

# Staff Report



**To** Council

**Department** Economic Growth and Community Development Services  
Department

**Meeting Date** Council and Committee of the Whole Meetings - 12 Aug 2025

**Subject** ResiLienT Loyalist Township Climate Action Plan 2024 Report  
Card

**Report Number** SR- 2977

**Prepared by** Luke MacDonald

## Recommendation

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1. That the report from the Engineering and Environment Division, August 12, 2025 re: ResiLienT Loyalist Township Climate Action Plan 2024 Report Card, be received.

## Executive Summary

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### Purpose of Report

The purpose of this staff report is to provide Council with a "report card" type update on the Township's accomplishments in 2024 under the Climate Action Plan.

### Report Highlights

The key initiatives highlighted in this report include:

- The Township's Neighbourhood Tree Planting Program secured a \$15,000 community grant.
- The FoodCycler initiative continued successfully, significantly diverting household food waste.
- The Township expanded electronic waste collection drives and continued using innovative strategies, like battery recycling and transitioning to digital materials to reduce waste.
- Launching the Loyalist Link transit service notably increased connectivity and supported active transportation networks, with expanded trail infrastructure and bike repair stations.

- Significant facility upgrades included installing heat pumps at heritage sites and energy-efficient lighting at recreational facilities.
- The W.J. Henderson Recreation Centre is under construction in order to become Net Zero ready.
- Over 125 water meter replacements enhanced efficiency in water management, while significant watermain and sewer infrastructure upgrades reduced inflow, infiltration, and system losses.
- Robust partnerships flourished, such as initiatives with Odessa Public School for the “Imagining My Sustainable Community” project, and new collaborations with Queen’s University on research projects. The launch of the Resilient Loyalist Civic Award Program also celebrated local sustainability champions.

## Report Details

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### Background and Analysis

At their regular session on February 8, 2021, Loyalist Township Council passed the following resolution:

**Resolution 2021.42.7.** Moved by Councillor Townend and Seconded by Councillor Budarick that the report from the Engineering and Environment Division, February 8th, 2021 re: ResiLienT Loyalist Township - Climate Action Plan, be received; and that the Climate Action Plan and its goals be approved. **Motion carried.**

Since the adoption of the climate action plan, staff have brought back an annual report to council on the status of the implementation of the various initiatives. This is the third such report. Refer to the attached document for the full “report card”.

### Financial Implications

Several of the goals and actions presented in this plan will have future financial implications. Staff will present Council with further initiatives in line with the plan included in future operations and capital budgets. Initiatives implemented to date were part of already planned and approved projects in the Township's operations and capital budget.

### Risks or Stakeholder Implications

The Climate Action Plan presents a series of recommended goals and actions that could be undertaken to meet the GHG reduction targets previously approved by Council. If funding for initiatives is not available in the future, the Township may not meet the objectives identified in this plan.

### Communication and Consultation Plan

Staff continue to work with the Communications Division to communicate the implementation of various initiatives highlighted throughout the attached document through social media posts and our website.

The Development Manager; Public Works Manager; Transportation Manager; Heritage, Culture, and Tourism Manager; Director of Corporate Services, Strategy, and Innovation; Communications Manager; Utilities Manager; Director of Emergency Services; Recreation and Facilities Manager; Director of Community and Customer Services have been consulted for the content of this report card.

## Attachments

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[Resilient Climate Action Report Card - 2024](#)

## Approved by

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Approved by	Status:
Marie-Josée Merritt, Director of Economic Growth and Community Development Services	Approved - 23 Jul 2025
Shelley Stedall, Treasurer	Approved - 23 Jul 2025
Rebecca Murphy, Chief Administrative Officer	Approved - 28 Jul 2025





**2024**

**Resilient Climate Action  
Report Card**







## Executive Summary:

In 2024, Loyalist Township delivered meaningful advancements in climate action across diverse sectors. Key highlights include:

- **Sustainable Land Use:** The Township's Neighbourhood Tree Planting Program secured a \$15,000 community grant. Efforts to rewild township-owned lands advanced, notably through pollinator-friendly gardening practices and reduced mowing to boost biodiversity.
- **Waste Reduction:** The FoodCycler initiative continued successfully, significantly diverting household food waste. The Township also expanded electronic waste collection drives and continued using innovative strategies, like battery recycling and transitioning to digital materials to reduce waste.
- **Transportation:** Launching the Loyalist Link transit service notably increased connectivity and supported active transportation networks, with expanded trail infrastructure and bike repair stations. Infrastructure improvements such as EV chargers at key locations further facilitated the community's transition to low-emission vehicles.
- **Buildings:** Significant facility upgrades included installing heat pumps at heritage sites and energy-efficient lighting at recreational facilities. Notably, the W.J. Henderson Recreation Centre is under construction in order to become Net Zero ready.
- **Water and Wastewater:** Over 125 water meter replacements enhanced efficiency in water management, while significant watermain and sewer infrastructure upgrades reduced inflow, infiltration, and system losses.
- **Community Engagement and Collaboration:** Robust partnerships flourished, such as initiatives with Odessa Public School for the "Imagining My Sustainable Community" project, and new collaborations with Queen's University on research projects. The launch of the Resilient Loyalist Civic Award Program also celebrated local sustainability champions.

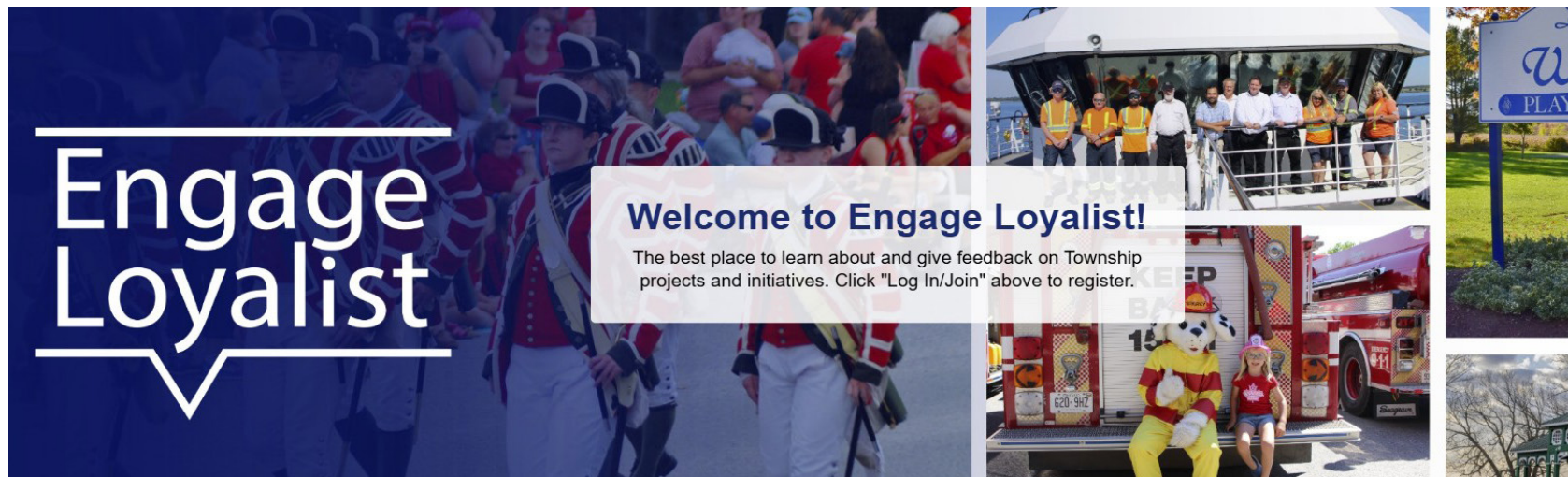
Collectively, these actions underscore Loyalist Township's ongoing leadership and commitment to building a thriving, sustainable, and resilient community.

## Introduction:

The ResiLienT Loyalist Township Climate Action Plan, adopted by Council in February 2021, continues to be a foundational roadmap guiding Township decision-making, emphasizing sustainability and climate resilience. Throughout 2024, Loyalist Township achieved significant progress toward its ambitious greenhouse gas (GHG) reduction targets of 49% corporately and 25% community-wide by 2031. This annual update aligns closely with the 2024-2027 Strategic Plan, supporting Council's priority areas, including Sustainable Land Use, Waste Reduction, Transportation, Buildings, Water and Wastewater, and community health and sustainability. The 2024 actions demonstrate the Township's commitment to fiscal responsibility, innovative practices, and environmental sustainability, with initiatives increasingly driven by vibrant community participation.

## Community Engagement & Communication:

The Township recognizes that meaningful climate action requires collaboration across sectors. In 2024, we launched an Engage platform. In addition to project-specific pages, we created a dedicated ResiLienT Loyalist Township Engage page, an overarching engagement hub that highlights all climate action-related activities across the Township. Community engagement remains vital, reinforcing our commitment to involving residents, businesses, and local organizations in actively addressing climate change. The Township's newly adopted Community Engagement Framework has provided enhanced structure and transparency in communication, resulting in increased community participation and deeper engagement in sustainability practices.



## Community Driven Action:

Loyalist Township's community grants play a critical role in enriching community life, promoting sustainable practices, and empowering residents to actively engage in climate action. These grants support diverse projects and programs that not only strengthen local networks but also advance the community's commitment to climate resiliency and environmental stewardship. Investing in grassroots initiatives facilitates broader community involvement and accelerates the Township's progress toward climate resilience.



### *Examples of community grants reflecting these values include:*

- **Loyalist Township (Tree Planting Initiative):** The \$15,000 community grant funded a pilot program that allowed 127 Loyalist Township residents to purchase native trees for \$25 each, significantly below market value. The initiative aimed to increase the Township's tree canopy, support climate action goals, and promote environmental stewardship. It was designed to engage residents in planting trees on their private property as part of the Township's goal to plant 20,000 trees over ten years
- **Bath Gardening Club & Horticultural Society:** Grants funds supported the Bath Gardening Club's delivery of the Sunday Market in Bath by funding an investment in live entertainment, children's activities, social media ads, a large new banner, curbside signs, a new website and other promotional materials.
- **Odessa Agricultural Society:** The Odessa Agricultural Society received community grant funding equal to the trade-in value of a lawnmower donated by Loyalist Township. The OAS delivers countless community events for a wide variety of community members to enjoy. Donating a lawnmower helps the OAS ensure the fairgrounds are ready for us at events throughout the spring and summer.
- **Amherst Island Agricultural Society (Renewable Energy Benefit Fund):** Funds received through the Community Grant Capital Stream were proposed to enhance the Amherst Island Agricultural Society Fairgrounds. Work includes completing the pavilion on the fairgrounds, including the interior ceiling, electrical and lighting, lane access improvements, installation of a planting strip, fencing/penning, a portable sound system, picnic tables and a barbecue. The work aims to expand capacity for hosting safe, inclusive recreational events and activities, provide versatile facilities for gathering, and enrich rural community life.
- **Lionhearts:** Funds supported two of Lionhearts' programs in Loyalist Township: the delivery of 200 weekly meals to the Amherstview Sharing Centre and the Fresh Food Market at Amherstview Community Hall. Contributions helped cover rental fees for the market location and food costs for freshly prepared meals.



## Sustainable Land Use:

The Sustainable Land Use component of the ResiLient Loyalist Township Climate Action Plan focuses on optimizing land use to promote environmental, social, and economic advantages. The strategy aims to balance development and environmental stewardship by incorporating biodiversity conservation, carbon capture, food production, and housing measures. It emphasizes energy-efficient regulations, sustainable farming methods and the importance of the local food system. The plan also prioritizes pollution reduction, the protection of natural ecosystems such as wetlands, and the development of compact, complete communities that improve both sustainability and quality of life. This plan builds the groundwork for a greener, more resilient future by stressing nature's critical role in community well-being. ***The Sustainable Land Use priority sector goals and applicable updates in 2024 include:***

Goals	Updates
<b>Plant 20, 000 Trees Over the Next 10 Years</b>	<ul style="list-style-type: none"> <li>Replaced urban boulevard trees, planting a total of 30 trees—several of which were memorial trees.</li> <li>16 trees were planted in 2024, including oak and cedar trees, as part of the community reading garden in Babcock Mill Park.</li> <li>\$15,000 Community Grant was secured Township's Neighborhood Tree Planting Program.</li> </ul>

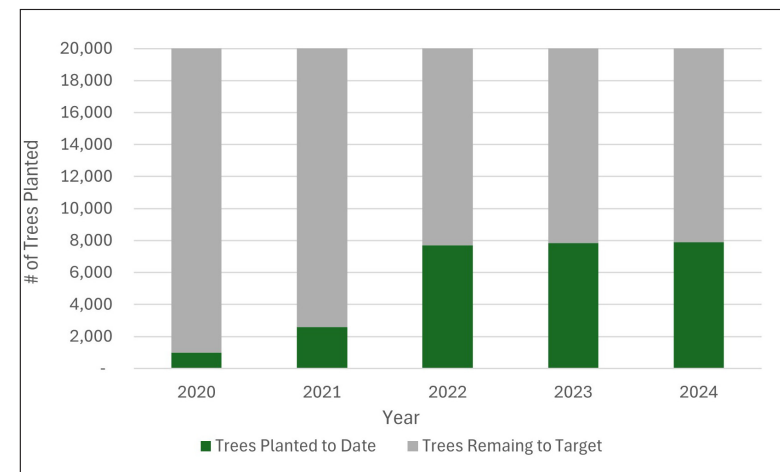


Figure 1. Community Tree Initiative Pick-Up Day



Goals	Updates
<b>Rewild Township Owned Lands</b>	<ul style="list-style-type: none"> <li>• Parks and facilities have focused on rewilding efforts. A wildflower program was implemented near the Amherstview Sewage Treatment Facility to support pollinators and reduce maintenance like grass cutting. Mowing less can increase the abundance and diversity of wildlife including bees and other pollinators.</li> <li>• Maintain ongoing collaboration with the local Conservation Authority to support their Phragmites Management Plan, with the shared goal of preventing the spread and effectively managing Invasive Phragmites across the region.</li> </ul>
<b>Incorporate LIDS into Stormwater Management Practices</b>	<ul style="list-style-type: none"> <li>• Draft engineering development guidelines were completed to support future subdivision development using LIDS.</li> <li>• Low Impact Development (LID) features were included in Amherstview West Secondary Plan guidelines and other subdivision proposals.</li> <li>• Public Works Trucks were retrofitted with new pumps in 2024 to enable drawing water from rain barrels for dust control instead of using treated water.</li> </ul>





Goals	Updates
<b>Develop a Pollinator Protection Strategy</b>	<ul style="list-style-type: none"><li>• Property Standards By-law updated in 2024 to allow for naturalization.</li><li>• Parks and Recreation Month provided educational activities such as seed bomb distribution and guided tours of the pollinator garden by the Bath Gardening Club.</li><li>• Transitioned apiary owners to a permitting process so they can do the controlled burns themselves, supporting pollinator health by reducing the spread of disease and mites.</li><li>• Reduced use of roadside herbicide sprays on Township-maintained roads in 2024.</li></ul>
<b>Promote Access to Nature</b>	<ul style="list-style-type: none"><li>• Amherstview Wastewater Treatment Plant lagoons are accessible to local bird clubs under permit, promoting wildlife engagement.</li><li>• Loyalist Township partnered with a self-serve rental system known as KAYAKOMAT to offer kayak and stand-up paddle board (SUP) rentals at Centennial Park South in Bath.</li><li>• The Babcock Mill Reading Garden was developed as a result of the Imagining My Sustainable Community (IMSC) program partnership with Odessa Public School.</li><li>• Promoted nature access during “June is Recreation and Parks Month” free events.</li><li>• Family Fishing Day in May, in collaboration with conservation authorities, promoted access to outdoor spaces, primarily on Amherst Island, and provided resources on how to ethically fish. Township provided shuttle services to events.</li><li>• Exploration Days hosted by Heritage, Culture and Tourism took place every week in the summer season, rotating between Thursdays at the Babcock Mill and Fridays at the Bath Museum and Visitors Centre, which featured various activities including a creek walk with the Wilton Creek Association.</li><li>• The trail plan in Amherstview West Secondary Plan connects to Parrott’s Bay; the Environmental Protection designation was given to the Lost Creek Meadow Marsh corridor in the Amherstview West Secondary Plan.”</li><li>• Updated parks website to provide increase information about amenities at each park.</li><li>• Project at Sand Beach to improve access.</li></ul>





Goals	Updates
<b>Support Local Agriculture</b>	<ul style="list-style-type: none"><li>• Bulk water station upgraded and well-received by local farmers.</li><li>• Recruited and trained new livestock evaluators as part of the livestock compensation Program.</li><li>• Updated the Refreshment Vehicle Bylaw to prioritize vehicles sourcing 51% or more local food.</li><li>• Continued promotion of local markets. E.g., Bath Sunday Market and Amherstview Farmers Market.</li><li>• Supported the Bath community garden by assisting with water needs.</li><li>• Worked towards a community garden policy to expand gardens in main communities. Facilitated community garden planning and training; supported existing private gardens.</li><li>• Provided a grant to the Men's Agricultural Society on Amherst Island to support agricultural initiatives.</li><li>• The new ferry supported agricultural transportation by increasing capacity for moving produce and goods between Amherst Island and the mainland.</li></ul>
<b>Promote Local Foods</b>	<ul style="list-style-type: none"><li>• Enhanced social media campaigns highlighting farmers' markets and fresh food initiatives such as Amherstview Farmers Market, Bath Sunday Market, and Lionhearts.</li><li>• Contributed to Amherst Island Agricultural Society's pavilion project for hosting farmers' markets.</li></ul>



Goals	Updates
<b>Create Resilient, Low Carbon Communities</b>	<ul style="list-style-type: none"> <li>• Amherst Island dune restoration through infrastructure adaptation.</li> <li>• Expanded bike repair stations in Bath and Amherstview, in partnership with local organizations.</li> <li>• Portable water fill station introduced at community events to reduce plastic waste.</li> <li>• Warm mix asphalt was used for paving in Odessa, reducing oil and trucking requirements.</li> <li>• Section 3.5.13 of the Urban Design Guidelines for Amherstview West speaks to encouraging EV charging stations in priority locations throughout Amherstview West, including on public streets where they may be used by residents and visitors.</li> <li>• Rec &amp; Facilities has a new app that is used to tag and track trees, hoping it helps with maintenance of trees</li> <li>• Capacity Allocation By-law was adopted. This allows for growth while the plants can operate efficiently, without un-needed expansion.</li> </ul>



## Waste Reduction

The Waste Reduction sector of the ResiLienT Loyalist Township Climate Action Plan in 2023 aims to reduce greenhouse gas emissions associated with solid waste management. It addresses the issue of methane generation from decomposing organic waste in landfills. The Township uses a “pay as you throw” system for residential waste and is examining advanced waste diversion strategies and partnerships for organic waste management. The Plan encourages small and medium enterprises to participate in waste reduction. Technologies such as composting and anaerobic digestion are being considered for converting waste into resources. In accordance with the Government of Canada’s Climate Action Plan, the Township plans to improve methane capture and treatment at landfills to reduce emissions further. This focus on waste reduction aligns with the overall goal of effective waste management to minimize greenhouse gas emissions and extend landfill lifespan.

The Waste Reduction priority sector goals and applicable updates in 2024 include:



### **Loyalist Township is developing a 30-year Solid Waste Management Master Plan to guide waste management planning, decision-making and services.**

The plan aims to address the Township’s current and future waste management challenges by improving waste diversion, recycling, and organics processing as well as establish a framework for managing curbside residential waste, multi-residential waste, parks and public spaces waste, and waste from Township facilities. Key goals include increasing waste diversion, decreasing waste generation, determining efficiencies and cost savings, and ensuring environmentally sustainable practices. The plan will address the limited remaining capacity of the Township’s two waste disposal sites, the Amherst Island and Violet Waste Disposal Sites, examine collection and processing methods, and look at broader policy issues like single-use plastics, alternative technologies, greenhouse gas emissions and circular economy programs. The project involves collaboration between Loyalist Township staff, EXP Services Inc., and other stakeholders to ensure a comprehensive approach to waste management.





Goals	Updates
<b>Divert Residential Waste Away from Landfills</b>	<ul style="list-style-type: none"><li>• The second FoodCycler program successfully diverted food waste, with high participant satisfaction.</li><li>• E-waste drives and ongoing collection at Amherstview Fire Station</li><li>• Continued use and promotion of the Recycle Coach app to support waste reduction efforts. Current users: 1900</li><li>• E-waste collection program continued with fire hall involvement, with plans for biannual drives.</li><li>• Active recycling at all Township sites</li><li>• Promoted waste reduction through operational changes, such as switching event supplies (e.g., from plastic to paper bags for craft kits and cookie packaging).</li><li>• Reduced printed marketing materials by transitioning to digital formats (e.g., online outdoor rink reports, Explore and Play guides).</li><li>• Supported waste diversion through programs like battery recycling.</li><li>• Sold 25 composters to residents and ordered an additional 100 for future use.</li></ul>

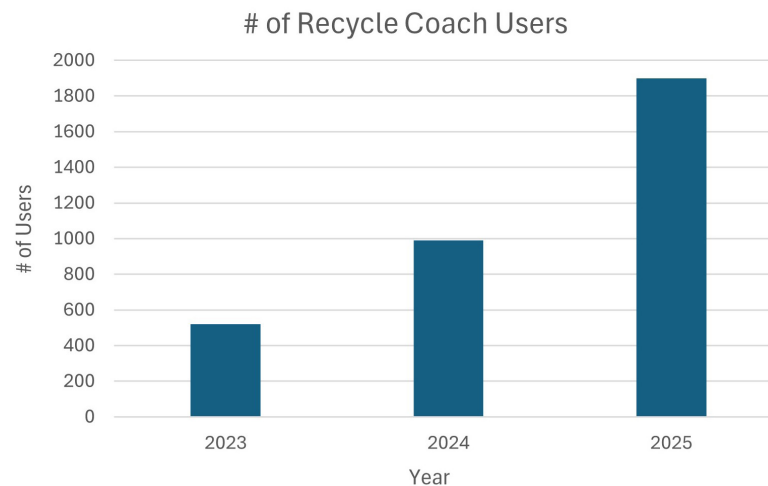


Figure 1. Recycle Coach Users



Goals	Updates
<b>Support SME Waste Reduction Efforts</b>	<ul style="list-style-type: none"><li>Publicized battery recycling programs and annual e-waste drives.</li><li>Digital signage implemented at WJ Henderson facility to cut paper waste.</li><li>Public Works is preparing to notify commercial clients about changes to waste services due to legislative updates.</li></ul>
<b>Turn Waste into a Resource</b>	<ul style="list-style-type: none"><li>Continuation of biosolid reuse practices. The following graph shows the amount biosolids waste that is hauled to farms each year.</li><li>Reuse of contaminated soil from the Odessa Main St. project as landfill cover to minimize waste and reduce greenhouse gas emissions from transportation.</li></ul>
<b>Reduce Methane Emissions</b>	<ul style="list-style-type: none"><li>No landfill gas capture efforts due to the Township's landfill size, though consultants reviewed this for future applicability.</li></ul>

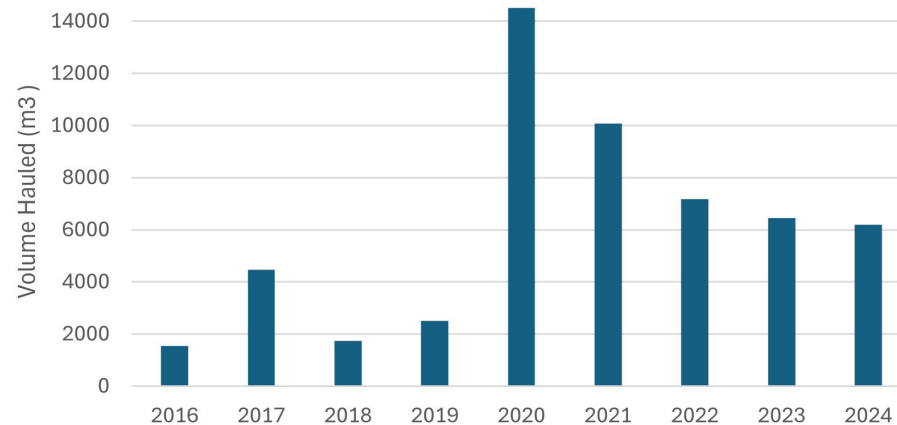


Figure 1. The Amount of Biosolids Waste Hauled to farms each year



## Transportation

The transportation sector, which is important for daily life, also contributes to air pollution and greenhouse gas emissions. Loyalist Township's strategy includes promoting low-carbon fuels, improving public transport, and implementing Mobility as a Service (MaaS) solution, alongside encouraging active transportation for better health and reduced emissions. Efforts to increase electric vehicle charging infrastructure and educate about low-emission vehicles align with federal objectives for zero-emission vehicle sales. Optimizing the municipal fleet's energy use and transitioning to low-carbon fuels, while maintaining essential services, is also a priority. These measures aim to reduce emissions in the transportation sector over the next decade, while ensuring service levels and essential services are maintained.

The Transportation priority sector goals and applicable updates in 2024 include:

Goals	Updates
<b>Optimize Use of Municipal Vehicles</b>	<ul style="list-style-type: none"><li>• Coordinated crew activities to reduce vehicle usage.</li><li>• Fleet optimization efforts included the use of Fleetio, an app to track vehicle inspections, fuel consumption, and usage.</li><li>• Public Works retrofitted a truck with new equipment for rainwater collection and reuse, optimizing vehicle operations.</li></ul>
<b>Electrify the Municipal Fleet</b>	<ul style="list-style-type: none"><li>• Council approved the budget for the GMF Fleet Electrification grant application.</li><li>• Ferry electrification shore-based work continued, expected to reduce GHG emissions significantly in 2025.</li></ul>
<b>Replace Heavy-Duty Vehicles with Zero Emissions Alternatives</b>	<ul style="list-style-type: none"><li>• Council approved an EV charger and electrification study to support future sustainability initiatives.</li></ul>





Goals	Updates
<b>Increase the Active Transportation Network</b>	<ul style="list-style-type: none"><li>• Trail connections expanded, including the Lakeside Ponds and Babcock Mills Park trails.</li><li>• Multi-use pathway developments in Odessa and Taylor-Kidd roundabout areas.</li><li>• New pedestrian crossing signals and expanded multi-use pathways in Odessa as part of the Main Street reconstruction.</li><li>• Expansion of multi-use trails, including Sir John Johnson's pathway design.</li><li>• Supported initiatives to enhance trail networks and linkages in Amherstview West and the IMP</li><li>• Installed bike repair stations in Bath and Amherstview in partnership with the Parkway Association and Lennox and Addington County.</li><li>• Included bike racks in site plans for developments in the Loyalist East Business Park.</li><li>• Draft subdivision plans prioritized connections for active transportation, including in Odessa and Bath.</li></ul>
<b>Facilitate the adoption of EVs in the Community</b>	<ul style="list-style-type: none"><li>• EV charger infrastructure installed at County Road 6 and W.J. Henderson Recreation Centre, with chargers set to be operational in 2025.</li><li>• Approval of the capital budget for the EV charger strategy.</li><li>• Expanded electric vehicle (EV) charging station installations in West Amherstview urban design guidelines.</li><li>• The Ontario grant-supported EV chargers were provided to McKinnon Brothers Brewery.</li></ul>



Goals	Updates
Enhance Transit Services	<ul style="list-style-type: none"><li>Expanded accessible transit services in collaboration with Kingston Area Taxi Commission.</li><li>Loyalist Link transit service launched with 700 riders in November and growing ridership in more recent months</li><li>The new Loyalist Link Transit route connected employment lands to other areas and major Township communities. The following figure shows how many monthly users have been serviced since this initiative started.</li><li>Collaborated with Kingston Transit for fire crew training on handling electric buses, enabling route expansion into Loyalist Township.</li><li>Contributed to route optimization efforts for Route 10 in September 2024</li><li>Continued to provide event shuttle services to reduce individual vehicle use.</li><li>Promoted transit use by highlighting route changes that improved access to W.J. Henderson Recreation Centre (Route 10), through increased reliability and on-time performance.</li><li>Shuttle service provided by the township to events, including Family Fishing Day in May.</li><li>The number of riders on route 10 has been increasing since Covid, and has gotten back to the pre-covid use.</li></ul>



Figure 1. Total Boardings Route 10

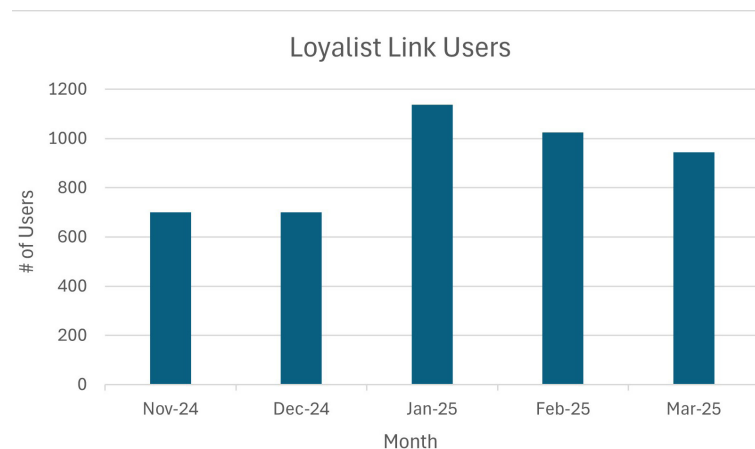


Figure 2. Loyalist Link Users

## Buildings

The Buildings sector of the ResiLienT Loyalist Township Climate Action Plan identifies the significant emissions from residential and commercial buildings. Technological advancements have improved energy efficiency in new structures, but retrofitting existing buildings is essential for substantial emission reductions. Federal initiatives and local programs offer incentives for homeowners and SMEs to reduce energy usage through retrofits and energy management, prioritizing older buildings with outdated standards. Renewable energy systems in municipal facilities are considered, but prioritizing energy reduction is important. Monthly energy data and management software help identify effective initiatives. New construction aims for energy intensity targets using efficient designs and systems. Promoting energy retrofits supports vulnerable community members, stimulates the local economy, and creates jobs. Education and support for businesses in the application process are important. This comprehensive approach seeks to significantly reduce GHG emissions in the Buildings sector.

The Buildings priority sector goals and applicable updates in 2024 include:

Goals	Updates
<b>Reduce Residential Energy Usage by Retrofitting Existing Homes</b>	<ul style="list-style-type: none"> <li>Council approved the budget for the Green Municipal Fund Community Energy Efficiency Financing Feasibility Study.</li> </ul>
<b>Increase Commercial and Institutional Energy Efficiency</b>	<ul style="list-style-type: none"> <li>Council approved the budget for the Green Municipal Fund Community Energy Efficiency Financing Feasibility Study grant application.</li> </ul>
<b>Develop Green Buildings Standards for New Construction</b>	<ul style="list-style-type: none"> <li>Subdivision design guidelines were updated to include active transportation and stormwater LID solutions.</li> <li>Amherstview West Secondary Plan includes a stormwater management study referencing Low Impact Development (LID) and urban design guidelines that address sustainable design principles such as all-season usability, public health, and landscaping— all aligning with the Ontario Building Code requirements, as amended.</li> </ul>





Goals	Updates
<b>Reduce Energy Usage in Municipal Facilities</b>	<ul style="list-style-type: none"><li>• Installed a heat pump at the Fairfield Gutzeit House, replacing an older gas furnace.</li><li>• W.J. Henderson Recreation Centre design is Net Zero Ready, featuring advanced energy-efficient systems, including LED lighting upgrades in the Skate Park.</li><li>• Planned tarp replacement on the sand/salt storage facility was planned for energy efficiency and improved lighting.</li><li>• Installed real ice technology at WJ Henderson facility, resulting in significant energy savings.</li><li>• Installed a new, energy-efficient air conditioning system in the Odessa Fire Hall, reducing energy consumption.</li><li>• Upgraded HVAC unit in Odessa's municipal office to improve energy efficiency.</li><li>• Retrofitted the old section of the County Road 6 garage with LED lighting to reduce energy consumption.</li><li>• Replaced the old oil furnace at the Bath STP with a new propane unit, significantly reducing greenhouse gas emissions by eliminating the use of oil.</li><li>• Council adopted the Energy Conservation and Demand Management (ECDM) plan.</li><li>• Preventative maintenance programs for HVAC systems were continued to improve efficiency.</li></ul>
<b>Incorporate Renewable Energy Infrastructure into Municipal Facilities</b>	<ul style="list-style-type: none"><li>• Nothing to report.</li></ul>

## Facility Energy Usage

Goals #22 and #23 of the Climate Action Plan target the reduction of energy usage and incorporation of renewable energy infrastructure in municipal facilities. Figure 1 shows energy usage, reported as fuel consumption, at all Township facilities since 2016. Water & Sewage includes all treatment facilities, distribution, and collection systems. Commercial/Institutional encompasses public buildings, offices, storage facilities, fire halls, and a variety of other Township owned buildings.

One major goal of the Climate Action Plan is to reduce Township facilities GHG emissions by 49% from 2016 levels by 2031. Figure 2 shows GHG emissions at all Township facilities since 2016.

These figures show a consistent decrease in energy usage and GHG emissions at Township facilities from 2018 to 2024. These improvements are tied to various upgrades made throughout Township facilities. The facility with the primary impact on energy consumption and GHG emissions is the W.J. Henderson Recreation Center. The closures of the W.J. Henderson Recreation Centre in 2020 and 2021 due to the COVID-19 pandemic resulted in a notable drop in consumption and emissions. The pool at the W.J. Henderson Recreation Centre was completely closed in 2022 for repairs and will remain closed throughout 2025. The facility is currently under construction, with a major focus on improving energy efficiency throughout. On average the W.J. Henderson Recreation Centre is responsible for approximately 22% of Township facility energy usage and 30% of Township facility GHG emissions. This signifies the importance of the initiative to improve energy efficiency and reduce emissions with the W.J. Henderson Recreation Centre Renewal Project.

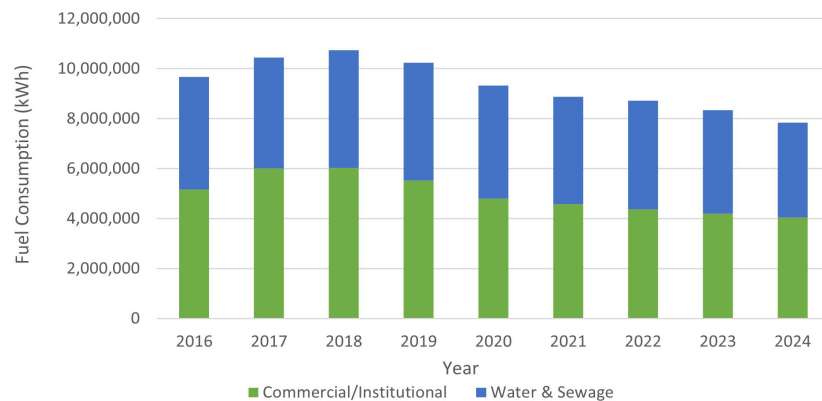


Figure 1. Facility energy usage in the Township. Note energy usage is reported as Fuel Consumption (kWh), which includes hydro and natural gas usage.

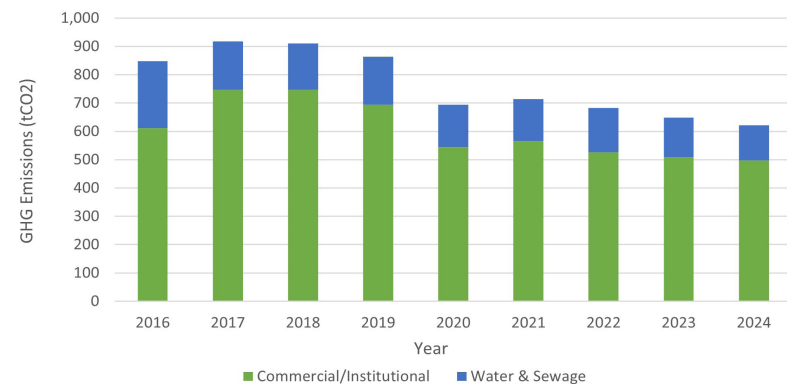


Figure 2. Facility greenhouse gas emissions in the Township.

## The Impact of the REALice System in Loyalist Township

Loyalist Township has taken a significant step toward sustainability with the implementation of the REALice system, a technology that revolutionizes the way ice is maintained in arenas. This innovative system eliminates the need for hot water when resurfacing ice, leading to substantial energy savings, cost reductions, and improved ice quality.

### How REALice Works

The REALice system is a simple yet effective mechanical device that changes the water structure before it is applied to the rink. Instead of using 140°F water to resurface the ice, the system allows the Township to use water at 70°F, significantly reducing the energy needed to heat water. The technology utilizes a vortex cylinder, which removes air bubbles and impurities, ensuring high-quality ice without the need for heating.

### Technical Benefits

- By eliminating the need for hot water, the Township reduces natural gas consumption and the energy required to operate the ice resurfacing system.
- The improved ice quality allows for higher slab temperatures, rising from 16-18°F to as high as 22°F, which means the compressors run less often, leading to additional electricity savings.
- The Township is also adjusting its arena's temperature controls to further optimize efficiency, ensuring long-term energy savings.

### Real-World Impact in Loyalist Township

Loyalist Township's experience with the REALice system highlights how a small shift in technology can yield significant results. With reduced emissions, cost savings, and improved rink operations, this initiative aligns well with the Township's Climate Action Plan, demonstrating a commitment to innovation and environmental responsibility. While energy savings are crucial, another key takeaway from implementing REALice in Loyalist Township has been its seamless transition without sacrificing ice quality. Staff initially aimed to maintain the same ice conditions but found that the quality has improved. Skaters and arena users have continued to praise the ice, with some noting that it is even better than in previous years.





## Water and Wastewater

Loyalist Township's water and sanitary sewage systems, serving approximately 14,000 residents, prioritise energy efficiency in the movement and treatment of water. These efforts encompass minimising water losses within distribution, decreasing water consumption per connection, and improving the mechanical system's efficiency. Additionally, addressing inflow and infiltration within sanitary sewage collection systems can lead to reductions in both energy usage and associated costs. Educational and incentive programs are implemented to encourage reduced residential water usage, consequently affecting energy expenses and greenhouse gas emissions. Furthermore, lifecycle-based asset replacements and opportunities for waste energy reuse, such as heat recovery from sewage, are investigated to further diminish energy consumption and emissions.

The Water and Wastewater priority sector goals and applicable updates in 2024 include:

Goals	Updates
<b>Reduce Water Losses in the Distribution System</b>	<ul style="list-style-type: none"> <li>• 125+ water meter replacements to reduce apparent water loss and enhance system accuracy.</li> <li>• Collaboration on successful watermain replacements (e.g., Bridge St, Odessa), resulting in a reduction of water losses by over 50%.</li> <li>• Encouraged water conservation by using collected rainwater for dust control rather than treated municipal water.</li> <li>• Non-revenue water has reduced in both systems (at 31% for FWDS and 7% for BWDS)</li> </ul>
<b>Reduce Inflow and Infiltration in the Collection System</b>	<ul style="list-style-type: none"> <li>• Repaired lines and grouted manholes in Odessa.</li> <li>• Repairs conducted on the collection system</li> <li>• Sewer replacement on Main St Odessa</li> <li>• Peaking factor increased slightly in 2024, although relatively consistent with previous years. Full benefits of Odessa projects will be realized more in 2025.</li> </ul>
<b>Reduce per Capita Water Usage</b>	<ul style="list-style-type: none"> <li>• Transition to variable consumption fee structures resulted in decreased water use.</li> <li>• Installed timer-based water systems for showers at W.J. Henderson Recreation Centre.</li> </ul>
<b>Increase the Efficiency of Mechanical Systems</b>	<ul style="list-style-type: none"> <li>• Bath Sewage Pumping Station #1: Replacement of soft starts on pumps.</li> </ul>



Goals	Updates
<b>Increase the Efficiency of Mechanical Systems</b>	<ul style="list-style-type: none"><li>• Pump rebuilding program aimed at improving energy efficiency in water systems. While quantifiable savings are case-specific, utilities are considering future data analysis for efficiency reporting.</li><li>• Transitioned some generators from oil to natural gas, improving efficiency and reducing emissions.</li><li>• Variable frequency drives (VFDs) were installed on blowers at the Bath sewage treatment plant, improving energy efficiency.</li></ul>
<b>Capture and Reuse Waste Energy</b>	<ul style="list-style-type: none"><li>• Nothing to report.</li></ul>

## Water Distribution System Losses

Goal #24 of the Climate Action Plan focuses on the reduction of water losses from the water distribution systems in the Township. Figure 3 shows non-revenue water in both the Bath and Fairfield distribution systems. Non-revenue water refers to the following: unbilled authorized usage, real water losses (watermain breaks or leaks), and apparent losses (unauthorized consumption or unknown usage).

There was a notable decrease in non-revenue water in the Fairfield system between 2023 and 2024. This is likely due to road reconstruction projects that have been undertaken, and watermain breaks and leaks that have been repaired.

In both systems, apparent losses contribute the most to non-revenue water. To decrease the amount of apparent loss seen in the distribution systems, a meter replacement program has been initiated. Improved metering should identify unauthorized or unknown usage, resulting in less apparent loss in the system. Staff also continue to monitor improvements after road reconstruction projects. A key example of how road reconstruction helps to reduce water loss is the Odessa west project. After completion of this project staff noted that the water being pumped to Odessa was reduced significantly, indicating that reconstruction of this area has repaired some unidentified leaks.

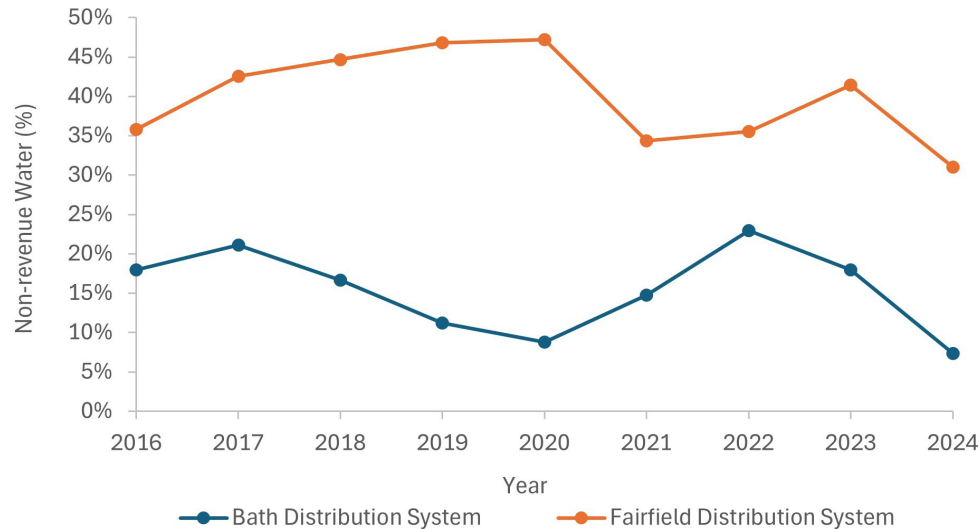


Figure 1. Non-revenue water in Township distribution systems.



## Inflow and Infiltration

Goal #25 of the Climate Action Plan highlights the reduction of inflow and infiltration (I&I) in the Township sanitary sewage collection system. I&I refers to water other than sewage that infiltrates the collection system, such as groundwater or stormwater. This can damage collection infrastructure and impact the sanitary sewage treatment process. Peaking factors can be used to approximate the amount of I&I occurring in an area. A peaking factor is the ratio between maximum daily flow and average daily flow. If the peaking factor correlates with heavy precipitation or thawing events, it indicates significant I&I.

Figure 3 shows the peaking factors for both systems based on a three-year average. Overall, the peaking factors have decreased since 2018, with the 2024 values increasing slightly from recent years. The peaking factor is dependent on precipitation rates, which may have also contributed to the increase seen in this graph. In general, the peaking factors are quite high, indicating that more work needs to be done to decrease I&I even further.

Figure 3 should only be used as an approximation for I&I in the Township. Further investigation will be needed to identify specific areas that are prone to I&I. The Township's is aiming to update the sanitary sewer model with flow monitoring data, which should help to pinpoint areas with high I&I. Once located, efforts can be made to reduce the amount of I&I.

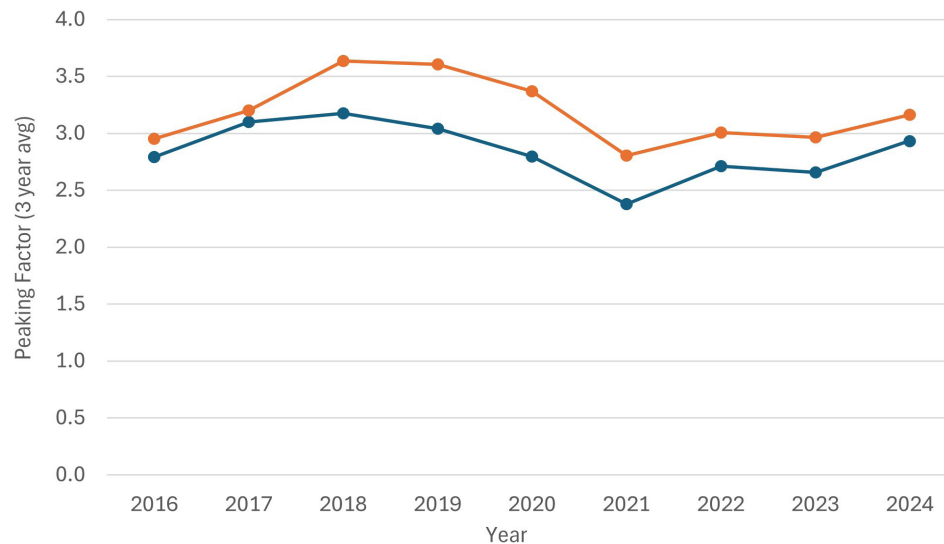


Figure 1. Annual peaking factors in both sanitary systems.



## Other

The ResiLient Loyalist Township Climate Action Plan encompasses initiatives for GHG reduction and sustainability enhancement. It emphasizes sustainable municipal operations, promoting eco-friendly goods and services, and reducing construction-related emissions. Community engagement is crucial, achieved through education, partnerships, and volunteering, fostering a culture of sustainability and civic involvement. The plan, with its focus on sustainable procurement and community engagement, aims for long-term positive impacts on residents and local organizations, demonstrating the value of collaborative and informed approaches to climate action.

The Other priority sector goals and applicable updates in 2024 include:

Goals	Updates
<b>Incorporate Sustainability into Corporate Procurement</b>	<ul style="list-style-type: none"><li>• Efforts to prioritize lifecycle reviews and source materials locally where feasible, such as using asphalt from nearby suppliers, were highlighted.</li><li>• Reduced print volumes of municipal calendars and guides, decreasing environmental impacts from production and distribution.</li></ul>
<b>Coordinate the Purchase of Goods and Services with Local Organizations</b>	<ul style="list-style-type: none"><li>• Donated a retired lawnmower to the Agricultural Society for continued use.</li><li>• Part of the Local Area Services program</li></ul>
<b>Incorporate Sustainable Practices in Construction Activities</b>	<ul style="list-style-type: none"><li>• Targetted use of hydroseed instead of sod in construction projects.</li><li>• Single-lift asphalt was implemented to minimize environmental impacts.</li><li>• Efforts were made to reuse soil in construction projects to reduce waste classification.</li><li>• Updates and installation of stormwater infrastructure along Odessa's Main Street will improve resiliency against storms moving forward.</li></ul>



Goals	Updates
<b>Partner with Local Industries and Academic Institutions</b>	<ul style="list-style-type: none"> <li>• Collaborated with Queen’s University for a study on the potential impact of organisms such as mussels and daphnea on the Bath water treatment plant systems.</li> <li>• Continued the “Imagining My Sustainable Community” initiative in partnership with Odessa Public School.</li> <li>• Provided community grant funding for initiatives supporting sustainability.</li> <li>• Collaborated with OPG to sponsor a free eight-week STEM program for youth.</li> <li>• Formalized reciprocal agreements with Limestone and Algonquin Lakeshore Catholic District School Boards for facility use to maximize resources for recreation activities.</li> <li>• Organized a Developer’s Forum in June to engage with local development professionals and share updates on sustainable design practices.</li> <li>• Regular hiring of co-op students to support municipal operations.</li> <li>• Collaboration with MTO for ferry electrification and other sustainability projects.</li> </ul>
<b>Strengthen Community Relationships</b>	<ul style="list-style-type: none"> <li>• Launched the Resilient Loyalist Civic Award program to celebrate local contributions to sustainability.</li> <li>• Partnered with local organizations for horticultural initiatives (Odessa Lions Club, Bath Gardening Club).</li> <li>• Supported the “Imagining My Sustainable Community” project, fostering collaboration and civic engagement.</li> <li>• Established and supported the Food Security Working Group in 2024.</li> <li>• Facilitated community events like local government education programs.</li> <li>• Encouraged community engagement through events like Family Fishing Day and Exploration Days.</li> <li>• Partnered with the Odessa Lions Club for horticulture barrels and the Bath Gardening Club for community beautification efforts.</li> <li>• Enhanced community engagement through partnerships with organizations like the Bath Gardening Club, Odessa Lions Club, and Amherstview Lions Food Bank.</li> <li>• Expanded use of Code Red for ferry service notifications and emergencies, with potential future applications for construction and utility projects.</li> <li>• Hosted the Odessa food pantry in the Odessa Municipal Office’s front foyer during the winter months for community members.</li> </ul>

## Conclusion

The Resilient Loyalist Township Climate Plan Update reflects our ongoing dedication to addressing climate change and building a more sustainable future for our community. Through initiatives focused on energy conservation, waste reduction, sustainable transportation, and community engagement, we are actively working to reduce climate impacts and enhance long-term resilience. This update highlights the progress we've made so far and reaffirms our commitment to creating a resilient, low-carbon, and thriving Township. As climate challenges grow more complex, the actions outlined here demonstrate our determination to lower greenhouse gas (GHG) emissions, increase energy efficiency, and safeguard the well-being of both our residents and the environment.

