



# KAWARTHA CONSERVATION

Discover • Protect • Restore



LEADERS IN  
INTEGRATED  
WATERSHED  
MANAGEMENT

We are part of the

Kawartha Lakes  
**POLLINATOR  
PATHWAY**

KAWARTHA LAKES

All pollinators

# Our Corporate Values

**OUR VALUES GUIDE OUR ACTIONS, AS THEY SHAPE THE KIND OF ORGANIZATION THAT WE ARE PART OF. IN ALL OF OUR DECISION-MAKING, WE WILL:**

- Act with Integrity
- Value Knowledge
- Promote Teamwork
- Achieve Performance Excellence
- Foster Innovation



## Our **VISION**

A sustainable watershed with clean and abundant water and natural resources assured for future generations.

## Our **MISSION**

To be leaders in integrated watershed management and conservation.

## Our **FOCUS**

Outstanding water quality and quantity management, support by healthy landscapes through planning, stewardship, science and education.

# 2019 Board Of Directors

- CHAIR – Ted Smith Region of Durham (Township of Brock)
- VICE-CHAIR – Andy Letham City of Kawartha Lakes
- Pat Dunn- City of Kawartha Lakes
- Kathleen Seymour-Fagan- City of Kawartha Lakes
- Ron Hooper – Region of Durham (Municipality of Clarington)

- Deborah Kiezebrink – Region of Durham (Township of Scugog)
- Angus Ross – Region of Durham (Township of Scugog)
- Cathy Moore – Township of Cavan Monaghan
- Ron Windover – Municipality of Trent Lakes

# Message from the Chair and CAO



**A**s we look back on 2019, it was both a year of both tremendous challenges and a transition year highlighting the value and opportunity for conservation authorities in their integral role in the protection of people and property.

Property damage from weather extremes in 2019 cost Canadians millions and the economy billions of dollars. Storms caused extensive power outages from coast to coast to coast, some for hours, more still for days and weeks.

Big floods, especially in Ontario, Quebec and New Brunswick made headlines across the country. The Ottawa River flood was bigger and worse than in 2017. Everything about the flood, including its magnitude, duration and impacts, was unprecedented. Significant flooding also occurred in central Ontario's cottage country, on the shores of the Lower Great Lakes, and in Quebec's Beauce region.

Locally, the flooding that occurred along the Burnt River in 2019 was higher, longer and contained more water than any other flood in Kawartha Lakes' history. The water rose 20 centimetres higher than the historic flooding in 2013.

For the agricultural community, 2019 presented enormous challenges for food producers and the farming industry across the country. For many local farmers

the growing weather was especially disappointing. Some farmers across Eastern Canada in fact, said they could have bought both flood insurance and drought insurance in the same growing season.

Farming became a year-long challenge for Western farmers and ranchers when it was too cool throughout the growing season and either too dry at the start or too wet in the fall, leaving the harvest (for some) to be completed in 2020. It was the worst-ever harvest for others who managed to complete it.

The final year of the decade also concluded the warmest decade on record in Canada. Average temperature for the ten year period (2010–2019) was 1.42 °C above the long-term conditions (1948–2019). Since the 1970s, each successive decade has been warmer than the last with the warming accelerating after 2000.

There was a lot of positives in 2019. Once again, hundreds of local youth participated in education classes, PA Day Camps and Summer Nature Camps, with more people than ever coming out to celebrate our community and nature at the second annual Christmas at Ken Reid event in December. It is great to see our Conservation areas continue to grow in popularity among every age demographic.

What 2019 also did, was to issue a stark reminder that our weather is changing, our climate is changing, and we need to be

doing more, not less, to adapt. Rather than look for ways to go back to the way things were, we need to accept our new reality and move forward looking for ways to address and mitigate where we are today and where we are going.

To help address the issues, we need to understand the changes and their impacts at a local level. What are our lakes and rivers and streams doing? How is development impacting them and how can we better prepare our communities for the reality of a changing climate? What can we do to ensure resilient communities?

2020 is defined as having a clear vision, focused, to see, ideas, possibilities for the year. For us, 2020 is about moving forward in concert with our member municipalities, working together with our partners and community groups, and continuing to put the best needs of our watershed community first. Let 2020 be the year we recognize the intrinsic role conservation authorities play in helping to monitor and measure change, leading proactive steps with our community partners to help mitigate the growing frequency of severe weather.

There is much to be excited about in 2020, and we look forward to continuing in a progressive and positive direction to work with and for the residents, families, businesses and countless organizations across our watershed that rely on us. 🍁

Ted Smith — Chair

Mark Majchrowski — CAO

# Planning and Regulation



**P**lanning, Development and Engineering Services provides a service to municipalities and our watershed community through the environmental review of development applications (under the Planning Act) and inquiries, and through the regulation and enforcement of development activities in areas prone to natural hazards, such as flooding, unstable soils, and steep slopes, and in relation to watercourses and wetlands. In reviewing planning applications, Kawartha Conservation provides advice, recommendations, and specific conditions for development that are in keeping with Provincial and local municipal policies to ensure proposals have regard for public

safety and the environment.

We have been actively reviewing our policies related to development within floodplains, wetlands, hazardous lands, etc. These updates are important to ensure that our policies relate directly to current knowledge and all applicable municipal, provincial and federal policies (e.g. Ontario Provincial Policy Statement, etc.).

In the past few years, the department made a number of service improvements, including: a day each week dedicated to in-house pre-consultations meetings; establishment of regular development team meetings with all municipal partners; customer-service oriented application improvements; implementation of a streamlined approvals process for minor

permits; standardized permissions for certain activities to integrate the approval process with municipal partners; and, enhanced mapping and information available to the public on the Kawartha Conservation website. Continued customer service excellence in a timely fashion remains our paramount goal for 2020, in line with permitting timelines that were proactively reduced by 30% in addition to other service improvements.

## Planning

Conservation Authorities have been delegated the responsibility of commenting on behalf of the Province of Ontario on planning matters related to natural hazards and plan review

advice through municipal agreements with respect to the health of watersheds including the management of water and natural heritage resources. By providing these comments, we help to protect against the loss of life, property damage, and social disruption, and encourage the responsible management and protection of environmentally sensitive areas for future generations, while ensuring compliance with Provincial legislation at the local level. The department provides plan review comments on municipally initiated planning applications, as well as third party development applications (e.g. Official Plan amendments, Zoning By-law amendments, plans of subdivisions, consents, minor variances, etc.) Initiated by private landowners and developers.

## Regulation

Throughout the 2,563 square kilometre watershed, Kawartha Conservation administers the Section 28 regulation of the Conservation Authorities Act, (Ontario Regulation 182/06, the Regulation of Development, Interference with Wetlands

and Alterations to Shorelines and Watercourses) that regulates development in relation to river and stream valleys, steep slopes, watercourses, floodplains, and wetlands, plus the respective allowances that are associated with each feature. Development activities, including construction of buildings and structures, changes to grade, in-water structures and the placement of fill in regulated features requires approval in the form of a permit from Kawartha Conservation.

## Information Management System

In 2019 Kawartha Conservation continued to improve its use of technologies, with the continued development and use of an Information Management System (IMS) used for the tracking and management of permits files. Additionally, the implementation of Microsoft Office 365 has improved information sharing across departments throughout the organization. Used in conjunction with each other these two systems will allow for better tracking of records, increase workflow, and

result in much greater efficiency across the organization. As part of this ongoing effort to increase efficiency, more than 185,000 pages of planning and financial records were scanned in 2019 as part of the project.

## Website Redevelopment Project

Kawartha Conservation issued an RFP for the website redevelopment project, awarding the contract in September. Work began in earnest with an aggressive timeline to have the site up and running early in 2020. When launched, the new website will be a modern, updated tool that will assist residents, visitors, developers, seasonal residents, real estate professional, municipal partners and others with a fully accessible, easy to navigate website that prioritizes easy, intuitive access to information. The content will be streamlined as well as providing a comprehensive search function so users can find what they are looking for quickly and efficiently. 🌸



**The planning and permitting department had a full year with 415 permit applications issued in 2019.**

## Enforcement

Complaints Received: 46  
 Remediation Agreements Issued: 8  
 Violations Discovered: 28  
 Violations Resolved: 12  
 Permit Inspections Completed: 5



# Flood Plain Mapping



**K**nowing the extent of the flood plain is an important tool for land use planning and emergency management. This knowledge helps guide land use away from high-risk areas and for areas where historical development has already occurred, helps to identify ways to mitigate flood risk. The intent of flood plain mapping is to

better protect people, property and their investments.

A number of flood plain mapping studies were completed in 2019 for priority flood prone areas within City of Kawartha Lakes, including Dunsford Creek (Emily), Bobcaygeon Tributary, and Burnt River. In total 25 km of watercourse was mapped and the flood plain was defined.

Work has also continued on flood plain mapping studies on Mariposa Brook, McLaren's Creek and a small tributary in Fenelon Falls which are slated to be completed in 2020. 2019 is the first year of a comprehensive implementation action plan, which includes projects focused within the rural, urban, shoreline, and general programs. 🍁

## HIGHLIGHTS FOR 2019 INCLUDE:

■ An Erosion and Sediment Control Symposium hosted in Fenelon Falls, with over 100 people participating including suppliers, installers, and approvers.

■ Securing locations on three lakes (Balsam, Sturgeon, Scugog) to test "aerators as a technique to control nuisance aquatic plants.

■ Researched shoreline land use policies in 25 lake-based municipalities for consideration by municipal planning staff in their policy protection of lake shorelines.

# Lake Scugog Enhancement Project



## PROJECT OBJECTIVES INCLUDE:

- Dredging selected areas to a navigational depth of 1.8m
- Repurposing dredgeate to enhance a fringe wetland
- Creation of an engineered berm to protect a constructed wetland
- Installing oil & grit separators for improved stormwater management

**T**he Lake Scugog Enhancement Project (LSEP) is an environmental improvement and dredging project for Port Perry Bay that benefits the whole lake. The range of benefits is broad, including environmental, social, economic, tourism and recreation.

The project was initiated by the Healthy Lake Scugog Steering Committee (HLSSC) which was established in 2013 as a Committee of Council to the Township of Scugog. Kawartha Conservation is the scientific and technical lead on the Township project. 🍁



During 2019 progress has been made on the project with respect to addressing agency permitting and regulation requirements including:

- Review of existing conditions including sediment quantity and quality
- Updated Design Study
- Public Open Houses
- Assistance to the Township in their Municipal Class Environmental Assessment (Schedule B)
- Basic Impact Assessment- Parks Canada (under review)
- Fisheries Authorization- Department of Fisheries and Oceans (under review)
- Navigation Protection Program permit- Transport Canada (under review)

# Academic Partnership

Lake Management Plan Implementation



**K**awartha Conservation works with several post-secondary institutions, including Fleming College, Trent University and the Ontario Technical University.

Our staff provide training opportunities for students within our monitoring program and we have partnered with Ontario Technical University on our Nearshore Water Quality Study covering Lake Scugog, Sturgeon, Pigeon, Cameron and Balsam Lakes. Academia such as Trent and Lakehead Universities are part of our Science and Technical Committee and provide important links and knowledge sharing which support our lake management planning implementation efforts.

## Advancing Water Quality Research

Through preparation of Lake Management plans in previous years, a number of streams were identified as impaired or reaching high levels of phosphorus, beyond the Provincial Water Quality Guideline of 30µg/L. Jennings, McLaren's and Reforestation Creeks in the central watershed and Layton River and Cawker's and William's creeks in the

south were identified for further study. Water chemistry and water flow is being examined at a finer scale in these watercourses over a 3 year period for multiple high and low flow events.

The data is being analyzed and a report including prioritizing stewardship activities on hot spots along the creek will be released in 2020.

## Other Initiatives:

For the past 3 years, Kawartha Conservation has been part of a large-scale study on Lake Scugog focused on 'Where Have All the Walleye Gone?' Project partners include the Scugog Lake Stewards, Ontario Tech University, York University, MNRF & MOKA Media. Organizations within this collaborative agreement are contributing individual research projects towards the cumulative program initiative, funded by the Ontario Trillium Foundation.

The completed report is scheduled to be released in 2020.

## Kawartha Water Watch

This Citizen Science Water Quality Program has been ongoing since 1998. We train volunteers to collect water quality data on tributaries monthly, from June to

September on 12 long term monitoring sites. Parametres tested include nutrients, phosphorus and nitrogen, turbidity, and pH. This initiative provides important water quality information on private property and in areas not regularly monitored to expand our reach to protect and preserve these areas.

Fleming College's Environmental Technology Program perform water quality monitoring along the length of Mariposa Brook, at each road crossing as part of a field lab exercise (12 sites). Staff present the results to students each year highlighting the importance of collaborating with and training young professionals through invaluable hands-on experience. 🌱

### STUDIES INCLUDED:

- Dissolved oxygen concentrations under ice
- Paleolimnological work (re-creation of the lake over time using sediment cores)
- Walleye Watch (Citizen Science-counting walleye and spawning pairs)
- Potential spawning habitat for walleye in tributaries
- Vegetation surveys (nearshore and open water)
- Macroinvertebrate surveys (nearshore & open water)
- Water chemistry (nearshore and open water)
- Land use
- Educational outreach- videos

*The completed report is scheduled to be released in Spring 2020.*



# Monitoring Water Quality

## Lake Management Plan Implementation



### Coldwater Streams Monitoring

**S**ensitive coldwater aquatic ecosystems are classified across 21 percent of streams and rivers in our jurisdiction.

These systems support sensitive aquatic life such as Brook Trout, which are a management focus because their populations across southern Ontario are in widespread decline. Our monitoring program evaluates how well these sensitive streams are doing and whether they are likely to remain capable of supporting sensitive coldwater aquatic life. Highlights for 2019 include the following:

- Deployment of 28 water temperature data loggers at road-stream intersections.
- Working with Kawartha Land Trust and Central Lake Ontario Conservation to address the thermal degradation from

online ponds in the Fleetwood Creek and Nonquon River subwatersheds.

- Established a data management system in the WISKI program to securely store, and readily access, over 13 years of water temperature data.

### Aquatic Biomonitoring

In 2016 a project was initiated to characterize the aquatic ecosystem of small streams that flow through urban areas of Lindsay, Port Perry, Fenelon Falls, Bobcaygeon, and Omemee. This is done by collecting bottom dwelling stream bugs (such as insects, crustaceans, worms, and snails) and key habitat characteristics such as substrate, flow, and channel dimensions. The intent is to sample 50 sites over a five year period. The purpose of this project is to determine how well urban streams are doing with dense urban development all

around them. Highlights for 2019 include the following:

- Sampling aquatic life at 8 locations within Jennings Creek, Scugog River, Cawkers Creek, Sturgeon Lake, and Cameron Lake.
- Data for 218 occurrences entered into a central database to securely store, and readily access, data on our streams.
- Established partnership with Trent University to establish a monitoring program for our lake shorelines.

### Watershed Planning in Durham Region

The purpose of this project is to ensure that Durham Region has the most up to date information related to water resources (e.g., permanent and intermittent streams, wetlands, significant groundwater recharge areas, springs, etc.)



and evaluated the relevance of existing watershed plans within an updated planning framework (e.g., Lake Scugog Environmental Management Plan, Oak Ridges Moraine Watershed Plans, etc.). This will assist in the processing of Planning Act applications faster and ensuring conformity with provincial policy. Highlights for 2019 include the following:

- Active participation in Municipal Official Plan Conformity Review exercise.
- Compared all existing Watershed Plans for conformity with provincial policies, specifically the Growth Plan, Greenbelt Plan, and Oak Ridges Moraine Conservation Plan
- Ground-truthed active flow locations at 387 road-stream intersections, the existence of 103 wetlands, and sensitive streams at 61 sites.
- Completed a rapid shoreline survey of

Lake Scugog, to identify major land use types along the land-water interface.

### Source Water Protection

The Source Water Protection program helps to implement a multi-barrier approach to strengthen the protection of municipal drinking water sources by educating and informing residents about these systems and helping to assist municipalities in their efforts to implement source protection. Staff attended multiple events to provide educational materials to the public on how to protect their sources of drinking water, and they also gave guest lectures at Fleming College to share information with students in the on the program.

Through an agreement with the City of Kawartha Lakes, Kawartha Conservation provides services to the community which

focus on the development of plans with landowners to ensure their activities will not have an impact on water supplies. Nineteen of these plans have been negotiated with landowners to manage activities that could have an impact on local drinking water supplies. A number of development applications that have been proposed adjacent to municipal water supply locations have been reviewed and 27 notices were issued to ensure that local municipal water systems are protected. 🍁

# Flooding

Climate Change – Low Water Response



## FLOOD FORECASTING AND WARNING

- Watershed Conditions Statement – Water Safety – 11
- Watershed Conditions Statement – Flood Outlook – 3
- Flood Watch - 6
- Flood Warning - 10

**W**ith investment from the Province and the Region of Durham we have upgraded a wet weather monitoring station in Port Perry to an all-weather precipitation monitoring gauge, which enables us to monitor snow across the watershed. It is also paramount in monitoring mixed and freezing precipitation that is becoming more frequent in the changing climate.

## Flooding

Spring of 2019 has marked a busy flooding season. The first notable high-water event occurred in February, as air temperature reached +12°C; the snowpack melted

and rain fell. During the third week of March the waters in rivers and streams rose again, and in some monitoring locations, exceeded historically recorded highs (Blackstock Creek) where road and property flooding as well as ice jams were observed. Later in the spring, as the large northern tributaries brought a significant amount of water into the Kawartha Lakes, the lakes remained at a very high level from mid-April until the beginning of May. We worked closely with neighbouring conservation authorities, provincial and federal agencies to keep our member municipalities and public well informed about the flooding conditions and forecast and assist municipalities in their respond to the events.

Overall, 30 flood messages were issued in 2019. Twenty-five of those took place in the spring.

## Groundwater Monitoring

We continue to monitor levels and quality of groundwater resources within the watershed through 13 wells that are part of the Provincial Groundwater Monitoring Network. Kawartha Conservation is a leading partner for the Ministry of Conservation, Environment and Parks (MECP) in a pilot project that evaluates new data transmission equipment. Three wells are currently equipped with equipment that sends the real-time data to both Kawartha Conservation and the MECP. 🌸

# Education Program



**K**awartha Conservation's education programs meet provincial curriculum standards and focuses on environmental issues that are important today. In 2019, 1,012 children participated in Kawartha Conservation's education program.

■ 1,012 children participated in our Education program in 2019

■ 337 children participated in our Nature Camp Programs

■ Hosted 12 Parent and Tot programs.

■ Hosted community walks for over 70 participants.

■ We hosted 7 different P.A. Day Camps with 105 children attending

■ Hosted the Trillium Lakelands District School Boards Eco-Summit at Ken Reid Conservation Area

■ Attended other events including the Nonquon Wetland Festival, STEM Night at Prince Albert PS, and the Kawartha Haliburton Children's Water Festival

■ Held a 40th Anniversary Poster Contest to local schools within our watershed, asking them to create a multimedia art piece that demonstrated the theme "Our Lakes, Our Land, What do you they mean to you?". 🍁

# Conservation Area and Stewardship



- Partnered with Bee City, Pollinator Partnerships Canada and Scott Young Public school to implement pollinator patches at Windy Ridge CA.
- Partnered with OFAH to remove Garlic Mustard from Ken Reid Conservation Area
- Bioblitz completed on Fleetwood Creek Natural Area in partnership with the Oak Ridges Moraine Land Trust and the Ontario Heritage Trust
- Partnered with Fleming College for a variety of projects including trail design and construction, ecological enhancement projects, and property stewardship projects.
- Partnered with Durham Regional Police Services allowing for special training at Durham East Cross Forest.

- \$116,000 in revenue raised through habitat compensation projects.

## Building Projects and Upgrades

- Over 35 kms of trail maintained for visitor safety and enjoyment
- 250 metres of trail constructed at Windy Ridge
- Refaced 150 metres of boardwalk at Ken Reid.
- Constructed 800 metres of accessible trail
- Constructed rain garden and xeriscaping demonstration site at Ken Reid.
- Invasive species management at Durham East Cross Forest 🍁

## STEWARDSHIP BY THE NUMBERS

- 3 Bluescaping Demonstration Sites
- 2 Shoreline Demonstration Sites
- 66,900 L of rainwater diverted through demonstration sites
- 15,860 L of rainwater capacity increased through rain barrel sales
- 2,010 Native plants sold / planted
- 18,439 Native trees sold / planted
- 38 grants provided to support local restoration projects
- 103 feet of shoreline restored through demonstration sites
- 15 community events hosted 710 participants
- 83 private landowner consultations
- \$23,300 in revenue raised
- \$49,500 in foundation grants leveraged



# Christmas at Ken Reid



In 2019, we hosted our 2nd annual Christmas at Ken Reid community event, seeing over 1,200 visitors across the watershed attend. This community event aims to engage, entertain and bring together families, individuals, businesses and other not for profit organizations to celebrate the holiday season.

A total of 37 volunteers, providing more than 206 volunteer hours, helped to make the day a tremendous success for our entire community.

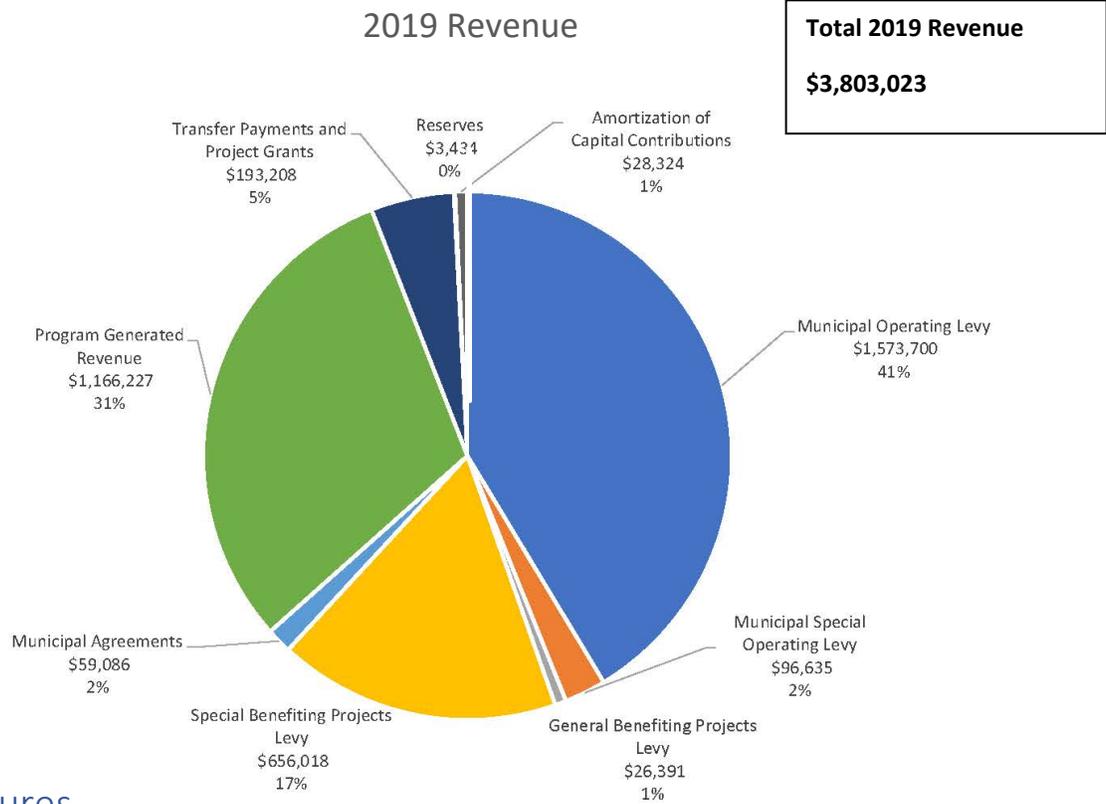
Thank you to the 28 community businesses and organizations who supported this 2nd annual Christmas at Ken Reid event, we were able to provide this extremely popular and well received event FREE again to everyone.

The day featured musical entertainment, interactive animal displays, horse and wagon rides, refreshments, story walks, kids crafts, along with Santa and Mrs. Claus. ❄️

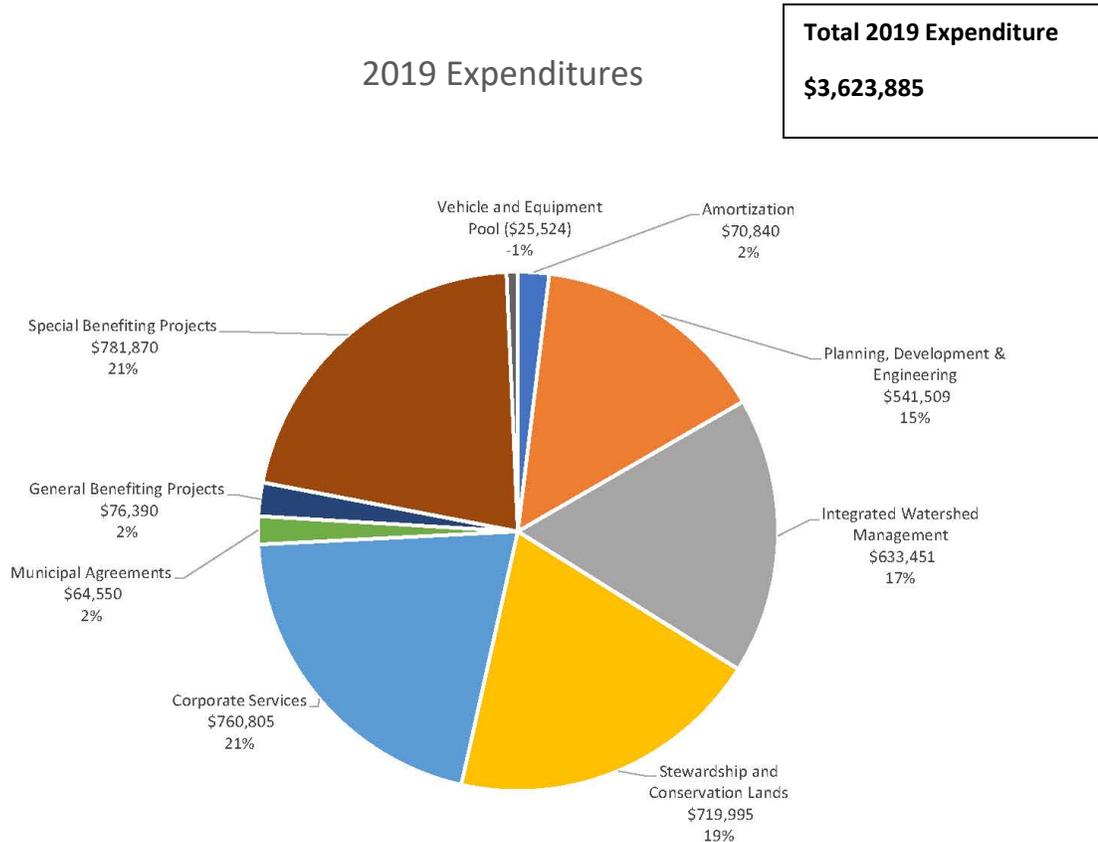


# 2019 Audited Financial Statement

## Sources of Revenue



## Expenditures



The complete auditor's report for the year ended December 31, 2019 is available on our website.