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# INDIGENOUS LAND ACKNOWLEDGEMENT

Trent University in Peterborough and Durham is on the treaty and traditional territory of the Mississauga Anishinaabeg.

We offer our gratitude to the First Peoples for their care for and teachings about our earth and our relations. May we honour those teachings.



# **FOREWORD**

We are pleased to present this Sustainability and Energy Plan to the Trent community. In alignment with the Board's vision set forth in Board Directions 2024-29, specifically the vision to create vibrant, engaged, and sustainable communities of learning, teaching, and research, this Plan represents an approach to sustainability that engages the full campus community and all departments.

This plan is reflective of Trent's mission to foster sustainability in its environmental, social, and economic dimensions in all aspects of the university's work. Filled with unique and engaging activities, goals, and targets, the content of this plan sets forth to support the university in its commitment to its environmental responsibilities.



# INTRODUCTION

Environmental stewardship has been an integral part of Trent since the University's beginnings in 1964. Our commitment to environmental sustainability is reflected in all aspects of the institution, from the original design of our buildings and spaces to the focus of our academic and extracurricular programming.

Trent University's Sustainability and Energy Plan builds on past sustainability and energy management strategies, providing a framework that encompasses environmental, social, and governance (ESG) factors.

# THE PLAN IS STRUCTURED AROUND THREE INTERCONNECTED GUIDING PRINCIPLES:



**1. Reducing Environmental Impact:** Striving to minimize the environmental footprint of the University, including carbon emissions, energy usage, waste, and water use.



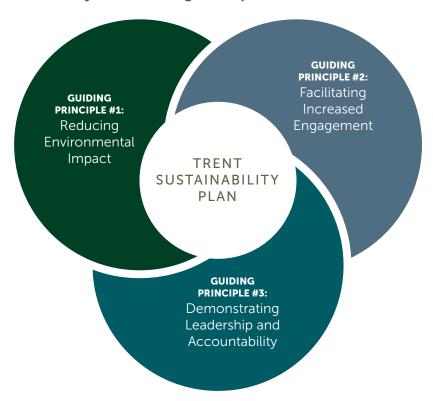
**2. Facilitating Increased Engagement:** Focusing on meaningful involvement of students, staff, faculty, alumni, and the wider community in sustainability and energy management activities.



**3. Demonstrating Leadership and Accountability:** Advancing positive environmental and socio-economic outcomes through effective governance and operational leadership.



Figure 1: Trent Sustainability Plan Guiding Principles



# ACTIONS IN FIVE CATEGORIES WILL ADVANCE OUR SUSTAINABILITY AND ENERGY EFFORTS:



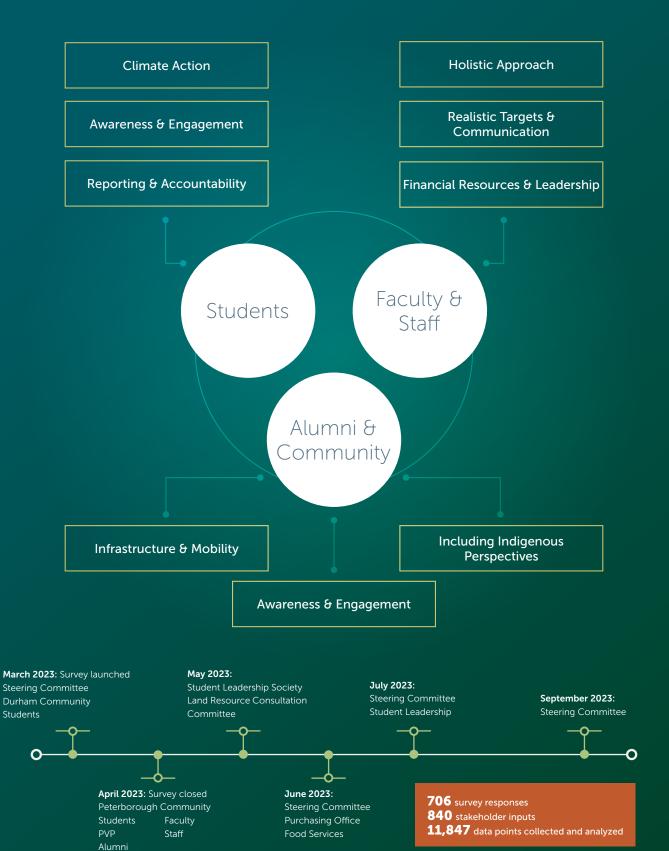
# At Trent, sustainability and community go hand in hand.

The knowledge, commitment, and actions of our community fuel Trent's environmental stewardship. This strategy draws on their insights and was developed in consultation with staff, faculty, administration, alumni, and the wider community. Their ongoing participation will be central to the successful implementation of the plan.

<sup>&</sup>lt;sup>1</sup>Based on the internationally recognized standard, becoming zero waste is achieved by attaining a diversion rate of 90 percent. Source: "Zero Waste Business Principles," Zero Waste International Alliance, 2023, https://zwia.org/zero-waste-business-principles/



# COMMUNITY PARTICIPATION IN THE PLANNING PROCESS





# A LONG-TERM COMMITMENT TO SUSTAINABILITY & ENERGY

1968: Visionary architect Ron Thom designs the core campus of Trent as a car-free walking campus. In anticipation of meeting future energy needs, solar generation is included in the campus concept.

**1974:** The first Environmental and Resource Studies program is introduced. Environment-focused programming follows, including Ecological Restoration, Sustainable Agriculture and Food Systems, Environmental Chemistry, and more.

1989: Trent Valley Educators convene Environmental Educators
Conferences at Trent, which lead to major environmental changes in
Trent's operation, including the creation of the recycling program and
the President's Environmental Advisory Committee.

**1995:** Trent establishes its first Environmental Procurement Policy, committing to guiding the procurement of supplies, equipment, and services by means supportive of waste management principles and the conservation of energy and water, to minimize harmful environmental effects.

**2007:** Trent establishes the Sustainability Office.

**2008:** Trent University significantly expands on-campus composting program to include all campus resource recovery stations.

**2010:** Trent students successfully advocate to ban single-use bottled water from campus.

**2017:** Trent receives the Sustainable Peterborough Climate Change award for its energy retrofit project.

**2021:** Trent opens the doors of a new zero-carbon building, the Forensics Training Facility, which stores a net 13 tonnes of carbon and generates more solar energy than is required to operate it.

**2021:** The Trent University Lands and Nature Areas Plan is approved by the Board of Governors, representing a massive undertaking and unique endeavour in the university sector.

**2021:** Trent's Board established ESG as investment criteria for all of the University's endowments.

2021: Trent is ranked first in Canada for sustainability research and education. For the third year in a row, Trent earned a spot in the top 15 percent of sustainable universities worldwide in the Green Metric University Rankings.

**2018:** Trent publishes its first Sustainability Plan, Celebrating Success, Setting Direction.¹ At the time, the University reports having over 300 courses focused on or related to sustainability, as well as considerable funding being dedicated to research in climate, environment, and sustainability challenges.

**2020:** Trent becomes the only Canadian University with two 3 Star Certified Green Restaurants, located at Lady Eaton and Gzowski Colleges.

**2022:** The Battery Energy Storage System, Trent (BESS) comes online. The BESS offers Trent significant cost reductions, an active role in provincial GHG reduction, and positions the campus for opportunities in the future as balancing and decarbonizing the province advances.

**2023:** The Sustainability and Energy Plan is developed. Building on the strong foundation and tradition of environmental stewardship, the plan is designed to guide the institution to achieving its revitalized energy management and sustainability goals.

# **OUR VISION**

To integrate environmental commitment, social responsibility, and effective governance across all aspects of university life. We are dedicated to integrating Indigenous knowledge, fostering experiential learning, and creating a culture of sustainability. Together, we aspire to transform our campuses into living laboratories that nurture sustainable practices, inspire innovation, and empower future generations.



# STRATEGIC FRAMEWORK

Trent University aims for its commitment as a green campus to be reflected in all aspects of teaching, research, and operations, including in the programs offered, the knowledge produced, and the policies that guide its activities.

As Trent University looks to the future, sustainability and energy management are a priority for the institution. To support this focus, core objectives and example activities have been identified and integrated into a strategic framework and approach, to

be implemented over the next five years through the guiding principles. The strategy is intended to be a guiding framework and a living document that can be updated as University's needs and goals evolve.

Figure 2: Trent Sustainability Strategic Framework

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Our vision is to integrate environmental commitment, social responsibility, and effective governance across all aspects of university life. We are dedicated to integrating Indigenous knowledge, fostering experiential learning, and creating a culture of sustainability. Together, we aspire to transform our campuses into living laboratories that nurture sustainable practices, inspire innovation, and empower future generations.

### **GUIDING PRINCIPLES**



Reducing environmental impact



Facilitating increased engagement



Demonstrating leadership and accountability

### **OUTCOMES**

- Zero-waste
   Departmental
- a zero-
- adoption of
- integration
- Be a sustainability leader among Canadian Postsecondary Education





### **EXAMPLE ACTIVITIES**

- Conduct a planning and evaluation exercise to refine long-term carbon reduction strategy prior to the O.Reg. 25 / 23 2024 reporting cycle.
- Advance accounting practices for supply chain emissions.
- Develop sustainable materials and construction criteria for new and existing infrastructure (e.g., energy-efficient window replacements, rooftop solar panels, rooftop gardens).
- Support campus planning with the Transportation Demand Management Study, aiming to increase

- low-carbon and active modes of transportation to Trent, and to develop related metrics.
- Continue to advance alignment with Ontario's transition to a circular economy by connecting key campus stakeholders, engaging staff and students, and supporting the extensive efforts of Trent Food Services.
- Work to advance Trent's diversion measurement and performance, striving for a zero waste campus by 2028.

### TARGETS / GOALS

- Reduce GHG carbon emissions in operations to assist the province in reaching their target of 37 percent reduction by 2030, and with a target of Net Zero by 2050.
- Complete an initial Scope 3 GHG inventory.
- Become a zero waste campus by 2028.
- Support the development of implementation plans for the Trent Lands and Nature Area in relation to campus infrastructure and student engagement.
- Maintain a low water use model on campus through existing building retrofits and new developments.





### **EXAMPLE ACTIVITIES**

- Support sustainability literacy on campus by creating and supporting efforts to engage key university stakeholders in developing their own sustainability acumen.
- Re-establish a "greening the campus" engagement event where staff, students, and faculty collaborate to propose and implement sustainability projects on campus. Establish a budget for this project.
- Launch an engagement program for student leaders to develop and practice skills for greening their groups and events, supporting the

- development of these skills to be applied in their future work.
- In collaboration with Trent's purchasing department, update Trent's policy on Environmentally Sustainable Procurement to reflect emerging opportunities for ESG-related criteria in procurement activities.
- Continue to work collaboratively with relevant bodies in Ontario advancing sustainable procurement.

### TARGETS / GOALS

- Leverage communication tools to increase awareness and participation amongst key university stakeholders in sustainability and energy management activities / initiatives.
- Use example activities to grow University stakeholders' capacity for taking positive action in advancing unit-specific sustainability initiatives
- and in providing meaningful support to campus-wide initiatives.
- Convene a forum for groups on campus advancing social aspects of ESG, to facilitate conversations assessing Trent's current efforts, proposing additional opportunities, and exploring relevant metrics.





### **EXAMPLE ACTIVITIES**

- Report annually to the Finance and Property
  Committee of the Board of Governors through the
  Vice-President of Finance and Administration to
  ensure Trent's sustainability and energy activities
  continue to progress.
- Publish an annual sustainability and energy report highlighting measured campus performance.
- Report on the on-going performance of Trent's Battery Energy Storage System (BESS) to manage energy use on campus and to quantify Trent's contribution to GHG reductions in Ontario.
- Assess collaborators and committees / working groups required for implementation success.
- TARGETS / GOALS
- Establish a sustainability and energy decisionmaking framework and advisory structure with relevant resources to implement this plan.
- Receive recognition as a sustainability leader among Canadian universities.

- Triage deferred maintenance projects for energy savings and / or other environmental objectives to identify project funding pathways.
- Collaborate with other Ontario Postsecondary Education Institutions to explore an efficient industry-specific reporting standards model.
- Investigate other opportunities for multilateral collaboration with Ontario Postsecondary Education Institutions on sustainability and energy management issues and initiatives.
- Measure awareness, engagement, and perception of students / staff / faculty in annual survey.
- Review Sustainability Office resources and make recommendations through budget committees.
- Demonstrate leadership by seeking opportunities to amplify impact and leverage best practices with local and provincial audiences / collaborators.



# **LOOKING AHEAD**

Trent's history of sustainability and energy management provides a strong foundation on which the guiding principles and example activities of this plan rest.

Here, we provide ambitions that extend

beyond the scope of this plan, offering recommendations that could take Trent's sustainability and energy commitment even further, should the resources and support necessary to do so be available.

Figure 3: Additional recommendations<sup>2</sup>

### **Recommendations**

- 1. Continue to refine Trent's 2018 path to Net Zero strategy, identifying new tactics, actions and activities to help achieve the institution's Net Zero pathway within federally and provincially identified time periods. Explore "stretch goals" for more aggressive Net Zero carbon reduction targets (e.g., Net Zero 2040) in line with other Canadian PSE leaders such as McGill University, University of British Columbia, etc.
- 2. Review Sustainability Office resourcing alignment with advancing adoption of campus-wide integration of sustainable practices and provide recommendations to budget committee.
- 3. Establish ESG reporting metrics related to this plan to support the Board of Governors' ESG framework objectives.
- 4. Consider the value and assess the feasibility of participating in standardized measurement programs.
- 5. Maintain the project steering committee to provide guidance and oversee the implementation of this plan.
- 6. Establish regular touchpoints with key stakeholders on plan objectives and implementation.
- 7. Actively participate in key Canadian and international forums that engage university sustainability officers, students, staff, faculty, industry, and thought leaders to co-create solutions to shared challenges.
- 8. Identify funding pathways for green infrastructure and deferred maintenance. Consideration may be given to a potential capital campaigns to raise funds in trust to support broad-based sustainability-driven projects and initiatives for and by the institution.

Source: Stiletto Analysis



# **MOVING TOWARDS IMPACT**

Figure 4: Logic model for sustainability and energy plan<sup>3</sup>

Guiding Principles	Redu	cing Environmental Impact		Facilitating Incre	ased Engagement	De	monstrating Leadership a	nd Accountability
Action Categories	Carbon	Zero Waste		Social Resp	ponsibility	Susta	ninability Literacy	Campus Integration
Example Outputs	<ul><li>Carbon targets</li><li>Scope 3 metrics</li></ul>	Waste reduction     Waste diversion rate		Compliance w     O. Reg. 25 / 2:     # of events / f     on energy and	3 orums focused	stakeho sustaina • Awaren	ment of key university olders in developing ability acumen ess of sustainability ergy initiatives	<ul> <li>% of units adopting sustainable practices</li> <li>Be a key collaborator for the 2021 Lands and Nature Area Plan</li> <li>% of students participation in initiatives</li> </ul>
Outcomes (Short-term)	Advancing a zero-carbon model	Departmental doption of sustainability planning		wer individual action	Institutional in	tegration	Zero-waste campus	Increased financial value of sustainability resources
Impacts (Medium-term)	Be a sustainability and energy leader among  Canadian Postsecondary Education Institutions  Canadian Postsecondary Education Institutions  Canadian Postsecondary Education Institutions							
Impacts (Long-term)								

Source: Stiletto Analysis



# UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

The United Nations Sustainable
Development Goals (SDGs) are commonly
accepted as a standard for sustainability
metrics. Assessing the degree to which
Trent's goals are in keeping with the
UNSDG's can be a helpful guiding tool.

Figure 5 demonstrates several ways in which Trent's 2023 Sustainability and Energy Plan's ambitions and outcomes relate to the UNSDG's at the time of publication.

Figure 5: UNSDG's and Trent's related outcomes<sup>4,5</sup>

UNSDG	UNSDG DETAILS	TRENT'S PLAN COMPONENTS		
4. Quality Education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	<ul> <li>Guiding Principle 2 Example Activity: Support sustainability literacy on campus by creating and supporting efforts to engage key university stakeholders in developing their own sustainability acumen</li> <li>Guiding Principle 2 Example Activity: Launch an engagement program for student leaders to develop and practice skills for greening their groups and events, supporting the development of these skills to be applied in their future work</li> </ul>		
7. Affordable and Clean Energy	Ensure access to affordable, reliable, and sustainable modern energy for all	Guiding Principle 3 Example Activity: Report on the on-going performance of Trent's Battery Energy Storage System (BESS) to manage energy use on campus and to quantify Trent's contribution to GHG reductions in Ontario		
9. Industry, Innovation, and Infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Guiding Principle 1 Example Activity: Develop sustainable materials and construction criteria for new and existing infrastructure		



Figure 5: UNSDG's and Trent's related outcomes (cont'd)

UNSDG	UNSDG DETAILS	TRENT'S PLAN COMPONENTS		
11. Sustainable Cities and Communities	Make cities and human settlements inclusive, safe, resilient, and sustainable	<ul> <li>Guiding Principle 1 Example Activity: Develop sustainable materials and construction criteria for new and existing infrastructure</li> <li>Guiding Principle 1 Targets / Goal: Become a zero waste campus by 2028</li> <li>Guiding Principle 1 Targets / Goal: Reduce GHG carbon emissions in operations reflecting the provincial target of 37 percent by 2018 with a target of Net Zero by 2050</li> </ul>		
12. Responsible Consumption and Production	Ensure sustainable production and consumption patterns	<ul> <li>Guiding Principle 1 Targets / Goal: Become a zero waste campus by 2028</li> <li>Guiding Principle 1 Targets / Goal: Reduce GHG carbon emissions in operations</li> <li>Guiding Principle 2 Example Activity: In collaboration with Trent's purchasing department, update Trent's policy on Environmentally Sustainable Procurement to reflect emerging opportunities for ESG-related criteria in procurement activities</li> </ul>		
13. Climate Action	Take urgent action to combat climate change and its impacts	<ul> <li>Guiding Principle 1 Targets / Goal: Become a zero waste campus by 2028</li> <li>Guiding Principle 1 Targets / Goal: Reduce GHG carbon emissions in operations, to reflect the provincial target of 37 percent reduction by 2030, with a target of Net Zero by 2050</li> </ul>		
15. Life on Land	Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Guiding Principle 1 Target / Goal: Support the development of implementation plans for the Trent Lands and Nature Area Plan in relation to campus infrastructure and student engagement		

Sources: United Nations, Stiletto Analysis



## **APPENDIX I: PROGRESS TRACKER**

Trent University's 2018 Sustainability Plan proposed a path to a low-carbon campus. The plan provided a list of strategies to support the university in becoming an ultralow impact campus, were funding to have become available. Figure 6 provides a status update on the successfully completed projects.

During the completion of these projects, the COVID-19 pandemic significantly impacted campus operations. Numerous operational changes during COVID-19 resulted in increased energy use on campus, and as such it is not possible to confidently determine the resulting decreased use resulting from these projects. As we move forward, Trent University looks forward to working toward optimizing these reductions in this next phase.

Figure 6: Projects Completed by Trent University<sup>6</sup>

Project	Estimated GHG (t) Reductions Annually	Estimated Project Investment
DNA/ CSB Demand Based Ventilation	515	\$1.22M
Enwayaang Occupancy-based ventilation	7	\$0.16M
Otonabee Residence / Athletics domestic hot water	28	\$0.71M
Building Envelope Improvements, various buildings	116	\$0.3M
Blackburn Boiler Replacement	13	\$0.38M
Variable Speed Pumping (ESS, CSB, ESC & SC)	10	\$0.43M
Roadway lightning to LED	4.5	\$0.4M
Replace Chillers- ESS	7.5	\$1.5M
Athletics Pool Mechanical	8	\$0.075M
Battery Energy Storage System, Switchgear, Solar(10kW) and EV charging station	1	\$9.2M
Forensics Solar (33kW)	3	\$0.1M
Totals	712	\$14.5M

Source: Trent University Data



In advance of the 2024 reporting period per O.Reg. 25 / 23, Trent is working toward a refined carbon path. Thus, changes in contemplated projects and improved estimates for costs and GHG reductions are anticipated. Figure 7 shows both short and long-term projects that could be undertaken to maximize potential impact and results for the Trent Sustainability Plan over the next five to ten years. The intent of this list is to build on recent campus efforts and to demonstrate that a low carbon campus can be achieved

over time, with adequate planning and funding. This list provides thoughtful potential projects, positioning Trent to take advantage of funding opportunities as they arrive.

As an insitution, Trent understands the importance of remaining adaptable to future technology and strategies. The university continues to research new opportunities to reduce carbon use on campus, and will continue to seek funding to advance low-carbon operations.

Figure 7: Sustainability projects under consideration at Trent University<sup>7</sup>

Project	ct Estimated GHG (teCO <sub>2</sub> ) Reductions annually		~15 year GHG (teCO <sub>2</sub> ) Impact
Short-term projects identified to drive impact			
MacKenzie Retrofit	30	\$0.05M	450
Science Air Handling Retrofit	165	\$1.6M	2,475
Sciences DHW	33	\$0.3M	500
Sciences BAS Upgrade	180	\$1.0M	4,680
Demand-based Ventilation	205	\$1.0M	3,075
Recommissioning and Staff Development	500	\$0.5M	7,500
Duct Sealing	260	\$1.4M	3,500
Water Sourced Heat Exchange	130	\$0.2M	1,950
Long-term projects identified to maximize impact			
Science Fume Hood and Heat Recovery	300	\$1.2M	4,500
Athletics GSHP	125	\$2.4M	1,875
Enwayaang GSHP	292	\$4.6M	4,380
Life and Health Sciences GSHP	1,130	\$4.7M	17,000
Sciences (SC, ESC, CS, GSHP)	1,300	\$5.0M	19,500

Source: Trent University Data

Under O. Reg 25 / 23, Trent University is required to provide a summary use of energy and GHG emissions for stationary scope 1 and 2 sources on campus, as shown

in Figures 8 and 9. For regular updates and more comprehensive data visit the Sustainability Office website at trentu.ca/sustainabilityoffice/.



Figure 8: Energy use by campus, Trent University, 2023

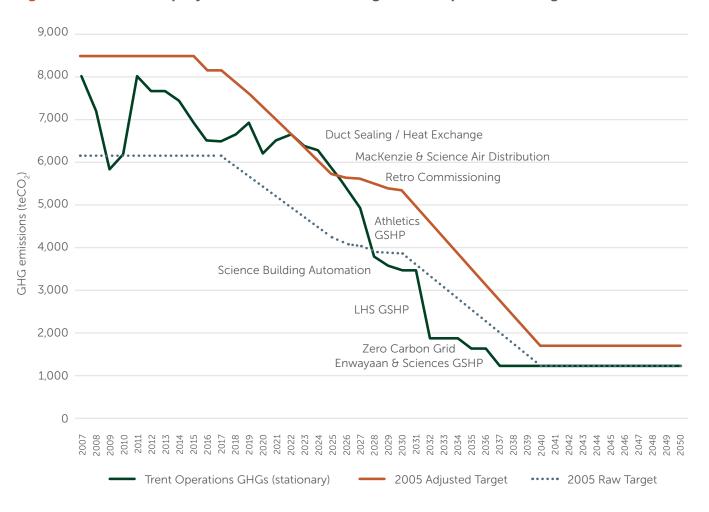
Year	Electricity (KWh)	Natural Gas (m3)	Fuel Oil (L)	GHG Emissions (teCO <sub>2</sub> )
Peterborough Campus				
2019	21,039,550	3,189,726	7,339	6,727
2020	19,377,462	2,869,373	6,926	6,045
2021	19,710,224	2,967,719	7,382	6,303
2022	20,375,440	3,027,518	5,860	6,433
Durham Campus				
2019	450,600	89,676	N/A	185
2020	380,125	77,960	N/A	160
2021	651,752	89,260	N/A	189
2022	782,064	108,148	N/A	229

Figure 9: GHG emissions by campus, Trent University, 2023

Year	Peterborough Campus Emissions (teCO <sub>2</sub> )	Durham Campus Emissions (teCO <sub>2</sub> )	Total Trent University Emissions (teCO <sub>2</sub> )
2019	6,727	185	6,912
2020	6,045	160	6,205
2021	6,303	189	6,492
2022	6,433	229	6,662







<sup>\*</sup>To illustrate GHG reduction over time, Figure 10 compares the GHG impacts of potential future projects to 2005 emissions levels, including Scope 1 and Scope 2 stationary emissions. In 2005, Trent owned and operated a hydro-electric generating facility. To account for the impact this would have on targets, Figure 10 shows the "raw target" which includes the benefit of the on-site generation, as well as an adjusted target, which represents what the 2005 emissions would have been had Trent purchased the electricty generated by the hydro-electric facility from the Ontario grid.



# **ENDNOTES**

- <sup>1</sup> "Celebrating Success, Setting Direction," Trent University, 2018, https://www.trentu.ca/sustainabilityoffice/sites/trentu.ca.sustainabilityoffice/files/documents/Sustainability%20Plan.pdf
- <sup>2</sup> Stiletto Analysis, 2023
- Stiletto Analysis, 2023
- <sup>4</sup> "The 17 Goals," United Nations, https://sdgs.un.org/goals
- <sup>5</sup> Stiletto Analysis, 2023
- <sup>6</sup> Trent University Data, 2023
- <sup>7</sup> Trent University Data, 2023





### **ABOUT STILETTO**

Stiletto Consulting Ltd. is a market research and strategic planning firm focused on innovation and impact for the organizations we serve. This work requires a collaborative approach, one that puts people first and uses meaningful data to guide recommendations. Working at the intersection of academia, government, and industry, we bring communities together to envision concepts, generate evidence-based insights, and move bold ideas forward. Our work shifts the focus from inputs to meaningful impacts and results that will affect lasting change in communities. Clients across North America have included postsecondary institutions, municipalities, economic development organizations, science and technology companies, research and technology parks, and accelerators.