

**The Sustainable Campus: A Comparison of Comprehensive Sustainability Policies in the  
Campus Master Plans of the University of Guelph and Queen's University**

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## EXECUTIVE SUMMARY

### Introduction

Higher education institutions are increasingly welcoming the challenge to reassess their operations against today's sustainability standards and to steadily implement sustainable planning practices on their campuses. Campus Master Plans (CMPs) with sustainability policies have manifested and their overall goal has been to build sustainable, healthy, vibrant, and balanced communities within their campuses. The promotion and implementation of sustainability planning practices as well as policies have propelled higher education institutions into the public realm as one of the many leaders in sustainable planning.

Despite these efforts, there has been little guidance on incorporating sustainability into campus planning policies. There has also been varying approaches to developing and implementing sustainable campus planning policies. This knowledge gap and lack of sustainability coordination has initiated strong interest in investigating how higher education institutions have approached sustainable campus planning.

This Master's report aims to assess the campus sustainability planning policies of the CMPs of the University of Guelph and Queen's University. This report will address the following research questions:

1. Which of the two CMPs offer a more comprehensive and well-defined collection of campus sustainability policies (i.e. ranging from sustainability research and community partnerships to transportation and energy consumption)?
2. What lessons can the CMP identified in the first research question provide other Canadian higher education institutions with similar institutional and host municipality

characteristics looking to implement comprehensive sustainability policies in their  
CMPs?

Furthermore, this report will explore perspectives on the integration of sustainability principles in campus planning initiatives and the policy development process.

## **Rationale**

The recent rise in sustainability principles within CMPs as well as Official Plans (or equivalent) or local sustainability plans in Ontario and within Canada has led to an opportunity to exchange knowledge, and explore varying sustainability planning frameworks. Noted by many to be role models and places of innovation, higher education institutions are in a unique position to contribute to discussions on sustainable planning. Often viewed as “living labs”, higher education institutions are able to provide answers to municipalities that are struggling with incorporating broad sustainable planning principles into their planning policies, projects, and programs. It is the intention of this report to analyze CMP policies of two Ontario higher education institutions and provide recommendations to campus and municipal planners in the area of sustainable planning and policy development.

## **Methods**

The recently updated and approved CMPs of the University of Guelph and Queen’s University were chosen as case studies for this report because of comparable institutional and host municipality characteristics, both institutions were guided by similar campus planning consultants during their master plan review, their CMPs were recently approved (2013 and 2014), and both plans have obtained important professional planning awards.

Their policies were mined for sustainable planning characteristics and principles using the Sustainability Tracking, Assessment, and Rating System developed by the Association for the Advancement of Sustainability in Higher Education. Document reviews in the form of manifest and latent analysis were conducted of each master plan to draw out a comprehensive list of campus master plan sustainability policies. The policies were evaluated quantitatively and qualitatively, with a Likert scale guiding the qualitative assessment. Semi-structured interviews with campus planning and sustainability professionals were then conducted to confirm the policies and information that were previously collected, address gaps in data, and understand the policy development processes that had occurred behind the scenes while the campus master plans were being developed as well as updated.

## **Findings**

### *Document Review Findings*

Quantitative evaluation of CMP policies found that between the two institutions, there was a similar policy emphasis in Landscape Management and Transportation. The CMP policies of both institutions, however, differed in focus in policies concerning Building Energy Consumption, Clean and Renewable Energy, and Stormwater Management.

Through the qualitative evaluation of CMP policies, it was observed that policies concerning Building Operations and Maintenance, Building Design and Construction, Building Energy Consumption, Transportation, Landscape Management, and Stormwater Management exhibited sustainability characteristics and spoke to a sustainability intent. Aspects that these policies focused on that demonstrated sustainability characteristics and holistic policy planning approaches included:

- Prioritizing renewal and reuse of campus buildings, infrastructure, and utility systems;
- Re-aligning emerging space needs with existing spaces on campus;
- Promoting the implementation of energy-efficient technologies either as upgrades or from the beginning of new development projects;
- Promoting and encouraging the implementation of active and sustainable transportation strategies;
- Life cycle approaches to landscape management;
- Stormwater management strategies that addressed quality and quantity concerns; and,
- Promoting sustainability research and incorporating pilot projects as well as findings into the institution's campus planning processes and initiatives.

When comparing the sustainable CMP policies of both institutions, it was found that the University of Guelph held a more comprehensive set of sustainable CMP policies than its counterpart (Table E1). Although Queen's University's CMP policies exhibited a multitude of sustainability policies and objectives that were also detailed, according to the STARS evaluation criteria by AASHE, it did not contain a comprehensive set of sustainable policies. This was the focus of the report because of the widely accepted principle that sustainability is holistic and encompasses the three pillars: environment, economics, and equity.

**Table E1: Qualitatively Evaluating Sustainable CMP Policies using the AASHE (2014) STARS Evaluation Criteria (refer to Appendix E for a detailed evaluation criteria).**

Theme	Criterion	University of Guelph	Queen's University
<b>Academics</b>	Research and Curriculum		
	Campus as a Living Laboratory	●	⊕
	Academic Research	●	⊕
<b>Engagement</b>	Campus Engagement		
	Student Life	⊕	⊕
	Public Engagement		
	Community Partnerships	⊕	⊕
<b>Operations</b>	Air and Climate		
	Greenhouse Gas Emissions	⊕	●
	Outdoor Air Quality	⊕	⊕
	Buildings		
	Building Operations and Maintenance	●	●
	Building Design and Construction	●	●
	Indoor Air Quality	⊕	⊕
	Dining Services		
	Food and Beverage Purchasing	⊕	⊕
	Energy		
	Building Energy Consumption	●	●
	Clean and Renewable Energy	⊕	●
	Grounds		
	Landscape Management	●	●
	Purchasing		
	Electronic, Cleaning, Office Paper, and Local Purchasing	⊕	⊕
	Transportation		
	Campus Fleet	⊕	⊕
	Commute Modal Split (Student and Employee)	●	●
	Support for Sustainable Transportation	●	●
	Waste		
	Waste Minimization	⊕	⊕
	Waste Diversion	⊕	⊕
	Water		
	Water Use	⊕	⊕
	Stormwater Management	●	●
Wastewater Management	⊕	⊕	
<b>Planning and Administration</b>	Coordination and Planning		
	Sustainability Coordination	⊕	⊕
	Sustainability Planning	●	●

## *Interview Findings*

The three boxes below highlight reoccurring recommendations and challenges expressed in interviews by campus planning and sustainability professionals at both the institutions.

### **Approaching the sustainable campus master plan policy development process:**

- Leverage existing campus assets, infrastructure, and building inventory through policies that encourage and enable adaptive re-use and renewal;
- Investigate and highlight existing sustainable campus planning initiatives;
- Respect the existing campus planning context of the institution; and,
- Approach sustainability as an underlying CMP objective that is integrated in all policies, design guidelines, and courses of action.

### **Challenges to developing sustainable campus master plans:**

- Ensuring a common understanding and knowledge of sustainability;
- Lack of funding to support the implementation, management, and monitoring of potential sustainability policies
- Presenting long-term payback period of sustainable CMP policies and initiatives to institutional administrative staff and/or decision makers;
- Footprint of the University of Guelph and Queen's University originally built for automobiles; and,
- Securing technical experts and expertise throughout the course of the campus master planning process.

### **Moving forward in sustainable campus planning:**

- Update other campus planning policy documents and/or initiatives to align with the sustainability objectives of the CMP and current trends in campus planning;
- Involve more technical experts;
- Secure funding and resources for sustainability policies and/or initiatives in advance of campus master plan reviews and updates;
- Refer to sustainability rating systems that include quantitative and qualitative metrics;
- Increasingly integrate sustainability planning practices in CMP policies for next iterations of the CMP; and,
- Adopt a collaborative approach with various faculty, departments, administrations, and student groups during the campus master planning process.

## Recommendations

The following recommendations were proposed as a result of this study:

### **Lessons learned from the University of Guelph's Campus Master Plan (2013)**

1. Revisit the ability of sustainability research and academia to inform campus planning and policy development processes. A mutually beneficial relationship between academic and campus planning groups can form;
2. Focus on other sectors of sustainable campus planning and policy development that are not only building construction, operations, and management. Look to emphasize other sectors such as community development, student life, and research and academics; and,
3. Prioritize reuse and renewal before looking to new and sustainable forms of development. Reuse and renewal may be more practical and financially prudent than new development.

### **General lessons learned from the University of Guelph's and Queen's University's Campus Master Plans**

1. Increasingly integrate technical experts and expertise into the campus master planning and policy development process;
2. Secure funding and resources specifically for sustainable campus planning initiatives and policies earlier in the campus master planning stage; and,
3. Align other campus policies and sustainability plans with the sustainability objectives and policies of the campus master plan to ensure cohesion among all institutional policies.

### **Applying lessons outside the Ivory Tower**

1. Municipalities to revisit renewal and adaptive reuse planning initiatives in their jurisdiction. Moreover, they can re-evaluate current municipal land uses to ensure they align with users' needs as well as population, employment, and service projections; and,
2. Municipalities to review higher education institutions' policy development approaches to creating compact, walkable, and mixed-use communities, which have been a growing focus of municipal sustainability planning initiatives.