4 (ac)	Total Area (ac)
12420	Conifer Plantation	292.61	Upland Hardwoods	50.55	Mixedwoods	33.03	Pond	1.75	377.94

Other Vegetation Observed	Invasive Species Observed	Wildlife Habitat Features			
Red osier dogwood Wild red raspberry Wild rose Leatherwood Nannyberry Honeysuckle	Buckthorn Garlic mustard European honeysuckle Manitoba maple	Snags	Cavities	Coarse Woody Debris	Mast Species
		Abundant in red pine plantations	Several in compartment 3e	Moderate	American beech White oak Hickory Walnut

Source: This excerpt from the Managed Forest Plan includes recommendations for other conservation areas. All comments may not apply to Valens Lake. Plan prepared July 27, 2017 by David Puttock, Ph.D R.P.F. of Silv-Econ Ltd

Forest Inventory										
			Trees ≥ 10 cm DBH						Regeneration (advanced > 1m)	
Comp	Area (ac)	Forest Type	Species Composition ¹	Age (yrs)	Height (m)	Avg. DBH ² (cm)	Density (stems/ha)	Basal Area ³ (m ² /ha)	Species Composition	Density (stems/ha)
3a	28.14	Conifer Plantation	Sw5 Ps4 Sn1 (Cb El)	32	23	24	866	36	Bt7 Ag3	750
3b	41.06	Conifer Plantation	Sw10	18	25	12	223	11.3	Bt8 Ag2	2667
3c	104.31	Conifer Plantation	Pr4 Or2 Ps1 Sw1 (Ag Cb Ce Cr OC Pw)2	24	17	12	870	18.8	Ag6 Bt1 Ce1 Ps1 Cb1 (Sw)	1800
3d	36.43	Conifer Plantation	Pr4 Ps4 Sw1 (Ab)1	30	20	14	563	18	Bt7 Ag3	1000
3e	3.63	Upland Hardwoods	Mh6 Be2 lw2	75	32	23	255	20	Bt10	2000
3f	4.29	Conifer Plantation	Pw10	45	23	22	744	32	none	0
3g	5.64	Upland Hardwoods	Mh6 Ag1 Bd1 Cb1 Hi1	75	31	23	406	30	none	0
3h	8.95	Conifer Plantation	Pr10	40	25	21	746	36	Ag10	2000
3i	3.48	Conifer Plantation	La5 Sw5	30	13	10	606	8	none	0
3j	5.24	Mixedwoods	Ag9 Cb1	18	15	10	961	18	Ag5 Cb5	3000
3k (4)	15.02	Upland Hardwoods	Mh7 Be1 Hi1 Po1	60	22	25	577	22	Mh10	2000
3l	11.21	Conifer Plantation	Pw5 Pr3 Cb1 Po1 (Sw)	60	26	23	743	38	Bt8 Ag1 Cb1	3333

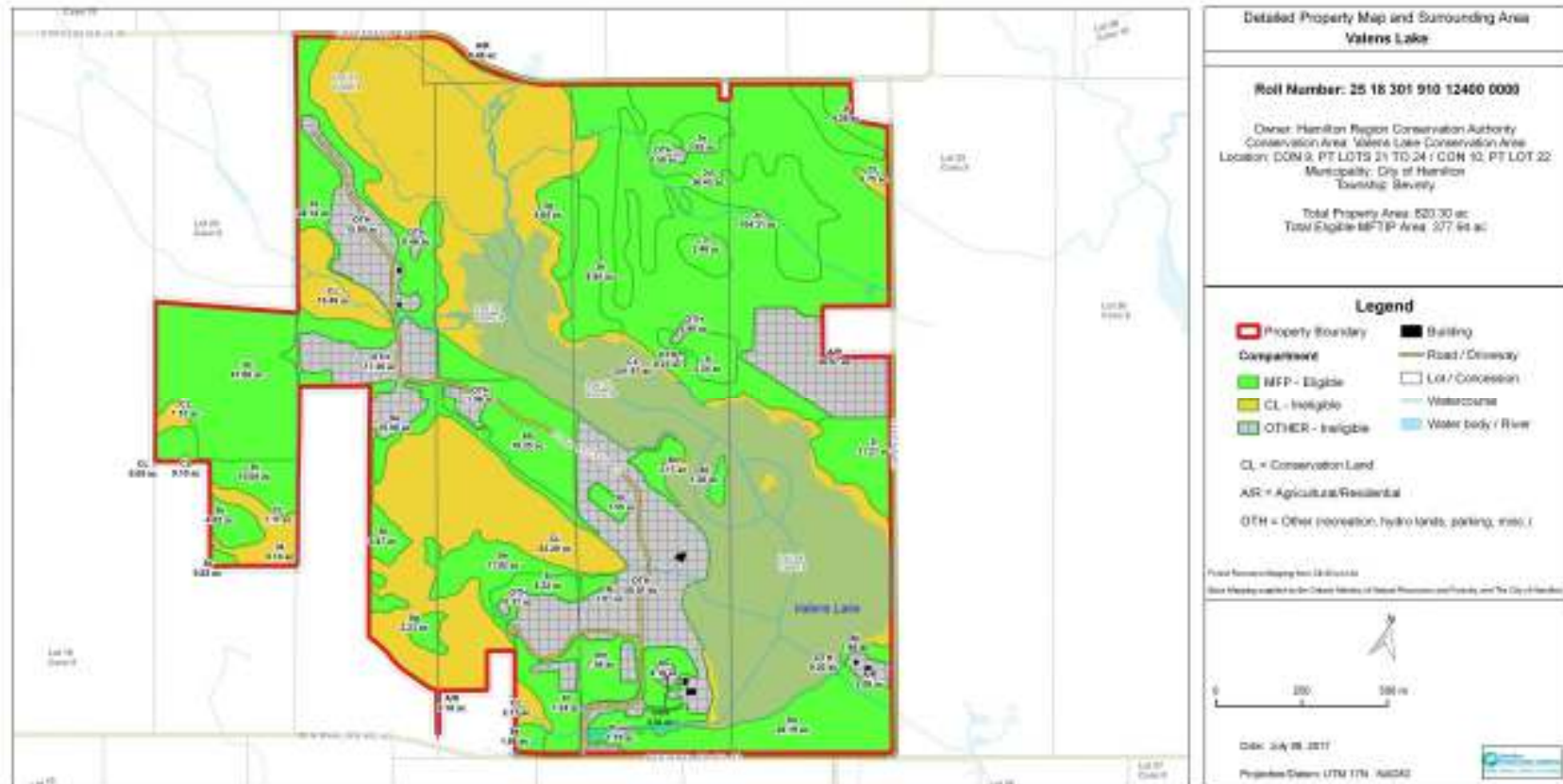


SILV-ECON LTD

Forest Inventory

			Trees ≥ 10 cm DBH						Regeneration (advanced > 1m)	
Comp	Area (ac)	Forest Type	Species Composition ¹	Age (yrs)	Height (m)	Avg. DBH ² (cm)	Density (stems/ha)	Basal Area ³ (m2/ha)	Species Composition	Density (stems/ha)
8n	4.18	Mixedwoods	Wn10	25	15	13	1019	18	Wn10	1000
8o	28.19	Conifer Plantation	Pr3 Sw3 Wn2 Lh1 Pw1 (Sn Mm OH)	29	16	13	1107	21.6	Ce5 Wn5	400
8p	1.46	Conifer Plantation	Sn5 Lb4 Aw1 (Cb Mm)	45	19	22	1132	31	Cb10	500
Pond	1.75	Pond								

Detailed Property Maps



Section 7 : Ten Year Activity Summary 2018-2027

The following management activities are recommended for the 2018-2027 operating period.

Forest Health & Ecological Diversity

Control Invasive plants

- The Ontario Invasive Plant Council recommends creating a feasible, long-term strategy for managing invasive species. Many of the managed forest compartments have been colonized by buckthorn and other invasive plant species. Buckthorn is particularly problematic because it is the dominant species in the regeneration of a number of the compartments. Managing the buckthorn is an important silvicultural objective in maintaining a healthy and productive forest.

Manage Red Pine Decline

- A number of the red pine plantations are declining as a result of root diseases. The HCA has been thinning these plantations to mitigate the effects of the decline in the overstory and promote natural regeneration. Many of the plantations also lack desirable regeneration and some are heavily colonized by buckthorn. Controlling the buckthorn and restoring regeneration through underplanting is highly recommended.

Monitor Invasive Insects

- Many, if not all, of the mature ash in the managed forest have been affected by Emerald Ash Borer. Fortunately ash is commonly found in the regeneration of many stands and it is unlikely that ash species will disappear from the managed forest.
- Hemlock stands are at risk from Hemlock woolly adelgid (HWA). Hemlock is dominant/co-dominant in Fletcher compartment 1f and Beverly Swamp compartment 4b and is a minor species in several other compartments. These stands should be monitored for signs of HWA and report infected stands to the Canadian Food Inspection Agency (CFIA). Silv-Econ is coordinating a working group of forest managers/owners who have hemlock stands on their properties. The HCA may wish to participate in this working group.

Wildlife & Nature Appreciation

Conserve Habitat Features

- Wildlife habitats can be conserved or enhanced by retaining snags, fallen trees and logs, and trees with cavities.
- Mitigating the impacts from management activities on Species At Risk and other wildlife may require modifications to conventional silvicultural activities, establishing buffers around critical habitat, and seasonal restrictions for undertaking management activities, among other mitigation measures.

Recreation

- There is an extensive network of recreational trails throughout most of the managed forest. Maintaining the trails by trimming vegetation, removing fallen logs and hazard trees, and making repairs when required is recommended.

Forest Products

- A second thinning of the conifer plantations at Christie, Dundas Valley, Mt. Albion, Valens, and Westfield Heritage Village can be considered during the 2018-2027 operating period.
- There are approximately 115 acres of conifer plantations at Fletcher Creek that could also be considered for thinning during the 2018-2027 operating period.

Section 8 : Report of Activities

[illegible]

Section 9 : Where To Go For Assistance

David Puttock, R.P.F., Silv-Econ Ltd., 913 Southwind Ct., Newmarket, ON L3Y 6J1
 phone: (905) 898-3085; fax: (905) 898-2722; email: silvecon@rogers.com;
 website: <http://www.silvecon.com>

Native Tree and Shrubs

Somerville Nurseries
 P.O. Box 70, Alliston, Ontario. L9R 1T9
 (705) 435-6258, fax (705) 435-4230

St. Williams Nursery & Ecology Centre
 885 Norfolk county Hwy 24
 St. Williams, ON N0E 1P0
 (519) 586-9916

Landowner Support & Publications

Forests Ontario

144 Front Street West, Suite 700
 Toronto, ON M5J 2L7
 Toll Free: 1-877-646-1193
 Local: 416-646-1193
 Fax: 416-493-4608
 Website: www.forestsonario.ca

Ontario Woodlot Association

RR # 4, 275 County Road 44
 Kemptville, ON K0G 1J0
 888-791-1103
www.ont-woodlot-assoc.org

Landowner Resource Centre

Box 599, 5524 Dickinson Street
 Manotick, ON K4M 1A5
 613-692-2390
www.lrconline.com

Section 10 : References

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Schwetz, N. (ed). 2014. **b.** Natural Areas Inventory Project 3rd Edition 2014. Species Checklist Document. Nature Counts 2 Project. Hamilton Conservation Authority. 287pp.

Section 11 : Tree Species & Species Abbreviations

Abbreviation	Species	Abbreviation	Species
Ag	green ash	Mst	Striped maple
Ap	apple	Nb	Nannyberry
Aw	white ash	Ob	bur oak
Bd	basswood	OC	other conifers
Be	American beech	OH	other hardwood
Bf	balsam fir	Or	red oak
Bn	butternut	Ow	white oak
Bt	European buckthorn	Pa	Austrian pine
Bw	white birch	Pb	balsam poplar
By	yellow birch	Pg	large tooth aspen
Cb	black cherry	Ph	hybrid poplar
Cc	choke cherry	Pj	jack pine
Ce	white cedar	Po	poplar species
El	elm	Pr	red pine
Ha	hawthorn	Ps	Scots pine
Hac	hackberry	Pt	trembling aspen
He	eastern hemlock	Pw	white pine
Hi	bitternut hickory	Sas	sassafras
Hs	shagbark hickory	Sb	black spruce
Iw	ironwood	Sc	blue spruce
La	European larch	Sn	Norway spruce
Lb	black locust	Sw	white spruce
Lh	Honey locust	Syc	American sycamore
Mash	mountain ash	Ta	tamarack
Mb	black maple	Tu	tulip tree
Mh	sugar maple	Wi	willow
Mm	Manitoba maple	Wn	black walnut
Mr	red maple		
Ms	silver maple		

APPENDIX 7 NATURAL INVENTORY – SPECIES LIST

Appendix 7.1	BIRDS
Appendix 7.2	BUTTERFLIES AND DRAGONFLIES
Appendix 7.3	HERPETOFAUNA
Appendix 7.4	MAMMALS
Appendix 7.5	PLANTS

BIRDS

Valens Master Plan Natural Inventory

Appendix 7.1

ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	GRANK	SRANK	COSEWIC	OMNR Status
4	B-ALFL	Empidonax alnorum	Alder Flycatcher	N	uncommon	G5	S5B		
8	B-AMCR	Corvus brachyrhynchos	American Crow	N		G5	S5B		
9	B-AMGO	Carduelis tristis	American Goldfinch	N		G5	S5B		
14	B-AMRO	Turdus migratorius	American Robin	N		G5	S5B		
5024	B-BAEA	Haliaeetus leucocephalus	Bald Eagle	N	rare	G5	S2N, S4B		SC
30	B-BAOR	Icterus galbula	Baltimore Oriole	N		G5	S4B		
32	B-BARS	Hirundo rustica	Barn Swallow	N		G5	S4B	THR	THR
45	B-BEKL	Ceryle alcyon	Belted Kingfisher	N	uncommon	G5	S4B		
34	B-BAWW	Mniotilta varia	Black-and-white Warbler	N	uncommon	G5	S5B		
35	B-BBCU	Coccyzus erythrophthalmus	Black-billed Cuckoo	N	uncommon	G5	S5B		
42	B-BCCH	Poecile atricapillus	Black-capped Chickadee	N		G5	S5		
55	B-BLJA	Cyanocitta cristata	Blue Jay	N		G5	S5		
88	B-BWWA	Vermivora pinus	Blue-winged Warbler	N	uncommon	G5	S4B		
64	B-BOBO	Dolichonyx oryzivorus	Bobolink	N	uncommon	G5	S4B	THR	THR
49	B-BHCO	Molothrus ater	Brown-headed Cowbird	N		G5	S4B		
91	B-CAGO	Branta canadensis	Canada Goose	I		G5	S5		
99	B-CATE	Sterna caspia	Caspian Tern	N		G5	S3B	NAR	NAR
104	B-CEDW	Bombycilla cedrorum	Cedar Waxwing	N		G5	S5B		
107	B-CHSW	Chaetura pelagica	Chimney Swift	N	uncommon	G5	S4B, S4N	THR	THR
106	B-CHSP	Spizella passerina	Chipping Sparrow	N		G5	S5B		
115	B-COGR	Quiscalus quiscula	Common Grackle	N		G5	S5B		
4990	B-CORA	Corvus corax	Common Raven	I/N	rare	G5	S5		
126	B-COTE	Sterna hirundo	Common Tern	N	uncommon	G5	S4B	NAR	NAR
127	B-COYE	Geothlypis trichas	Common Yellowthroat	N		G5	S5B		
136	B-DOWO	Picoides pubescens	Downy Woodpecker	N		G5	S5		
140	B-EAKI	Tyrannus tyrannus	Eastern Kingbird	N		G5	S4B		
142	B-EAPH	Sayornis phoebe	Eastern Phoebe	N	uncommon	G5	S5B		
144	B-EATO	Pipilo erythrophthalmus	Eastern Towhee	N	uncommon	G5	S4B		
145	B-EAWP	Contopus virens	Eastern Wood-Pewee	N		G5	S4B	SC	SC
149	B-EUST	Sturnus vulgaris	European Starling	I		G5	SNA		
154	B-FISP	Spizella pusilla	Field Sparrow	N		G5	S4B		
175	B-GRCA	Dumetella carolinensis	Gray Catbird	N		G5	S4B		
187	B-GBHE	Ardea herodias	Great Blue Heron	N	uncommon	G5	S4		
163	B-GCFL	Myiarchus crinitus	Great Crested Flycatcher	N		G5	S5B		
180	B-GRHE	Butorides virescens	Green Heron	N	uncommon	G5	S4B		
208	B-HOWR	Troglodytes aedon	House Wren	N		G5	S5B		
211	B-INBU	Passerina cyanea	Indigo Bunting	N		G5	S4B		
230	B-LEFL	Empidonax minimus	Least Flycatcher	N	uncommon	G5	S4B		
256	B-MODO	Zenaidura macroura	Mourning Dove	N		G5	S5		

BIRDS

Valens Master Plan Natural Inventory

Appendix 7.1

ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	GRANK	SRANK	COSEWIC	OMNR Status
263	B-NOCA	Cardinalis cardinalis	Northern Cardinal	N		G5	S5		
264	B-NOFL	Colaptes auratus	Northern Flicker	N		G5	S4B		
273	B-NOWA	Seiurus noveboracensis	Northern Waterthrush	N		G5	S5B		
285	B-OVEN	Seiurus aurocapillus	Ovenbird	N		G5	S4B		
301	B-PIWO	Dryocopus pileatus	Pileated Woodpecker	N	uncommon	G5	S5		
315	B-RBWO	Melanerpes carolinus	Red-bellied Woodpecker	N	uncommon	G5	S4		
314	B-RBNU	Sitta canadensis	Red-breasted Nuthatch	N	uncommon	G5	S5		
321	B-REVI	Vireo olivaceus	Red-eyed Vireo	N		G5	S5B		
346	B-RWBL	Agelaius phoeniceus	Red-winged Blackbird	N		G5	S4		
311	B-RBGR	Pheucticus ludovicianus	Rose-breasted Grosbeak	N		G5	S4B		
374	B-SOSP	Melospiza melodia	Song Sparrow	N		G5	S5B		
372	B-SORA	Porzana carolina	Sora	N	uncommon	G5	S4B		
388	B-SWSP	Melospiza georgiana	Swamp Sparrow	N		G5	S5B		
396	B-TRES	Tachycineta bicolor	Tree Swallow	N		G5	S4B		
403	B-TUVU	Cathartes aura	Turkey Vulture	N	uncommon	G5	S5B		
406	B-VEER	Catharus fuscescens	Veery	N		G5	S4B		
409	B-VIRA	Rallus limicola	Virginia Rail	N	uncommon	G5	S5B		
412	B-WAVI	Vireo gilvus	Warbling Vireo	N		G5	S5B		
414	B-WBNU	Sitta carolinensis	White-breasted Nuthatch	N		G5	S5		
428	B-WIFL	Empidonax traillii	Willow Flycatcher	N		G5	S5B		
439	B-WOTH	Hylocichla mustelina	Wood Thrush	N	uncommon	G5	S4B	THR	SC
456	B-YWAR	Dendroica petechia	Yellow Warbler	N		G5	S5B		
	B-CONH	Chordeiles minor	Common Nighthawk	N		G5	SB4	THR	SC

of species 61
 # locally uncommon 20
 # locally rare 2

Butterflies and Dragonflies

Valens Master Plan Natural Inventory

Appendix 7.2

ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	GRANK	SRANK	COSEWIC	OMNR Status
715	L-AEBR	Satyrodes appalachia	Appalachian Brown	N		G5	S4		
718	L-AMLA	Vanessa virginiensis	American Lady	N		G5	S5		
720	L-ARSK	Carterocephalus palaemon	Arctic Skipper	N	Uncommon	G5	S5		
724	L-BLDA	Euphyes conspicua	Black Dash	N		G4	S3		
725	L-BLSW	Papilio polyxenes	Black Swallowtail	N		G5	S5		
730	L-BRDA	Wallengrenia egeremet	Northern Broken Dash	N		G5	S5		
732	L-BUCK	Junonia coenia	Common Buckeye	N	Uncommon	G5	SNA		
735	L-CAWH	Pieris rapae	Cabbage White	I		G5	SE		
739	L-CLSK	Polites origenes	Crossline Skipper	N		G5	S4		
741	L-CODW	Erynnis lucilius	Columbine Duskywing	N	uncommon	G4	S4		
743	L-COMM	Polygonia comma	Eastern Comma	N		G5	S5		
4681	L-CORI	Coenonympha tullia	Common Ringlet	N		G5	S5		
744	L-COSU	Colias philodice	Common Sulphur	N		G5	S5		
749	L-DESK	Atrytone logan	Delaware Skipper	N		G5	S4		
757	L-DUSK	Euphyes vestris	Dun Skipper	N		G5	S5		
761	L-ETBL	Everes comyntas	Eastern Tailed Blue	N		G5	S5		
762	L-EUSK	Thymelicus lineola	European Skipper	I		G5	SE		
769	L-GISW	Papilio cresphontes	Giant Swallowtail	N		G5	S4		
775	L-GSFR	Speyeria cybele	Great Spangled Fritillary	N		G5	S5		
787	L-HOSK	Poanes hobomok	Hobomok Skipper	N		G5	S5		
791	L-JUDW	Erynnis juvenalis	Juvenal's Duskywing	N		G5	S5		
796	L-LESK	Ancyloxypha numitor	Least Skipper	N		G5	S5		
797	L-LGWI	Pompeius verna	Little Glassywing	N		G5	S4		
800	L-LWSA	Megisto cymela	Little Wood Satyr	N		G5	S5		
806	L-MOCL	Nymphalis antiopa	Mourning Cloak	N		G5	S5		
808	L-MONA	Danaus plexippus	Monarch	N		G5	S2N, S4B	END	SC
809	L-MUWH	Pieris napi	Mustard White	N	uncommon	G5	S4		
811	L-NEBR	Satyrodes eurydice	Eyed Brown	N		G5	S5		
815	L-NPEY	Enodia anthedon	Northern Pearly Eye	N		G5	S4		
820	L-ORCR	Phyciodes pascoensis	Northern Pearl Crescentspot	N		G5	S5		
821	L-ORSU	Colias eurytheme	Orange Sulphur	N		G5	S5		
823	L-PALA	Vanessa cardui	Painted Lady	N		G5	SNA		
827	L-PESK	Polites peckius	Peck's Skipper	N		G5	S5		
4806	L-PH_SP	Phycoides sp.	Crescent Species	N					

Butterflies and Dragonflies

Valens Master Plan Natural Inventory

Appendix 7.2

ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	GRANK	SRANK	COSEWIC	OMNR Status
4834	L-PHPAS	Phyciodes cocyta	Northern crescent	N		G5	S5		
839	L-RSPU	Limenitis arthemis astyanax	Red-spotted Purple	N		G5T5	S5		
851	L-SPAZ	Celastrina argiolus	Spring Azure	N		G4G5	SU		
853	L-SSSK	Epargyreus clarus	Silver-spotted Skipper	N		G5	S4		
4680	L-SUAZ	Celastrina neglecta	Summer Azure	N		G5	S5		
857	L-TESK	Polites themistocles	Tawny-edged Skipper	N		G5	S5		
858	L-TISW	Papilio glaucus	Eastern Tiger Swallowtail	N		G5	S5		
861	L-VICE	Limenitis archippus	Viceroy	N		G5	S5		
863	L-WHAD	Basilarchia arthemis arthemis	White Admiral	N	rare	G5	S5		
866	L-WONY	Cercyonis pegala	Common Wood Nymph	N		G5	S5		
4752	O-AE_SP	Aeshna sp.	Darner Species	N					
4925	O-AZBL	Enallagma aspersum	Azure Bluet	N	rare	G5	S3		
4656	O-BLSA	Tramea lacerata	Black Saddlebags	N		G5	S4		
4922	O-BOBL	Enallagma boreale	Boreal Bluet	N	uncommon	G5	S5		
4757	O-BTEM	Somatochlora walshii	Brush-tipped Emerald	N	uncommon	G5	S4		
4749	O-BUDA	Pachydiplax longipennis	Blue Dasher	N		G5	S5		
4758	O-CADA	Aeshna canadensis	Canada Darner	N	uncommon	G5	S5		
4660	O-CAPE	Celithemis elisa	Calico Pennant	N		G5	S5		
4732	O-CFCO	Libellula julia	Chalk-fronted Corporal	N	uncommon	G5	S5		
4733	O-CFME	Sympetrum internum	Cherry-faced Meadowhawk	N		G5	S5		
4725	O-COBA	Epithea cynosura	Common Baskettail	N		G5	S5		
4662	O-COWH	Libellula lydia	Common Whitetail	N		G5	S5		
4741	O-DSBL	Enallagma basidens	Double-striped Bluet	N	rare	G5	S3		
4736	O-DTWH	Leucorrhinia intacta	Dot-tailed Whiteface	N		G5	S5		
4716	O-DUCL	Gomphus spicatus	Dusky Clubtail	N	uncommon	G5	S5		
4664	O-EAAM	Perithemis tenera	Eastern Amberwing	N		G5	S4		
4665	O-EAFO	Ischnura verticalis	Eastern Forktail	N		G5	S5		
4694	O-EAPO	Erythemis simplicicollis	Eastern Pondhawk	N		G5	S5		
4667	O-EBJE	Calopteryx maculata	Ebony Jewelwing	N		G5	S5		
4668	O-ELSP	Lestus inaequalis	Elegant Spreadwing	N	uncommon	G5	S4		
4669	O-EMSP	Lestes dryas	Emerald Spreadwing	N		G5	S5		
4807	O-EN_SP	Enallagma sp.	Bluet Species	N					
4759	O-ERDA	Amphiagrion saucium	Eastern Red Damsel	N	uncommon	G5	S4		
4717	O-FABL	Enallagma civile	Familiar Bluet	N		G5	S5		

Butterflies and Dragonflies

Valens Master Plan Natural Inventory

Appendix 7.3

ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	GRANK	SRANK	COSEWIC	OMNR Status
4718	O-FRFO	Ischnura posita	Fragile Forktail	N		G5	S4		
4737	O-FSSK	Libellula quadrimaculata	Four-spotted Skimmer	N		G5	S5		
4671	O-GRDA	Anax junius	Common Green Darner	N		G5	S5		
4711	O-HAPE	Celithemis eponina	Halloween Pennant	N	uncommon	G5	S4		
4761	O-MABL	Enallagma ebrium	Marsh Bluet	N		G5	S5		
4762	O-ORBL	Enallagma signatum	Orange Bluet	N		G5	S4		
4728	O-PRBA	Epithea princeps	Prince Baskettail	N	uncommon	G5	S5		
4781	O-RTEM	Dorocordulia libera	Racket-tailed Emerald	N	rare	G5	S5		
4734	O-RUME	Sympetrum rubicundulum	Ruby Meadowhawk	N		G5	S5		
4729	O-SESP	Nehalennia irene	Sedge Sprite	N		G5	S5		
4712	O-SKBL	Enallagma geminatum	Skimming Bluet	N		G5	S4		
4723	O-SLSP	Lestes rectangularis	Slender Spreadwing	N		G5	S5		
4674	O-SPDA	Basiaeschna janata	Springtime Darner	N	uncommon	G5	S5		
4923	O-TABL	Coenagrion resolutum	Taiga Bluet	N	uncommon	G5	S5		
4675	O-TSSK	Libellula pulchella	Twelve-spotted Skimmer	N		G5	S5		
4765	O-TUBL	Enallagma carunculatum	Tule Bluet	N	uncommon	G5	S5		
4777	O-VEBL	Enallagma vesperum	Vesper Bluet	N	rare	G5	S4		
4779	O-VIDC	Argia fumipennis violacea	Violet Dancer	N		G5T5	S5		
4678	O-WFME	Sympetrum obtrusum	White-faced Meadowhawk	N		G5	S5		
4679	O-WISK	Libellula luctuosa	Widow Skimmer	N		G5	S5		
		Epithea sp.	Baskettail Species						
		Gomphidae sp.	Clubtail Species						
		Speyeria sp.	Fritillary Species						
		Sympetrum sp.	Meadowhawk Species						
		Epargyreus sp.	Skipper Species						
		Colias Sp.	Sulphur Species						
		Euptoieta claudia	Variegated Fritillary						

ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	GRANK	SRANK	COSEWIC	OMNR Status
652	H-AMTO	Bufo americanus americanu	Eastern American Toad	N		G5	S5		
659	H-BUFR	Rana catesbeiana	Bullfrog	N	uncommon	G5	S4		
664	H-EAGA	Thamnophis sirtalis sirtalis	Eastern Garter Snake	N		G5T5	S5		
670	H-GRFR	Rana clamitans	Green Frog	N		G5	S5		
700	H-SPPE	Pseudacris crucifer	Spring Peeper	N		G5	S5		
710	H-WOFR	Rana sylvatica	Wood Frog	N		G5	S5		

MAMMALS

Valens Master Plan Natural Inventory

Appendix 7.4

ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	GRANK	SRANK	COSEWIC	OMNR Status
893	M-EACH	Tamias striatus	Eastern Chipmunk	N		G5	S5		
894	M-EACO	Sylvilagus floridanus	Eastern Cottontail	N		G5	S5		
908	M-GRSQ	Sciurus carolinensis	Gray Squirrel	N		G5	S5		
927	M-MUSK	Ondatra zibethicus	Muskrat	N		G5	S5		
941	M-RESQ	Tamiasciurus hudsonicus	Red Squirrel	N		G5	S5		
962	M-WTDE	Odocoileus virginianus	White-tailed Deer	N		G5	S5		

ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	Coefficient of conservatism	Weediness	Carolinain plants (oldham 2017)	GRANK	SRANK	COSEWIC	OMNR Status
1139	P-ACENEGU	Acer negundo	Manitoba Maple	N		0		C	G5	S5		
1144	P-ACESACC	Acer saccharinum	Silver Maple	N		5		C	G5	S5		
1146	P-ACESASA	Acer saccharum saccharum	Sugar Maple	N		4		C	G5	S5		
1148	P-ACEXFRE	Acer x freemanii	Freeman's Maple	N		6		hyb	GNA	SNA		
1153	P-ACHMILL	Achillea millefolium	Yarrow	I/N			0	IX	G5	SNA		
1168	P-ACTPACH	Actaea pachypoda	White Baneberry	N		6		C	G5	S5		
1169	P-ACTRUBR	Actaea rubra	Red Baneberry	N		5		C	G5	S5		
1172	P-ADIPEDA	Adiantum pedatum	Northern Maidenhair Fern	N		7		C	G5	S5		
1195	P-AGRGIGA	Agrostis gigantea	Redtop	I			-2	IC	G4G5	SNA		
1218	P-ALIPLAN	Alisma plantago-aquatica	Water-plantain	N		3			G5	S5		
1231	P-ALLTRIC	Allium tricoccum	Wild Leek	N		7		C	G5	S4		
1285	P-AMPBRAC	Amphicarpaea bracteata	Hog-peanut	N		4		C	G5	S5		
2765	P-ANEAMER	Anemone americana	Round-lobed Hepatica	N		6		C	G5	S5		
1308	P-ANEVIVI	Anemone virginiana var. virginiana	Thimbleweed	N		4		C	G5	S5		
1345	P-APOANAN	Apocynum androsaemifolium androsaemifolium	Spreading Dogbane	N		3		C	G5	S5		
1369	P-ARANUDI	Aralia nudicaulis	Wild Sarsaparilla	N		4		C	G5	S5		
1381	P-ARCMIMI	Arctium minus ssp. minus	Common Burdock	I			-2		GNRTNR	SNA		
1402	P-ARITRTR	Arisaema triphyllum triphyllum	Jack-in-the-pulpit	N		5		C	G5	S5		
1432	P-ASACANA	Asarum canadense	Wild Ginger	N		6		C	G5	S5		
1434	P-ASCEXAL	Asclepias exaltata	Poke Milkweed	N		8		R	G5	S4		
1436	P-ASCININ	Asclepias incarnata incarnata	Swamp Milkweed	N		6		C	G5	S5		
1441	P-ASCSYRI	Asclepias syriaca	Common Milkweed	N		0		C	G5	S5		
1449	P-ASPOFFI	Asparagus officinalis	Garden Asparagus	I			-1	IC	G5?	SNA		
1470	P-ASTCORD	Aster cordifolius	Heart-leaved Aster	N		5			G5	S5		
4791	P-ASTLAHI	Aster lateriflorum	Calico Aster	N		3			G5?	S4?		
1483	P-ASTMACR	Aster macrophyllus	Large-leaved Aster	N		5			G5	S5		
1487	P-ASTNOVA	Aster novae-angliae	New England Aster	N		2			G5	S5		
1496	P-ASTPUPU	Aster puniceus var. puniceus	Purple-stemmed Aster	N		6			G5	S5		
1504	P-ASTUROP	Aster urophyllus	Arrow-leaved Aster	N		6			G4	S4		
1508	P-ATHFIAN	Athyrium filix-femina var. angustum	Northeastern Lady Fern	N		4		C	G5T5	S5		
4947	P-BELPERE	Bellis perennis	Lawn Daisy	I			no data	IR	GNR	SNA		
1556	P-BETPAPY	Betula papyrifera	White Birch	N		2		C	G5	S5		
1647	P-CALCANA	Calamagrostis canadensis	Canada Blue-joint	N		4		C	G5	S5		
1657	P-CALPALS	Calla palustris	Wild Calla	N		8		R	G5	S5		
1659	P-CALPALU	Calla palustris	Marsh-marigold	N		5		C	G5	S5		
1737	P-CARCONC	Cardamine concatenata	Cutleaf Toothwort	N		6		C	G5	S5		
1757	P-CARDIPH	Cardamine diphylla	Twin-leaved Toothwort	N		7		C	G5	S5		
1701	P-CARAQUA	Carex aquatilis	Aquatic Sedge	N	uncommon	7		U	G5	S5		
1713	P-CARBEBB	Carex bebbii	Bebb's Sedge	N		3		C	G5	S5		
1736	P-CARCOMO	Carex comosa	Bristly Sedge	N		5		C	G5	S5		
1743	P-CARCRIN	Carex crinita	Fringed Sedge	N		6		C	G5	S5		
1770	P-CARFLAV	Carex flava	Yellow Sedge	N		5		U	G5	S5		
1802	P-CARINTE	Carex interior	Inland Sedge	N		6		C	G5	S5		
1803	P-CARINTU	Carex intumescens	Bladder Sedge	N		6		C	G5	S5		
1807	P-CARLACU	Carex lacustris	Lake Sedge	N		5		C	G5	S5		
1812	P-CARLAXI	Carex laxiflora	Distant-flowered Sedge	N		5		C	G5	S5		
1823	P-CARLUPU	Carex lupulina	Hop Sedge	N		6		C	G5	S5		
1809	P-CARPELL	Carex pellita	Woolly Sedge	N	uncommon	4		C	G5	S5		
1858	P-CARPENS	Carex pensylvanica	Pennsylvania Sedge	N		5		C	G5	S5		
1859	P-CARPLAN	Carex plantaginea	Plantain-leaved Sedge	N		7		C	G5	S5		
1860	P-CARPLAT	Carex platyphylla	Broad-leaved Sedge	N		7		U	G5	S5		
1893	P-CARSTRI	Carex stricta	Tussock Sedge	N		4		C	G5	S5		

PLANTS

Valens Master Plan Natural Inventory

Appendix 7.5

ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	Coefficient of conservatism	Weediness	Carolinian plants (oldham 2017)	GRANK	SRANK	COSEWIC	OMNR Status
1916	P-CARVULP	Carex vulpinoidea	Fox Sedge	N		3		C	G5	S5		
1729	P-CARCARO	Carpinus caroliniana	Blue-beech	N		6		C	G5	S5		
1740	P-CARCORD	Carya cordiformis	Bitternut Hickory	N		6		C	G5	S5		
1956	P-CAUTHAL	Caulophyllum thalictroides	Blue Cohosh	N		6		X	G4G5	S5		
1974	P-CENMACU	Centaurea maculosa	Spotted Knapweed	I			-3		GNR	SNA		
2022	P-CHEGLAB	Chelone glabra	Turtlehead	N		7		C	G5	S5		
2046	P-CHRLEUC	Chrysanthemum leucanthemum	Ox-eye Daisy	I			no data		GNR	SE5		
2052	P-CICBULB	Cicuta bulbifera	Bulbous Water-hemlock	N		5		C	G5	S5		
2054	P-CICMACU	Cicuta maculata	Spotted Water-hemlock	N		6		C	G5T5	S5		
2067	P-CIRLUCA	Circaea lutetiana canadensis	Enchanter's Nightshade	N		3		C	G5T5	S5		
2062	P-CIRARVE	Cirsium arvense	Canada Thistle	I			-1	IC	GNR	SNA		
2076	P-CLACARO	Claytonia caroliniana	Broad-leaved Spring Beauty	N		7		U	G5	S5		
2089	P-CLEVIRG	Clematis virginiana	Virgin's-bower	N		3		C	G5	S5		
2092	P-CLIVULG	Clinopodium vulgare	Wild Basil	N		4		C	G5	S5		
2110	P-CONMACU	Conium maculatum	Poison Hemlock	I			-1	IR	G5	SNA		
2115	P-COPTRGR	Coptis trifolia groenlandica	Gold-thread	N		7		C	G5	S5		
2117	P-CORALTE	Cornus alternifolia	Alternate-leaved Dogwood	N		6		C	G5	S5		
2127	P-CORFORA	Cornus foemina racemosa	Grey Dogwood	N		2		C	G5T5	S5		
2139	P-CORSTOL	Cornus stolonifera	Red-osier Dogwood	N		2		C	G5	S5		
2144	P-CORVARI	Coronilla varia	Crown-vetch	I			-2		GNR	SNA		
2269	P-DACGLOM	Dactylis glomerata	Orchard Grass	I			-1	IC	GNR	SNA		
2280	P-DAUCARO	Daucus carota	Queen Anne's Lace	I			-2	IC	GNR	SNA		
2329	P-DIRPALU	Dirca palustris	Leatherwood	N		7		U	G4	S4?		
2354	P-DRYCART	Dryopteris carthusiana	Spinulose Wood Fern	N		5		C	G5	S5		
2364	P-DRYMARG	Dryopteris marginalis	Marginal Wood Fern	N		5		C	G5	S5		
4914	P-ECHPLAN	Echium plantagineum	Purple Viper's Bugloss	I			no data		GNR	SNA		
2393	P-ELAANGU	Elaeagnus angustifolia	Russian-olive	I			-1	IU	GNR	SNA		
2845	P-ELYHYST	Elymus hystrix	Bottle-brush Grass	N		5		C	G5	S5		
2460	P-EPIVIRG	Epifagus virginiana	Beech-drops	N		6		C	G5	S5		
2451	P-EPIHELL	Epipactis helleborine	Helleborine	I			-2	IC	GNR	SNA		
2466	P-EQUPALU	Equisetum palustre	Marsh Horsetail	N	rare	10		R	G5	S5		
2469	P-EQUSYLV	Equisetum sylvaticum	Woodland Horsetail	N		7		U	G5	S5		
2500	P-ERIPHIL	Erigeron philadelphicus	Philadelphia Fleabane	N		1		C	G5	S5		
2506	P-ERISTRI	Erigeron strigosus	Rough Fleabane	N		0		C	G5	S5		
2522	P-ERYAMAM	Erythronium americanum americanum	Yellow Trout-lily	N		5		CZ	G5T5	S5		
2536	P-EUOOBOV	Euonymus obovata	Running Strawberry-bush	N		6		C	G5	S5		
2551	P-EUPMAMA	Eupatorium maculatum ssp. maculatum	Spotted Joe-Pye-weed	N		3			G5T?	S5		
2557	P-EUPPERF	Eupatorium perfoliatum	Boneset	N		2		C	G5	S5		
2560	P-EUPRUGO	Eupatorium rugosum	White Snakeroot	N		5			G5	S5		
2565	P-EUTGRAM	Euthamia graminifolia	Grass-leaved Goldenrod	N		2		C	G5	S5		
2568	P-FAGGRAN	Fagus grandifolia	American Beech	N		6		C	G5	S4		
2600	P-FRAVEAM	Fragaria vesca americana	Woodland Strawberry	N		4		U	G5	S5		
2603	P-FRAVIVI	Fragaria virginiana virginiana	Common Strawberry	N		2			G5T5	SU		
2593	P-FRAAMER	Fraxinus americana	White Ash	N		4		C	G5	S4		
2596	P-FRANIGR	Fraxinus nigra	Black Ash	N		7		C	G5	S4		
2597	P-FRAPENN	Fraxinus pennsylvanica	Red Ash, Green Ash	N		3		C	G5	S4		
2611	P-GALAPAR	Galium aparine	Cleavers	N		4		C	G5	S5		
2612	P-GALASPR	Galium asprellum	Rough Bedstraw	N		6		C	G5	S5		
2626	P-GALPALU	Galium palustre	Marsh Bedstraw	N		5		R	G5	S5		
2637	P-GALTRIL	Galium triflorum	Sweet-scented Bedstraw	N		4		C	G5	S5		
2671	P-GERMACU	Geranium maculatum	Wild Geranium	N		6		C	G5	S5		
2676	P-GERROBE	Geranium robertianum	Herb Robert	I			-2	C	G5	S5		

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2680	P-GEUCANA	Geum canadense	White Avens	N		3		C	G5	S5		
2780	P-HIECACA	Hieracium caespitosum caespitosum	Yellow Hawkweed	I				-1	GNR	SNA		
2792	P-HIEPILO	Hieracium piloselloides	King Devil Hawkweed	I				-2	GNR	SNA		
2824	P-HYDVIRG	Hydrophyllum virginianum	Virginia Waterleaf	N		6		C	G5	S5		
2838	P-HYPPERF	Hypericum perforatum	Common St. John's-wort	I				-3 IC	GNR	SNA		
2849	P-IMPCAPE	Impatiens capensis	Spotted Touch-me-not	N		4		C	G5	S5		
2870	P-IRIVERS	Iris versicolor	Wild Blue Flag	N		5		C	G5	S5		
2893	P-JUGNIGR	Juglans nigra	Black Walnut	N		5		C	G5	S4		
2899	P-JUNARTI	Juncus articulatus	Jointed Rush	N		5		U	G5	S5		
2908	P-JUNCANA	Juncus canadensis	Marsh Rush	N	rare	6		R	G5	S5		
2929	P-JUNTENU	Juncus tenuis	Path Rush	N		0		C	G5	S5		
2933	P-JUNVIRG	Juniperus virginiana	Red Cedar	N		4		C	G5	S5		
2970	P-LARLARI	Larix laricina	Tamarack	N		7		U	G5	S5		
2991	P-LEORYZ	Leersia oryzoides	Rice Cut Grass	N		3		C	G5	S5		
2994	P-LEMMINO	Lemna minor	Common Duckweed	N		2		C	G5	S5		
2998	P-LEOCACA	Leonurus cardiaca cardiaca	Motherwort	I			no data	IC	GNR	SNA		
3046	P-LINBENZ	Lindera benzoin	Spicebush	N		6		C	G5	S5		
3111	P-LONTATA	Lonicera tatarica	Tartarian Honeysuckle	I			no data	IC	GNR	SNA		
3115	P-LOTORN	Lotus corniculatus	Birdfoot Trefoil	I				-2 IC	GNR	SNA		
3159	P-LYCUNIF	Lycopus uniflorus	Water-horehound	N		5		C	G5	S5		
3166	P-LYSCILI	Lysimachia ciliata	Fringed Loosestrife	N		4		C	G5	S5		
3174	P-LYSTHYR	Lysimachia thyrsiflora	Tufted Loosestrife	N		7		U	G5	S5		
3179	P-LYTSALI	Lythrum salicaria	Purple Loosestrife	I				-3 IC	G5	SNA		
3187	P-MAICANA	Maianthemum canadense	Wild Lily-of-the-valley	N		5		C	G5	S5		
3213	P-MATSTPE	Matteuccia struthiopteris var. pennsylvanica	American Ostrich Fern	N		5			G5	S5		
3230	P-MELOFFI	Melilotus officinalis	Yellow Sweet-clover	I				-1 IC	GNR	SNA		
3234	P-MENARBO	Mentha arvensis borealis	Common Mint	N		no data			G5T5	S5		
3264	P-MITDIPH	Mitella diphylla	Bishop's Cap	N		5		C	G5	S5		
3362	P-OENOAKE	Oenothera oakesiana	Evening-primrose	N		8		R	G5Q	S5		
3370	P-ONOSENS	Onoclea sensibilis	Sensitive Fern	N		4		C	G5	S5		
3391	P-OSMCINN	Osmunda cinnamomea	Cinnamon Fern	N		7		C	G5	S5		
3397	P-OSTVIRG	Ostrya virginiana	Ironwood	N		4		C	G5	S5		
3402	P-OXADILL	Oxalis dillenii	Common Yellow Wood-sorrel	N		0		U	G5	S5?		
3413	P-PANACAC	Panicum acuminatum var. acuminatum	Panic Grass	N		no data			G5	S5		
3456	P-PARINSE	Parthenocissus inserta	Virginia Creeper	N		4			G5	S5		
		Peltandra virginica	Green Arrow-arum, Tuckahoe		rare (book status)	no data						
3495	P-PHAARUN	Phalaris arundinacea	Reed Canary Grass	N		0		C	G5	S5		
3513	P-PHLPRAT	Phleum pratense	Timothy Grass	I				-1 IC	GNR	SNA		
3508	P-PHLDIVA	Phlox divaricata	Blue Phlox	N		7		C	G5	S4		
3533	P-PICABIE	Picea abies	Norway Spruce	I				-1 IX	G5	SNA		
3535	P-PICGLAU	Picea glauca	White Spruce	I/N		6		U	G5	S5		
3542	P-PILPUMI	Pilea pumila	Canada Clearweed	N		5		C	G5	S5		
3550	P-PINRESI	Pinus resinosa	Red Pine	I/N		8		R	G5	S5		
3552	P-PINSTRO	Pinus strobus	Eastern White Pine	N		4		C	G5	S5		
3553	P-PINSYLV	Pinus sylvestris	Scotch Pine	I				-3 IX	GNR	SNA		
3574	P-PLALANC	Plantago lanceolata	English Plantain	I				-1	G5	SNA		
3615	P-PODPELT	Podophyllum peltatum	May-apple	N		5		C	G5	S5		
3657	P-POLPUBE	Polygonatum pubescens	Solomon's-seal	N		5		C	G5	S5		
3621	P-POLACRO	Polystichum acrostichoides	Christmas Fern	N		5		C	G5	S5		
3677	P-POPBABA	Populus balsamifera ssp. balsamifera	Balsam Poplar	N		4		U	G5	S5		
3681	P-POPGRAN	Populus grandidentata	Large-toothed Aspen	N		5		C	G5	S5		
3684	P-POPTREM	Populus tremuloides	Trembling Aspen	N		2		C	G5	S5		

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3755	P-PREALBA	Prenanthes alba	White Lettuce	N		6			G5	S5		
3766	P-PREALTI	Prenanthes altissima	Tall White Lettuce	N		5			G5?	S5		
3791	P-PRUVULG	Prunella vulgaris	Heal-all	I			no data	IR	G5	S5		
3770	P-PRUAVIU	Prunus avium	Sweet Cherry	I				-2 IR	GNR	SNA		
3786	P-PRUSERO	Prunus serotina	Wild Black Cherry	N		3		C	G5	S5		
3789	P-PRUVIVI	Prunus virginiana virginiana	Chokecherry	N		2		C	G5	S5		
3819	P-QUEBICO	Quercus bicolor	Swamp White Oak	N		8		C	G5	S4		
3822	P-QUEMACR	Quercus macrocarpa	Bur Oak	N		5		C	G5	S5		
3828	P-QUERUBR	Quercus rubra	Red Oak	N		6		C	G5	S5		
4702	P-RANACRI	Ranunculus acris	Tall Buttercup	N				-2 IX	G5	SNA		
3857	P-RANRECU	Ranunculus recurvatus	Hooked Buttercup	N		4		C	G5	S5		
3878	P-RHACATH	Rhamnus cathartica	Common Buckthorn	I				-3 IC	GNR	SNA		
3884	P-RHAFRAN	Rhamnus frangula	Glossy Buckthorn	I				-3	GNR	SNA		
3893	P-RHUTYPH	Rhus typhina	Staghorn Sumac	N		1		C	G5	S5		
3902	P-RIBCYN	Ribes cynosbati	Prickly Gooseberry	N		4		C	G5	S5		
3905	P-RIBHIRT	Ribes hirtellum	Canada Gooseberry	N	uncommon	6		U	G5	S5		
3907	P-RIBLACU	Ribes lacustre	Swamp Black Currant	N	rare	7		R	G5	S5		
3913	P-RIBTRIS	Ribes triste	Swamp Red Currant	N		6		U	G5	S5		
3917	P-ROBPSEU	Robinia pseudo-acacia	Black Locust	I				-3	G5	SNA		
3936	P-ROSMULT	Rosa multiflora	Multiflora Rose	I				-3 IC	GNR	SNA		
3947	P-RUBALLE	Rubus allegheniensis	Common Blackberry	N		2		C	G5	S5		
3956	P-RUBIDID	Rubus idaeus idaeus	Red Raspberry	I			no data	IR	G5T5	SNA		
3958	P-RUBOCCI	Rubus occidentalis	Black Raspberry	N		2		C	G5	S5		
3968	P-RUBPUBE	Rubus pubescens	Dwarf Raspberry	N		4		C	G5	S5		
3969	P-RUDHIRT	Rudbeckia hirta	Black-eyed Susan	N		0		C	G5	S5		
3987	P-RUMORBI	Rumex orbiculatus	Great Water Dock	N		6			G5	S4S5		
4019	P-SALDISC	Salix discolor	Pussy Willow	N		3		C	G5	S5		
4069	P-SANCANA	Sanguinaria canadensis	Bloodroot	N		5		C	G5	S5		
4070	P-SANMARI	Sanicula marilandica	Common Black Snakeroot	N		5		C	G5	S5		
4094	P-SCIACUT	Scirpus acutus	Hard-stemmed Bulrush	N	uncommon	3			G5	S5		
4096	P-SCIATRO	Scirpus atrovirens	Black Bulrush	N		3		C	G5?	S5		
4099	P-SCICYPE	Scirpus cyperinus	Wool-grass	N		4		C	G5	S5		
4107	P-SCIMICR	Scirpus microcarpus	Red-sheathed Bulrush	N	uncommon	4		U	G5	S5		
4122	P-SCIVALI	Scirpus validus	Softstem Bulrush	N		5			GNR	S5		
4125	P-SCUGALE	Scutellaria galericulata	Common Skullcap	N		6		C	G5	S5		
4193	P-SILVULG	Silene vulgaris	Bladder Campion	I				-1 IC	GNR	SNA		
4209	P-SMIHISP	Smilax hispida	Bristly Greenbrier	N		6			G5	S4		
4221	P-SOLDULC	Solanum dulcamara	Climbing Nightshade	I				-2 IC	GNR	SNA		
4215	P-SOLALAL	Solidago altissima var. altissima	Eastern Tall Goldenrod	N		1				S5		
4218	P-SOLCAES	Solidago caesia	Blue-stem Goldenrod	N		5		C	G5	S5		
4222	P-SOLFLEX	Solidago flexicaulis	Zig-zag Goldenrod	N		6		C	G5	S5		
4223	P-SOLGIGA	Solidago gigantea	Late Goldenrod	N		4		C	G5	S5		
4245	P-SOLRURU	Solidago rugosa ssp. rugosa	Rough Goldenrod	N		4		C	G5T5	S5		
4368	P-TARERYT	Taraxacum erythrospermum	Red-seeded Dandelion	I				-1 IX	GNR	SNA		
4382	P-THADIOI	Thalictrum dioicum	Early Meadow-rue	N		5		C	G5	S5		
4383	P-THAPUBE	Thalictrum pubescens	Tall Meadow-rue	N		5		C	G5	S5		
4390	P-THEPAPU	Thelypteris palustris var. pubescens	Marsh Fern	N		5		C	G5	S5		
4395	P-THUOCCI	Thuja occidentalis	White Cedar	N		4		C	G5	S5		
4399	P-TIACORD	Tiarella cordifolia	Foamflower	N		6		C	G5	S5		
4400	P-TILAMER	Tilia americana	American Basswood	N		4		C	G5	S5		
3890	P-RHURADI	Toxicodendron radicans	Poison-ivy	N		2		C	G5	S5		
4414	P-TRAPRPR	Tragopogon pratensis ssp. pratensis	Meadow Goat's-beard	I				-1 IX	GNR	SNA		

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4426	P-TRIBOBO	Trientalis borealis borealis	Starflower	N		6	C		G5	S5		
4448	P-TRIPRAT	Trifolium pratense	Red Clover	I			-2	IC	GNR	SNA		
4432	P-TRIERC	Trillium erectum	Purple Trillium	N		6	C		G5	S5		
4437	P-TRIGRAN	Trillium grandiflorum	White Trillium	N		5	C		G5	S5		
4424	P-TRIAURA	Triosteum aurantiacum	Wild Coffee	N		7	U		G5	S5		
4462	P-TYPANGU	Typha angustifolia	Narrow-leaved Cattail	N		3	IC		G5	SNA		
4463	P-TYPLATI	Typha latifolia	Common Cattail	N		3	C		G5	S5		
4466	P-ULMAMER	Ulmus americana	White Elm	N		3	C		G5?	S5		
4473	P-ULMTHOM	Ulmus thomasii	Rock Elm	N		6	R		G5	S4?		
4489	P-UVUGRAN	Uvularia grandiflora	Large-flowered Bellwort	N		6	C		G5	S5		
4549	P-VERTHAP	Verbascum thapsus	Common Mullein	I			-2	IC	GNR	SNA		
4535	P-VEROFFI	Veronica officinalis	Common Speedwell	I			-2	IX	G5	SNA		
4558	P-VIBACER	Viburnum acerifolium	Maple-leaved Viburnum	N		6	C		G5	S5		
4564	P-VIBOPUL	Viburnum opulus	Guelder-rose	I			-1	IX	GNR	SNA		
4567	P-VIBTRIL	Viburnum trilobum	Highbush-cranberry	N		5			G5T5	S5		
4571	P-VICCRAC	Vicia cracca	Bird Vetch	I			-1	IX	GNR	SNA		
4583	P-VIOBLAN	Viola blanda	Sweet White Violet	N	uncommon	6	U		G4G5	S5		
4585	P-VIOCONS	Viola conspersa	Dog Violet	N		4			G5	S5		
4599	P-VIOPUBE	Viola pubescens	Downy Yellow Violet	N		5	C		G5T5	S5		
4602	P-VIOROST	Viola rostrata	Long-spurred Violet	N		6	U		G5	S5		
4607	P-VIOSORO	Viola sororia	Common Blue Violet	N		4	C		G5	S5		
4618	P-VITRIPA	Vitis riparia	Riverbank Grape	N		0	C		G5	S5		
4645	P-ZANAMER	Zanthoxylum americanum	Prickly-ash	N		3	C		G5	S5		
Identified to Sp only												
ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	Coefficient of conservatism	Weediness	Carolinain plant	GRANK	SRANK	COSEWIC	OMNR Status
2605	P-FRX__SP	Fraxinus sp.	Ash Species	N		no data						
1456	P-AST__SP	Aster sp.	Aster Species	N		no data						
2678	P-GEU__SP	Geum sp.	Avens Species	N		no data						
2610	P-GAL__SP	Galium sp.	Bedstraw Species	N		no data						
1565	P-BID__SP	Bidens sp.	Beggar-ticks Species	N		no data						
		Uvularia sp.	Bellwort species	N		no data						
4932	P-UTR__SP	Utricularia sp	Bladderwort Species	N		no data						
3592	P-POA__SP	Poa sp.	Blue Grass Species	N		no data						
1125	P-TYP__SP	Typha sp.	Cattail Species	N		no data						
4418	P-TRF__SP	Trifolium sp.	Clover Species	N		no data						
3214	P-MAU__SP	Malus sp.	Crabapple Species	N		no data						
3900	P-RIB__SP	Ribes sp.	Currant Species	N		no data						
4978	P-TAR__SP	Taraxacum sp	Dandelion Species	I		no data						
4465	P-ULM__SP	Ulmus sp.	Elm Species	N		no data						
3186	P-MAI__SP	Maianthemum sp.	False Solomon's Seal Species	N		no data		C				
2486	P-ERI__SP	Erigeron sp.	Fleabane Species	N		no data						
4214	P-SOL__SP	Solidago sp.	Goldenrod Species	N		no data						
4615	P-VIT__SP	Vitis sp.	Grape Species	N		no data						
2777	P-HIE__SP	Hieracium sp.	Hawkweed Species	N		no data						
2537	P-EUP__SP	Eupatorium sp.	Joe-pye Weed Species	N		8						
3098	P-LON__SP	Lonicera sp.	Honeysuckle Species	N		no data						
2461	P-EQU__SP	Equisetum sp.	Horsetail Species	N		no data						
1966	P-CEN__SP	Centaurea sp.	Knapweed Species	I		no data						
3233	P-MEN__SP	Mentha sp.	Mint Species	N		no data						
4474	P-URT__SP	Urtica sp.	Nettle Species	N		no data						
1688	P-CAR__SP	Carex sp.	Sedge Species	N		no data						
3532	P-PIC__SP	Picea sp.	Spruce Species	N		no data						

PLANTS

Valens Master Plan Natural Inventory

Appendix 7.5

ID	Species Code	Scientific Name	Common Name	Native Status	City of Hamilton Status	Coefficient of conservatism	Weediness	Carolinain plants (oldham 2017)	GRANK	SRANK	COSEWIC	OMNR Status
2827	P-HYP__SP	Hypericum sp.	St. John's-wort	N		no data						
2592	P-FRA__SP	Fragaria sp.	Strawberry Species	N		no data						
4420	P-TRI__SP	Trillium sp.	Trillium Species	N		no data						
4579	P-VIO__SP	Viola sp.	Violet Species	N		no data						
3465	P-PAT__SP	Parthenocissus sp.	Virginia Creeper Species	N		no data						
2050	P-CIC__SP	Cicuta sp.	Water-hemlock Species	N		no data						
3164	P-LYP__SP	Lycopus sp.	Water-horehound Species	N		no data						
4005	P-SAL__SP	Salix sp.	Willow Species	I		no data						

FLORISTIC SUMMARY & ASSESSMENT			
Species Diversity			
Total Species:		262	
Native Species:		186	71%
Exotic Species		45	17%
Species ID'd to sp. only		31	12%
Total Taxa in Region (NAI 2014)		1496	
% Regional Taxa Recorded		18%	
Regionally Significant Species		3	(Goodban)
S1-S3 Species		0	
S4 Species		11	
S5 Species		168	
Co-efficient of Conservatism and Floral Quality Index			
Co-efficient of Conservatism (CC) (average)		4.66	
CC 0 to 3	lowest sensitivity	43	
CC 4 to 6	moderate sensitivity	116	
CC 7 to 8	high sensitivity	23	
CC 9 to 10	highest sensitivity	1	
Floral Quality Index (FQI)		63.50	



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A Healthy Watershed for Everyone