PROVOST'S ADVISORY COMMITTEE ON BUILDING A RESILIENT UNIVERSITY OF WATERLOO

Table of Contents

2
5
9
11
13
20
21

Committee members

Co-Chairs

Mary Wells, dean, Faculty of Engineering Norah McRae, associate provost, Co-Operative and Experiential Education Jeff Casello, associate vice-president, Graduate Studies and Postdoctoral Affairs

Members

Marilyn Thompson, special advisor to the provost on organization strategy Nick Manning, associate vice-president, communications Jenny Flagler-George, director, strategic initiatives Rebecca Butler, project manager, strategic initiatives

INTRODUCTION

In May 2022, the vice-president academic and provost created an advisory group to consider the next stage in the evolution of the University of Waterloo specifically related to our operations to ensure our future "resiliency". The terms of reference for the advisory group are attached as **Appendix A** of this report.

The provost instructed the committee to focus on our future resilience as an institution to address operational challenges, draw insights from the COVID-19 experience, and foster resilience in pursuing the university's short-term goals and long-term vision.

As we started this work, we realized that the original terms of reference for this committee were too ambitious in terms of the specific tasks and outcomes the provost was hoping to achieve. As we considered our initial consultations on the senior leadership team of the university and the people that report to them (reaching department chairs, associate deans, associate vice-presidents and senior staff leaders), it was apparent that much more effort and emphasis were needed amongst University leaders to set the stage for the transformational changes we need to make as a University. In dialogue with the provost, the committee agreed to a change in approach to make recommendations that will set the stage for deeper cultural and institutional changes as we strive to meet our vision for Waterloo at 100.

The word "**resiliency**" can mean a number of different things. Generally, resilience is associated with an ability to withstand hardship and return to an original state or improved state.

At a university, for example, under some circumstances we may seek to return to normal operations (e.g., following a fire, flood, or another natural hazard event), but when exposed to other conditions (e.g., a global pandemic or climate change) may seek to return to an entirely different set of operating conditions and capabilities.

Universities are complex systems. Institutions are made up of inter-connected and interdependent elements that operate under distributed decision-making and responsibilities. The University of Waterloo consists of multiple academic and administrative units and a complex set of governance and administrative regulations and functions. From an administrative perspective, our future success is predicated upon a consistent, shared focus on our dual mission of education and research and how we operate collectively to achieve this.

From early in our organization's history the University of Waterloo emerged as a decentralized university. Some of our forebears recall that this decentralized approach allowed local decisions to be made, avoiding what was seen to be excessive bureaucracy at existing Universities. Others recall a "startup" mentality of getting things done. Whether it emerged organically or by design, for many decades this decentralized approach led to exceptional outcomes for our local and global communities as we scaled up.

Since our founding in 1957 we have experienced near continual growth. Our faculty and staff complement has risen from more than 2,200 in 1984 (784 faculty and 1532 staff) to more than 4,000 in 2023 (1397 faculty and 2691 staff). Our student body has grown from around 20,000 in 2000 to more than 40,000 in 2022 placing Waterloo amongst the largest Universities in Canada. What these data suggest is that the university has grown to a level of complexity that warrants new, better integrated approaches to our work.



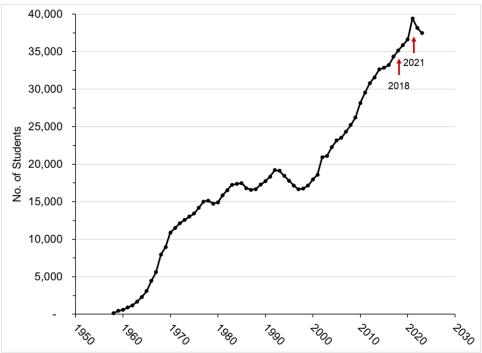


Figure 1 – Changes in student enrolment over time at the University of Waterloo. The recent introduction of the corridor system and freezes on domestic tuition by the provincial government in 2018 have capped that growth.

There was a bulge in student admissions in 2021 that reflects the additional 1000 math students who were enrolled in 2020 as a response to the pandemic.

More recently, and perhaps imperceptibly, there has emerged a sense that the way we work today presents substantive challenges to our ability to realize our vision for Waterloo when we turn 100 in 2057. Anecdotally – and measurably in our survey instruments – our colleagues report frustrations with common systems and approaches. Though the university responded admirably, the COVID-19 pandemic forced us into rapidly inventing new ways of working to fit the realities with which we were faced. Candidly, our traditional processes, policies, and organizational structures have not kept pace with the institution's evolution, necessitating changes to enhance and streamline our processes and systems, effectiveness, and cross-institutional cooperation.

In addition to these internal factors for change, Waterloo at 100 has laid out the case for us to be resilient to external factors mandating change. Technological change is driving new and expanded expectations from our students; public trust in institutions is weakening; funding models for post-secondary institutions are under pressure; and our competitors are encroaching on the things that have historically been unique strengths at Waterloo. The list of external pressures is long – the imperative for changing the way we work is clear.

In establishing this committee, the university recognizes the need to adapt its operational practices to better support its vision and transformational goals. Indeed, we want to prepare the University of Waterloo to be able to respond and adapt in a fluid, nimble and agile manner to changing conditions. This committee provides us with an opportunity to pause and reflect on how we can make our operations more resilient, effective (achieving our goals with appropriate resources) and human-centric (our university promotes the academic, professional and personal well-being of all members of our community).



These ambitions align strongly with the vision for Waterloo at 100. In tackling this challenge, we have embraced the guiding principles that underpin that vision. Put clearly by the Waterloo at 100 documents:

"To unlock the full potential of our university, we will create a culture of co-ordination and collaboration both within and beyond our institution. Models that served us well in early days of rapid growth have often resulted in siloed activities. Today, we operate in a complex environment that requires teams to work together across many units internally and with external partners globally and locally. We need to find ways to coordinate, collaborate and co-create to build an empowered organizational culture with an emphasis on accountability, nimbleness and impact. This cultural shift will also mean instilling collaboration as a mindset and skill in our students and valuing collaborative connections with community and global partners."

In subsequent sections, we document the methods the committee used in its work and the findings that emerged. The report concludes with a set of six recommendations that in the committee's judgement will advance the resiliency of the University of Waterloo.



COMMITTEE ACTIONS

The University of Waterloo is an incredibly complex organization. The committee began its work acknowledging that the task ahead – increasing the university's resilience – would be difficult, incremental, and heavily reliant on colleagues' willingness to engage meaningfully with us, and in the recommendations that emerge from our work.

CREATING RESILIENT SYSTEMS – AN UNDERPINNING

The committee also began its work knowing that meaningful change requires us to approach things differently from the way they are at present. It requires us to recognize our successes as well as our challenges in how we are currently operating.

Recognizing this and considering the complexity of how universities operate, the committee approached its mandate using a "systems design" approach or, more completely, a "system of systems" (SoS) construct.

Conceptually, the SoS approach aims to understand the relationships between the multiple interconnected and interdependent academic and administrative units but also allows us to envision and articulate a "desired future state" for our operations. We also decided it was critical to take a user-centered design approach to see how faculty, staff and students in a range of roles experience our university system.

For us to imagine what this complex system of systems working effectively would look like, we first offer a simple version of a single system (Figure 2):

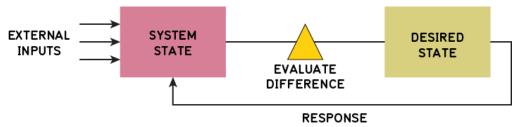


Figure 2: Schematic illustrating the concept of a systems thinking approach.

This diagram encourages us to think of the university in its current operation, but with a view to a (future) desired state. When our current situations are different from (or are not projected to be) the desired state, responses ought to be taken to move us towards the desired state. Naturally, the decisions made within one system may influence the performance of other university systems. All of the university systems are influenced by elements beyond our immediate control. To better understand how this system thinking applies at the university, we offer a case study at Appendix B looking at the admissions process.

Emerging from the diagram, we propose that from a systems perspective, a university can be considered resilient when:

 The relationships reflected in the system diagram – particularly metrics of the actual state and their comparison to the desired state – are well understood and regularly monitored



- 2. Those responsible for managing the system **are motivated and empowered to develop and enact responses** that not only **move the single system towards the desired state**, but are able to (collaboratively) evaluate the impacts of their proposed responses to the overall system
- 3. Those responsible for overseeing systems are actively monitoring the external influences on their (and other) systems with the goals of adapting their own systems' functions and coordinating with other systems' teams
- 4. Governance and infrastructure are in place to promote the necessary coordination within and among systems to achieve local and university-level goals.

CONSULTATIONS

To tackle the work of the committee more effectively, we decided to align the university operations into categories that covered our internal processes. These included:

- People (recruitment and retention of faculty, students and staff)
- Infrastructure (physical, information technologies, institutional analysis)
- Resources (budgeting and finance)
- Governance (policies and procedures e.g., how we make decisions)
- Co-ordination (how effectively our operational units interface and work with each other)

Our first step was to survey the executive leadership (Executive Council, or EC) team (senior leaders at the university of Waterloo, including everyone who reported directly to the provost or president) to understand their experiences as well as their perceptions of how well university systems were operating (our survey instrument is attached at Appendix C). We expanded our reach with survey instruments for the Council of Academic Leaders (CAL) and Leadership Forum. CAL is a body that consists of predominantly faculty members in leadership roles across the Faculties, including associate deans and chairs/directors as well as senior administrative leaders. Leadership Forum consists of the academic support unit (ASU) directors as well as executive officers from the Faculties. Appendix D provides the make-up of each of these groups.

EC members (senior leaders of both academic and administrative operations) were given an additional section in their survey to understand better the frequency and coordination of our interactions with each other as we carried out our academic mission of conducting research and educating undergraduate and graduate students.

We hoped that these survey instruments would provide us with insights from a broad section of university leaders to understand what was going well, what areas needed attention and what activities were currently underway across the university. We have provided a summary of data at Appendix E that plots the level of coordination on the vertical axis relative to the frequency of interactions on the horizontal axis. This plot shows the results from EC members in delivering undergraduate education; similar results have been generated for both graduate education and the conduct of research. Appendix E also contains the responses from each group to the survey questions about how well we are doing currently with our internal processes.

Based on the survey outcomes the committee held a series of conversations between ASU leads to discuss our findings related to coordination between operational units, explore the positive



attributes that are contributing to well-coordinated relationships and understand the nature of the challenges and obstacles that are limiting levels of coordination between units.

Following these series of discussions amongst ASU leads, a series of meetings with the Faculty Deans occurred to present the syntheses of our findings and discussions with the ASU leads and get their perspectives related to coordination between Faculties and ASU units. These conversations led to important observations on our resiliency and informed, in part, our recommendations.

A challenge for all large research Universities is the tension that exists between innovation and coordination. Referring to Figure 3, Executive Council (EC) members tackled this question and provided their perspectives of the advantages and risks of a decentralized university. Appendix F provides specific responses to these questions including current barriers to collaboration.

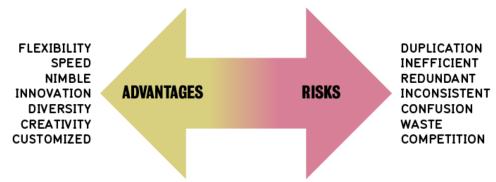


Figure 3: EC responses to the advantages and risks of a decentralized university.

VALIDATING OUR APPROACH

To help us ensure that our thinking about the work of this committee stayed on a productive track, we read and contacted the author of a highly relevant book entitled "Administratively Adrift" which was published in 2022 by Scott Bass (provost emeritus) at American University (AU) and professor of public administration and policy in the School of Public Affairs. Dr. Bass served as AU's provost from 2008-2018. Under his leadership, the university became a student-centered institution of higher learning. This book describes the influences of history, tradition, and internal and external pressures on how Universities are organized and function administratively. It also explored how successful organizations outside of higher education deliver services such as hospitals taking a user-centered design approach.

The committee recognized that, in addition to our own analysis, seeking support from external experts in developing organizational resilience would provide an essential backdrop for our work. We asked Deloitte to conduct an external scan and provide a summary of the activities other peer Universities and public sector organizations were doing to become more resilient. We also asked them to analyze data from our internal scans.

In tasking Deloitte in September 2022, we asked them to use three dimensions for their analysis: people, process and systems (or technology). Looking outside of the university for leading practices on organizational resiliency revealed insights that focused on key aspects of resilient organizations which ultimately informed a Resiliency Framework. Deloitte suggested the university could implement the framework to address the key areas of improvement



identified through the internal surveys (Figure 4). To realize the aspects of the Resiliency Framework, six key enablers were identified. These include:

- 1. Create and enable a future-ready workforce
- 2. Facilitate collaboration and co-creation
- 3. Foster adaptive and inclusive leadership
- 4. Build an empowered organizational culture with an emphasis on accountability
- 5. Offer flexible and personalized learning options to improve student outcomes
- 6. Invest in modernization through technology and automation

The Resiliency Framework

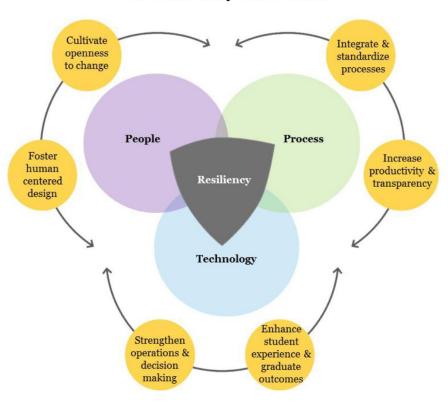


Figure 4: Deloitte's proposed resiliency framework

Deloitte's full and final report is included at Appendix G. The committee is grateful to Deloitte's team for their work to support us. Their report helped the committee frame thinking on the findings and recommendations that follow.



FINDINGS

The committee has spent significant time analyzing and reviewing the qualitative feedback we received through our various surveys, meetings and workshops. We have analyzed the feedback and survey results and summarized into the following areas:

COMPLEXITY

Colleagues have reported that their workloads are increasing. This is in part due to our size and changing expectations of work (a general do more with less attitude). It's also in part due to our complexity and the evolution of inefficient systems. The capacity to do strategic coordination falls behind with the pressures of day-to-day operations taking precedence. With this growth in complexity, there may be value in greater engagement with those units that provide specialized, sophisticated support in a complex system.

CLARITY OF ROLES AND RESPONSIBILITIES

Among university leaders, there are gaps in both the understanding of other units' work, and how other units perceive the lead's own unit's responsibility. Our leaders in both Faculties and ASUs often expressed a lack of understanding of work that is done elsewhere, making complementarity and coordination more difficult.

Decision making and strategic direction

There is a perception that, at times, decisions are made without consultation with those who will need to implement the decisions. This creates complex workflows and a disconnect in understanding actual goals and objectives. Often, our units struggle to identify or match strategic direction from their leaders leading to a lack of meaningful engagement and difficulty agreeing on shared outcomes.

Accountability, success and who has the voice to create the Universities "Desired State"

The university has been described as a "system of systems," with a (or multiple) "desired states" — outcomes that we are trying to achieve. There is a perception that it is unclear who determines this desired state and coordinates it. When decisions are made that move us away from this, it is unclear who is accountable. When moved towards a desired state, it is unclear how this is acknowledged and rewarded.

LOCAL PERCEPTIONS

There is a sense of trust within, but not outside, portfolios. This could have emerged out of responsiveness of working within local units or a lack of responsiveness when working across portfolios. There is a perception that solutions are often generated locally due to an engrained entrepreneurial spirit, and acting in this way should be applauded under certain circumstances. There is also a perception that these local solutions may not be achieving the "desired state" at the university level (and often a lack of agreement about what the "desired state" is).



ISSUES WITH PROBLEM RESOLUTION

When challenges arise, we tend to not be proactive and engaging in trying to find a resolution to that problem. Often, we "build around the problem" creating localized solutions by allocating resources to replace or support the under-performance or mismatch of expectations.

GAPS IN FINANCIAL AUTONOMY

There is a perception that in some ASUs, there are (complex and prolonged) pathways to follow to get resources for new and ongoing initiatives, whereas other units (including some ASUs) and Faculties are perceived to have financial autonomy. Concurrently, there is a lack of clarity from Faculty leaders on the "right-sizing" of resources to the ASUs. This perceived lack of responsiveness and general lack of clarity creates uncertainty and perceived differences in how initiatives may be prioritized and enacted upon, depending on financial capacities.

CONCERN ABOUT DATA

Perhaps not surprisingly for an academic institution, people are hungry to base decisions and business planning on data. Our leaders consistently identify data availability, interpretation, transferability, and capacity to use as a decision-making tool as notable challenges. We have an expectation that data is openly available to us — but cultural habits and complex technological systems are preventing us from using data as a business tool. This manifests most clearly when key data-holding units don't generate data immediately in the format the end users wish to have. This prompts the end user to invest resources to generate or manipulate the data in ways that are of value to them. The corollary is when local solutions are created to work with data and workflows, they're often limited to a very local scale. So, units with less resources don't benefit from the investment, and we end up with disparate systems, and inequitable experiences for our community.



THE WAY TOWARDS RESILIENCE

For the University of Waterloo to become resilient and overcome the issues we have identified and discussed in this report, the various parts of our university must work together as a coherent system. This means all our operational units (Faculties and ASUs) must function as a whole – as One University – to achieve our common purpose and academic mission.

Any organization, including this university, functions best when all employee groups are working together toward common goals – a shared understanding of how local and university "desired states" align. Guided by the University's core missions of teaching and research, and the creation of conditions where our students excel, Faculty, staff and union employees all play an important role in achieving an effective university. Each group brings an expertise and knowledge however this may not always be well understood across employee groups. We must find a way to bridge this gap and close it.

Bridging this gap will require us to create processes that encourage productive behaviour. We also need to provide forums where faculty and staff can co-create and co-design our academic operations (across Faculties and ASUs) so that they see each other as true partners in the pursuit of our shared academic mission. This will also strengthen trust – through a deeper and more accurate understanding of each other's operations.

Substantive and transformational change (as we are recommending) within a university is difficult. If this change is perceived as "top-down" there exists a very high likelihood of not being welcomed by the faculty and staff that must implement it. Forcing change, while sometimes expedient, often undermines long-term, sustainable impact. Instead, to effect transformational change, we must find mechanisms to build shared goals and aspirations that involve our entire community. The motivation for pursuing change and the rewards of effecting change must be compelling, consistently repeated and carried deep into the university so that virtually every employee is aware of our goal and motivation.

Both academic and administrative units typically function as siloed operations – where the desired state of systems is determined locally, and responses are typically advanced with local resources. Any framework for organizational change within the university must account for this predominant and existing characteristic. To begin a meaningful dialogue between faculty and administrative stakeholders about the unintended consequences of fragmented services on achieving effectiveness towards our academic mission, we must first confront the reality of our university structure.

One of the largest changes that will need to occur is the culture of the organization. The mindset of our community, in particular our leaders, will need to shift so that the obligation of any operational unit is to contribute its best to our overall system, not to maximize its own control and access to resources. This will include purposeful and strategic decisions to "de-silo" operations and create opportunities for operational units to coordinate at their interfaces much more effectively than they ever have before. To do this, we need to move from "task-specific and silo-specific" work, strategy and infrastructure to institution-wide flexible and integrated approaches. By extension, this implicitly requires a common development, understanding and endorsement of university goals and visions – a widely held concept of the university's "desired state."



A WATERLOO FRAMEWORK FOR RESILIENCE

To help us tackle the ongoing changes we need to make as an institution, we offer a new framework for organizational resilience at Waterloo (Figure 5).

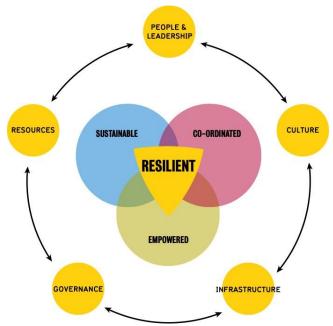


Figure 5: Waterloo Framework for building university resilience.

As shown in the above figure, to realize the aspects of our resiliency framework, five key enablers were identified. These include:

- Culture
- People and Leadership
- Infrastructure
- Resources; and
- Governance/Decision making/Coordination/Policies

By executing activities focused on these five enablers, we can realize the benefit of the Resiliency Framework we have outlined that would promote a more agile, nimble and responsive organization, one able to withstand known and unknown future challenges.

Implementation of these enablers can be prioritized based on alignment to feedback gathered through the work of this committee. This will enable the institution to build momentum on key areas that are considered important to leaders, ultimately beginning the culture and change evolution that must occur to realize a more resilient University of Waterloo.



RECOMMENDATIONS

We have six specific recommendations to offer. The first deals with a tactical suggestion on how to facilitate the change needed to realize the aspects of our resiliency framework and moves us towards actionable steps we can take that we believe will help make us be more resilient and which will position us well for the future. These are critical enablers to help us move towards our desired future state. The other five relate to each of the five enablers for our resiliency framework and include both short-, medium- and longer-term recommendations and actions.

In each of our recommendations, we strove to identify the work that is already underway across the institution that could help us in achieving resilience. We were not able to capture every initiative, idea or workplan that already exists so our notation of existing related initiatives is incomplete; we expect the provost may draw additional connections between this report and the variety of important projects already underway.

RECOMMENDATION 1 CREATE AN ACCELERATOR FOR "RESILIENCY"

Create a new nucleus for resiliency that is co-led by a senior academic and a senior staff member. Operating akin to an accelerator, the mandate of this effort will be to provide a focal point for the work required to build a resilient University of Waterloo and move us towards our desired future state.

We propose the creation of a new "resiliency" team as essential to advance the ideas and challenges we have identified in this report. While these colleagues will not hold sole accountability for the success of operational and process structures, they will promote a necessary and ongoing focus on user experience and human-centered design of our systems. The responsibilities will also include:

- the creation and oversight of pathways for interaction through cross-functional teams with specific terms of reference
- the identification of areas of strength to scale and spread across the university, or areas for opportunity to build co-ordination and appropriate levels of effectiveness for a resilient University of Waterloo
- coordination and oversight of the remainder of our recommendations, with license to modify or improve on these first ideas to promote resilience

We believe this accelerator could create and use temporary cross-functional teams from across the university which would help to advance the work that needs to be done and promote empowerment and trust across portfolios. As a rule, working across units allows for commonly developed desired states, that consider purposefully the impact of decisions on multiple portfolios, at various scales.

Amongst the first tasks of the unit should be a study of how the people in our community (students, faculty and staff) experience the disparate systems which support the administration of our university. Initially, we believe intense focus should be placed journey mapping to help us understand these unique experiences. This will help us further identify and prioritize specific areas that need to be addressed and will help us measure outcomes of this resilience effort.



There is a continuous improvement community of practice at the University of Waterloo that started in 2018 to foster a culture of problem-solvers within and across teams, providing a consistent framework and set of tools for improving processes founded on Lean principles and continuous improvement methodology. We propose that this community of practice and full-time resources dedicated to continuous improvement at Waterloo should be housed under the new resiliency office to better take advantage of their expertise across a range of functions.

RECOMMENDATION 2 SHIFT OUR UNIVERSITY CULTURE TOWARDS "ONE UNIVERSITY"

Move our university away from its current siloed culture towards a culture of "One Waterloo" in our operations.

For purposes of this report, we have defined organizational culture as a shared set of values (what we care about), beliefs (what we believe to be true), and norms of behavior (how we do things). The first step in transforming culture is to define the desired culture in the form of a compelling set of leadership principles and supporting behaviors. To do this effectively **all** our university leaders will need to commit to adjusting their ways of working to reflect this desired culture.

To support this culture shift we believe we need an internal communication campaign to support our new leadership principles to embed the work already underway as part of Waterloo at 100 to renew our organizational values and to create employee buy-in and support for the "One Waterloo" concept.

We also lend our strong support to the idea that we will remain a place where people can gather to live, learn and work in person. The concept of "One Waterloo" must be rooted in our reality that we are a community with a strong sense of place and value in experiences with our human connections and community, while technology can enhance and enable our work and connections.

We will also need to rethink our performance management and reward systems to help reinforce a move towards "One Waterloo". By aligning people processes with the desired culture, managers and leaders have incentives to behave differently, hire differently, and develop new competencies. Managers and leaders have a set of expectations against which performances can be compared. The recent work related to Waterloo at 100 is an excellent starting point to connect this campaign.

A system must be managed, it will not manage itself. Hence effective management of a system requires transformational leaders who can look beyond narrow perspective, silo-centric mental models to broader system-focused ones. Though most leaders recognize the importance of breaking down silos to help people collaborate across boundaries, it will take concentrated time, effort and a culture change to make it happen. Silo mentality not only reduces efficiency but, at its worst, contributes to reduced morale and a form of isolated culture.

It would be remiss of us to report on university culture without also referring to the importance of the in-person experiences that the University values for students and employees. The presence on campus of our faculty and staff matters to our students and their colleagues.



Regular and frequent interactions among students, staff, and faculty are essential to maintaining the vibrancy of the University as a scholarly community for our students and each other, developing a healthy institutional culture, and ensuring the future success of the University of Waterloo. As the University looks ahead to imaging a new culture and shared set of values, we urge the administration to keep in mind the importance of in-person experiences while balancing the benefits of remote work and learning.

Moreover, we are finalizing this report in the weeks after the horrific attack at Hagey Hall that was motivated by hateful views of gender identity and gender expression. This violent act was profoundly disturbing to the entire University of Waterloo community, students, staff, and faculty alike. It was a direct assault not only upon individual members of our community, but also upon the core values of our institution. Universities are mosaics of people and ideas, and their strength lies in accepting, embracing, and celebrating the differences amongst us. We take the firm position that universities are — or should be — safe spaces where ideas can be explored and discussed in an unbiased and tolerant manner, where individual identity and choice are respected, and where people may express their views without fear. What happened on June 28, 2023, and the conversations that we have had since with students, staff, and faculty, have shown us how very much we still have to do to reach that place where all members of our community feel equally esteemed, valued, and supported. The ongoing work related to the core values of our institution and our future efforts to create "One University" will be two avenues to reaffirm our commitment and responsibilities to each other and must be rooted in the experiences and needs of all our community members.

Existing related initiatives:

- Values renewal project
- WatSEE Framework Toolkit
- Strategic Talent Management Framework

RECOMMENDATION 3 PEOPLE AND LEADERSHIP (AN EMPOWERED UNIVERSITY)

Create pathways and learning opportunities for our faculty and staff to become knowledgeable about how our university operates and empower our colleagues to operate as effective leaders who connect and collaborate.

People who practice empowerment participate and contribute at high levels, are creative and innovative, take sound risks, are willing to be held accountable, and demonstrate leadership. When properly understood and developed, empowerment can help individuals authentically and meaningfully engage in their work and in their organizations.

Our employees must develop a "working knowledge" of the interrelationships between all of the relevant components (and sub-processes) within our university system and everybody that works in it. This means that they must learn how to navigate the many internal and external interrelated connections and interactions, as opposed to discrete and independent departments or processes governed by various chains of command.

Leaders shouldn't just encourage employees to be curious about different groups and ask questions about their thinking and practices; they should also urge their colleagues to actively consider others' points of view. People from different organizational units don't see things the



same way. Everyone needs to have a deeper understanding of how our complex university works and the unintended system dynamics that can occur when one unit makes an independent decision that impacts upon the other inter-connected units.

We need to identify activities that facilitate boundary crossing. The core challenges of operating effectively at interfaces are simple: *learning* about people on the other side and *relating* to them. Employees need to have the opportunities and tools to work together productively across silos. To unleash the potential of our university we need to look at ways to incentivize horizontal collaboration and our leaders must equip people to learn and to relate to one another across cultural and logistical divides.

Specific ideas include:

- 1. Develop intensive academic leadership training and support, particularly at the time of onboarding, but also including opportunities for faculty who have not taken formal positions of administrative leadership. Our academic leaders require support and guidance to understand how our university works and operates, and how they fit into the larger picture. We are conscious that our HR teams are working on a comprehensive Strategic Talent and Performance Management Framework, and we encourage HR to ensure this work also includes a specific leadership competence framework.
- 2. We encourage university leaders to continuously participate in specific learning opportunities related to equity, diversity, inclusion, anti-racism, decolonization and Indigenous peoples in Canada.
- 3. Engagement with our stakeholders identified a universal challenge experienced related to the complexity of our operations. Capacity is lacking to do strategic coordination as we default to the day-to-day ways of operating across our channels. There is a need to assess where the gaps exist to create consistency across units and two-directional channels to support clear reception and transmission of communication both internally and externally.
 - We acknowledge that the people and roles who undertake this reception and transmission activity vary from unit to unit. However, for a hub-and-spoke approach to work each unit will need to identify and assign leads for the two-directional flow of information internally. **Harvard Business Review calls these roles "Cultural Brokers"**. At a minimum, each VP and Dean should have an identified individual within their portfolio who can operate in this key cultural broker role (Deans normally have this capacity within their Executive Officer roles). The intention of this initiative is to create a known, visible point of contact within each portfolio that will effectively receive, redirect, and follow to resolution inquiries from outside their own unit with appropriate timeliness and responsiveness.
- 4. Explore opportunities for employees learning and development in their careers with a "Waterloo WIL" concept. The student model of co-operative education is what separates an education and experience at Waterloo from other institutions. Waterloo should echo this rich and transformative experience for its employees, combining Work Integrated Learning and career development to enrich and enhance our employee experience, reframing the secondment/temporary opportunities in a new way. This Waterloo WIL concept should add to the current OHD-delivered leadership programs.



- 5. We are conscious that this report is preceded by a variety of good work over the last decade to recommend change at the university. We suggest that the university reexamines previous reports to understand why recommendations were not actioned and if there continue to be relevant actions, we can take today to move us towards a resilient university. Existing reports to review include:
 - i. Recommendations from the Excellence Canada "Going for Gold" Excellence Innovation and Wellness
 - ii. Interdisciplinarity Task Force Report
 - iii. Employee Engagement Survey (2019)
- 6. Launch an annual award for individuals, teams or units to recognize a commitment to "de-siloing" our operations, processes and systems.

Existing related initiatives:

- Strategic Talent and Performance Management Framework project
- OHD Leadership Foundations and Leadership Essentials programs



RECOMMENDATION 4 INFRASTRUCTURE (THE THRIVING UNIVERSITY)

Create a comprehensive, actionable plan to address issues related to our infrastructure – both our aging physical infrastructure and IT systems through which data that can flow across the university. This is urgently needed to empower us towards integrated strategic planning, decision-making and running our operations in an effective manner.

At 66 years old, our university campus is ageing and the earliest buildings that were built are now in need of renewal. As the University revisits the value add of being present on campus, our infrastructure ought to create inspirational spaces that support that creation of community, and the positive derivatives of collaboration.

Technology is ubiquitous on campus: the demand for more and better technological applications and wireless connectivity is unrelenting. Access to data and information to help people make data-driven and timely decisions is critical. Currently it appears we have multiple different IT systems requiring users to navigate different interfaces which makes work cumbersome and wastes time with multiple entry points. The committee feels strongly that we must find ways to easily work with data and present this data in useful dashboards, workflows and visualizations that can more readily inform our work.

Specific ideas include:

- Develop time limited cross-functional teams to identify and elevate localized infrastructure solutions that are scalable by matching problem scale and problem solution. Cross-functional teams should be resourced appropriately, with intentional collaboration across ASUs and Faculties as "One University", and a commitment to the right level of authority and decision-making to explore promising locally developed solutions.
- 2. Constituent Relationship Management (CRM) systems are designed to provide centralized and integrated data about student and University interactions, from the time a student is a prospect, through the university experience and beyond graduation. The CRM can store information about prospective students, compile data on periodic student interactions with administrators and create a personalized record or every pertinent exchange between students and designated administrators. We recommend that the university reinvigorate efforts to examine and procure an effective CRM. A CRM system is necessary as it will help us to better understand, and support coordinated interactions between the university and students across their lifecycle. In sharing data across systems clearly the right balance between protecting student privacy and supporting student academic success and wellbeing will need to be struck.

In combination with an enterprise resource planning (ERP) system and the integration of multiple database components within an overall networked system (including CRM) would allow us to flow and share data across units and allow multiple individuals to enter data related to students across units to help ensure data is accurate and current.

3. Recognizing the longer-term need to revise Policy 46—Information Management for effective data governance, in the shorter-term, develop a cross-functional team to champion an institution-wide commitment to open data and identify specific needs for common data sets to facilitate the development of a common data set agreement and



shared dashboards to support an integration of teams and interoperability across specific systems.

Existing related initiatives:

The recent organizational shift of repositioning IST to the VPAF portfolio better aligns a technology master plan with operational decision-making.

The deployment of a new campus master plan is also an excellent step and will position us well for the future in terms of developing a more sustainable campus that reflects our connection to the land and Indigenous ways of thinking and knowing.

- Deferred maintenance planning
- New residence build
- New conference facility and hotel planned for R&T Park
- IT Review recommendation implementation

RECOMMENDATION 5

GOVERNANCE, ADMINISTRATION AND DECISION MAKING (THE COORDINATED UNIVERSITY)

Review internal governance and administrative structures (e.g., internal committees, working groups, and councils) to understand pathways for operating in a desired state of empowerment and better coordination, including standardized process development and operating procedures.

The complexity and uniqueness of a university structure and culture requires purposeful and thoughtful ways to improve co-ordination across our many operational units. One tangible approach is to start a meaningful dialogue between faculty and administrative stakeholders and broaden people's vision. Everyone needs to have a greater understanding and vision to look beyond their own immediate environment and understand how other connected units' work; you can't lead at the interfaces if you don't know where they are.

This can be accomplished by organizing cross-silo dialogues: instead of holding one-way information sessions, leaders should set up cross-silo discussions that help employees see the world through the eyes of colleagues in other parts of the university. The goal is to get everyone to share knowledge and work on synthesizing that diverse input into new solutions. This happens best in face-to-face meetings that are carefully structured to allow people time to listen to one another's thinking. This will also include encouraging people to ask the right questions. As this work evolves, and becomes more commonplace, these conversations may also support the resolution of difficult and previously unresolved issues that span multiple units.

Though it fell outside our capacity as a committee, we recommend that the university undertake a review of executive, leadership meetings and routines to better streamline information sharing and coordination. Regular face-to-face retreats to enable leaders to engage with one another and discuss critical strategic topics would help with coordination.



On a more fundamental level, we also need to begin a review of Policy 1 to support streamlined approaches to policy development that aligns to the current needs and ways of operating for the university.

Existing related initiatives to continue:

· Refreshed annual work planning

RECOMMENDATION 6 RESOURCES (THE SUSTAINABLE UNIVERSITY)

Create greater transparency and understanding of university resources for the short-, medium- and long-term and ensure financial incentives are put in place to focus our collective efforts on activities that will support our resiliency framework and that help propel us to realize our vision.

It is apparent that our budget model is not well understood and, overall, our community literacy related to our budget is low. The provost may wish to consider ways in which understanding of university finances is enhanced; further the provost may wish to increase the frequency of updates on the budget to help create more awareness of our financial positions. Additionally, we add our strong support to the ongoing work that is reviewing the Waterloo Budget Model and associated integrated planning processes.

We recommend that the provost establish a resiliency fund that incentivizes and supports work that helps us move towards resilience with a focus on interdisciplinary initiatives for Faculties and ASUs that reward innovation and collaboration within and across boundaries.

Lastly, we suggest that the university makes some effort to create capacity in each unit for the purpose of innovation and collaboration across units. This work will need to be coordinated with the Resiliency Accelerator team to guide pathways for innovation, suitable process documentation to ensure the innovations are repeatable or scalable and other systems to affect operational changes.

Existing related initiatives to continue:

- External review of the Waterloo Budget Model (WBM) and Integrated Planning
- Capitalize on articulating our strengths to motivate and draw resources from new and alternative sources, such as fundraising and capital campaigning.
- Establish and support the new Enterprise Project Management Office development to manage large external partnerships.

At Appendix H we offer a table summarizing these recommendations and providing a suggested prioritization approach for each item (short-, medium-, and long-term).



CONCLUSION

In discussions to inform this report, the committee was pleasantly surprised to observe the openness in both the minds and hearts of our leaders to understand our systems, how these systems work, the roles that our colleagues play in the operations of our university and, perhaps most importantly, exploring ways we can work more effectively together.

The committee's work brought to the forefront the eagerness among our community to continue to maintain and grow trust over time and finding the right balance in co-leading change between academic and administrative units is crucial.

We reflect that our conversations have underlined how much passion, energy and love exists for our institution amongst our community. We are confident that these traits will power our university to capitalize on the opportunity ahead of us today — and to realize the vision we collectively set for Waterloo at 100. Our "desired state" is now set. Moving us to a resilient state will allow us to be:

"A community of curious, collaborative, innovative and entrepreneurial problemsolvers and leaders who seek to understand and identify equitable and sustainable solutions for the future of humanity and our planet."



APPENDICES

APPENDIX A

Provost's Advisory Committee on Building a Resilient University of Waterloo

Background and Context

The University of Waterloo is a student-centric, people-focused institution committed to twin missions of excellence in Academics and Research in the context of a thriving on- campus presence. Through the vigorous pursuit of these missions with unique approaches, the University serves and helps shape society in many ways.

By advancing our core mission commitments in Academics and Research together with our strong differentiating commitments in co-operative education and other forms of work integrated learning, innovation, application, and entrepreneurship, we have continuously demonstrated the value of the University of Waterloo as an integrator with society. Through these powerful channels we are both in touch with understanding the evolving needs of society, and committed to meeting those needs.

Our commitment to development of talent to compete in a global market includes providing access to necessary and marketable skills while completing a degree. Thus, we strive to combine talent development through excellent academic programs with: work and application experience; entrepreneurial opportunities; digital skills building and adapting to new digital tools shaping the economic and societal future; and personal development. We enable learners before, during, and after formal programs and degrees and are committed to lifelong learning; building fluid models of lifelong learning (upskilling and reskilling in an ever-evolving economy). Similarly, our intense focus on research for global impact supports cutting edge insights on humanity and innovative and entrepreneurial approaches to address the greatest challenges facing society.

This is a complex undertaking and can create numerous invaluable benefits, but also challenges of co-ordination, alignment, and efficiency for the organization, as well confusion anxiety and stress to our students and employees through the abundance of choice and attendant individual calculation of opportunity costs of what and how much can be pursued with both rigour and care. Thus, we also strive to be sensitive to the community we are creating and being supportive of our students, staff, and faculty.

Having recently gone through a long and successful period of growth and diversification that has transformed the University in many ways, we must realize that to adequately build a strong foundation for our next period of transformation, the University of Waterloo will need to understand and commit to changing some of our foundational ways of operating.

Many of our traditional processes, policies, structures, organizational features and ways of working have functioned adequately, but with the growth and transformation of the Institution have not kept pace with the updating and integration that will be necessary to create the cross-institutional co-ordination and efficiency desired by the community of the current University of Waterloo, and to build the foundation for realizing the vision of short/medium and long-term transformation of the University.



The Strategic Plan of the University of Waterloo positions us well to lead in this transformation.

The Strategic Plan of the University of Waterloo focuses on three themes

- Talent development
- Global Research excellence
- Strong supportive and sustainable communities

Many of our current Strategic Plan priorities call for greatly enhanced cross-institutional cooperation, interdisciplinarity and de-siloing.

As we continue to implement a wide variety of initiatives driven by the strategic plan, there is agreement on a cross-institutional focus on four immediate short-term areas of cross- cutting priority:

- 1. Enhancing the student experience, particularly through coordinated approaches to wellness and thriving, and differentiating our approaches (for Undergraduate, Graduate, etc.)
- 2. Promotion, building and sustenance of a culture of equity diversity, inclusion, and anti-racism
- 3. Promote indigenization of campus, programs, processes and policies and enhance relations with local communities at an institutional level
- 4. Strengthening a widening array of interdisciplinary programs and opportunities in research and education, with focus on the enabling factors for greater collaboration within and across Faculties and centres/institutes
- 5. Refining Waterloo's internationalization agenda, through education, research, and service

It is important to work across the institution and to allow this work to happen with less friction than currently exists. Achieving this function in ways of operating will allow us to reach our short-term cross institutional goals now, the many other cross institutional goals for our medium and long-term priorities, and ultimately for our future of Waterloo at 100.

Even pre-pandemic, the need for elements of this foundational work was well know, but like many complex organizational challenges was navigable, and only intermittently and episodically acknowledged, while not addressed systematically because of the variety of interesting and successful initiatives and opportunities that exist to attract the institutional focus and attention. However, the pandemic has been a galvanizer of our attention to operational co-ordination and strategic importance. Indeed, the greater context of the leadership importance of universities in general, and the University of Waterloo in particular, as essential, relevant, functional, and sustainable structures in society have been exposed and tested by the challenges of the global pandemic. Of course, many of the challenges faced by universities have been shared widely across: the PSE sector, government, industry, and society in general. There is a real opportunity for us to harness the lessons learned from the COVID experience and our responses to it, in order to improve systems and processes to better contribute to overcoming our ongoing shared challenges of many different sorts in the transformative co-evolution of the University of Waterloo together with other universities, government, industry and society.

Provost's Advisory Committee on Building a Resilient University of Waterloo



To successfully implement our short and medium-term strategic goals and to enable a long-term vision for a vibrant and thriving campus of the future, there is a need to more comprehensively address foundational organizational, planning, and operational features that currently present some impediments for this transformational approach. Cross institutional and inside unit coordination is needed, requiring resilience in the face of ongoing challenges as we continue to offer most of our academic programming predominantly in person. While some of this work was underway prior to COVID-19, there is opportunity to gather and apply useful lessons learned in areas across the Institution from the COVID-19 experience, and our responses to it.

To address this need, a *Provost's Advisory Committee on Building a Resilient University of Waterloo* will be commissioned. This committee will be Chaired by Mary Wells, Dean of Engineering and Co-chaired by Norah McRae, Associate Provost, Co-operative and Experiential Education (CEE), and Jeff Casello, Associate Vice President, Graduate Studies and Postdoctoral Affairs (GSPA).

TERMS OF REFERENCE

The Chair and Co-Chairs of the committee will first work with the VPAP as an Executive committee to further articulate these terms of reference, and to discuss: the resource needs of the committee; the size and structure of the committee; and accountabilities, timelines, and other logistics. The core committee will be populated with leaders from broad portfolios of the University with insights on policies, guidelines and procedures in key capacities.

The committee will in turn undertake broad consultation with existing bodies such as Executive Council, the Council of Academic Leaders, Deans Council, Info Group, and with constituencies in groups across the university.

Rather than functioning in isolation, the core committee will identify opportunities for deep work and distributed workload through subgroups commissioned with appropriate membership to take on specific tasks or projects within identified scopes of work. For instance, the Workforce Planning Committee has been identified as a subgroup with an immediate mandate of defining guiding principles of the future of work and providing recommendations on work options that align with those principles.

To ensure coordination and avoid the duplication of efforts, the Committee will be an integrator and amplifier of important efforts currently underway and will identify gaps and initiate action as the originator of new activity.

The committee will be aware that there are numerous other processes underway addressing aspects of interest that intersect with the scope of this committee. For instance, the university is undertaking a review of its budget model and processes and is seeking to build an integrated planning process to bring together academic planning, academic support planning, infrastructure planning, capital planning, and human resources/hiring planning with the budget planning process. In addition, a number of other individual and specific reviews and advisory projects are underway, such as the data as a strategic resource project, continuous improvement projects, admissions review process project, digital learning strategy, and workforce planning processes. The committee will seek to learn from these other committees and processes and to support their work; hopefully distilling best practices and outcomes for general application to other specific issues in the distillation of aligned recommendations.



Recognizing that the Strategic plan, and other visioning processes are underway, including the futures framework, the committee will focus on identifying and reconciling our foundational operational and process current states with what will be required structurally to drive our strategic objectives forward and enable the future success of a vibrant University of Waterloo. The committee will also recommend alignment with communications to ensure broad understanding across the University for the required foundational operational and process shifts.

A broad understanding and perpetuation of the shared vision, mission, values, and priorities of the institution across its many levels of organization and stakeholder communities is desirable and should be a focus of the team's work in both process and outcomes, as it will ultimately drive what we offer and how we offer it through a predominately on-campus experience.

Any recommendations regarding the building of the University of the Future will be aligned with the principles of our mission and will be focused on enabling our current and future crossinstitutional focus areas.

The plans/recommendations developed must focus on the desired outcomes of ensuring:

- Modernized processes, procedures and policies that bring transparency, order, efficiency, and opportunity to support the goals and priorities of the Institution, while maintaining standards of quality.
- Frameworks for operating that incent formal and informal interdisciplinary and cross institutional approaches and outcomes desirable in our academic and research missions by reducing existing burdens and barriers and not creating new ones.
- Both short and long-term challenges to the new normal are scoped and addressed.
- Structure and organizational clarity, and synergy. Lessons emerging from non-canonical working structures/working across traditional boundaries and structures, and suggestions for enhancement. Focus on networks, shared responsibilities and accountabilities for outcomes/impacts—shared priorities, shared incentives, and shared accolades, as an alternative to traditional line responsibility organizational structures only. The Committee will have a lens of why things are done the way they are when there are alternative more efficient and clear ways.

To position the work of the committee in the current operational reality of UW acknowledging the transition back to on-campus activity and to bring depth to focus, three phases of Building a Resilient University of Waterloo may be considered. The three phased approach will not pause work underway but will integrate and amplify ongoing activity. The urgency of COVID-19 recovery and other initiatives is anticipated to benefit from a more coordinated interface.

- 1. Return to Campus and Workforce Planning
- 2. Identify Innovations and gaps learned from COVID-19; leverage opportunities and address gaps to augment our pre-pandemic knowledge of innovations and gaps in our function and operations
- 3. Build on Innovations, train for further resilience, and create a flexible and vibrant campus

As the Chair and Co-chairs will be asked to develop workplans, the following are not intended as exhaustive lists, but will offer high level understanding of key activity and anticipated outcomes.



1. Return to Campus and Workforce Planning

(Already well underway with successful F2021, W2022 and planned S2022 terms with significant in person academic and research work, and service delivery)

- Continue to identify and address impediments that contribute to sensitivities of students, staff, faculty in full return to their in-person activities re: academics/instruction/classrooms, research spaces, office/desk spaces, health concerns, family arrangements, social/behavioural anxieties and concerns, general planning, and change/planning fatigue, etc.
- Clearly establish what the new norms are regarding space, personal space, meetings, hygiene/health and safety, decorum, and basic norms around work/learn environment.
- Throughout Summer 2022, continue with workforce planning and execution of return to work on-campus plans and with ongoing planning for the subsequent phases of focus ahead through late 2022 and 2023 and beyond.

2. Identify Innovations and gaps learned from COVID-19; leverage opportunities and address gaps

- The team will work with academic and operational leaders to identify positive COVID-19 adaptation and recovery-related innovations (e.g., innovative teaching/academic practices, online/hybrid service delivery models, effective communications, new non- canonical working groups focused on cross-unit issues or outcomes, etc.)
 - Leveraging awareness of positive innovations and learnings/lessons identified before or because of COVID-19 will inform renovation of a variety of operations, student services, academic programs/development, student, staff, and faculty development and supports, etc.
 - In addition to the positive learnings from pre-COVID and COVID, the team will work with leaders to identify the gaps and inefficiencies that have been revealed pre-COVID and through COVID-19 in academic and operational areas that need to be addressed to provide the foundation for transformational change (e.g., infrastructure and space management, IT systems and infrastructure, academic integrity related issues, policy and procedural inefficiencies/inadequacies/deficiencies, financial vulnerabilities and risk management, Digital Learning Strategy void, teaching technology/instructor training gaps, graduate students as student and as employees dichotomy, etc.), student and employee group relationships, creating culture in-person environment/remote environment, etc.).
 - An important task is the sharing of information across units so that the best practices
 and experiences can be integrated and incorporated where possible across units to best
 act on opportunities and alleviate challenges in operations and academics. Ultimately,
 practices and policies should be revised to facilitate best applicability and utility for
 current conditions and aspirations, and to help prepare for future challenges.

Implementation will begin for key elements in 2022/2023 academic year but will be ongoing.

3. Build on Innovations, train for further resilience and create flexible and vibrant campus.



- Grow consensus around new teaching, research, work, and operational/organizational practices. Iterate as necessary, address concerns, aiming to build engagement and culture as a result of the process/approach taken, as well as the positive outcomes.
- On the basis of growing consensus and culture change, advance revised and new policies and procedures, and develop plans and planning processes helpful for dealing with current and possible future operational threats.
- Adapt procedures to allow for greater flexibility (courses, staff, work, workspace, etc.) and to improve on gaps identified for sub-optimal procedures/practices (workflows, digital strategy and automation, eliminating redundancy and internal friction, systems and data integration, etc.
- Adopt planning tools suitable for regular review and revision to mitigate strategic and operational risks.

Continuing timeline, building on implementation of work beginning in 2022/2023 academic year, but will be ongoing.

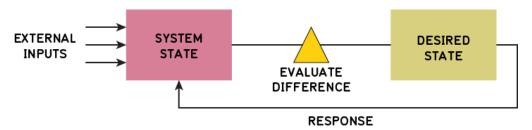


Appendix B

Defining our Desired State - A case study on systems for resilience

The university is unquestionably a complex system. As an example, consider how the university admits cohorts of first year undergraduate and graduate students. The process involves Faculties setting enrollment targets for each program, considering both international and domestic students. Once the university receives the applicant pool for each program, decisions are made on to whom offers of admission are made. Historical data on acceptance rates are used to estimate the number of students who are expected to accept the offer and enroll at Waterloo.

This process can be conceived of and modeled as a system. In this case, the "desired state" can be perceived as enrollments that meet (but not exceed significantly) the university's targets on a program-by-program basis. Throughout the admissions cycle, those responsible are comparing the current forecast fall enrollments to the target fall enrollments.



If a program is forecast to have enrollment lower than the target, this will reflect a "delta" – a difference in the desired state of full enrollment to the system state of a forecast enrollment lower than target – that warrants a response. In this case, the response may be that the program elects to make offers of admissions to those students whose incoming averages are in the next lower band. If previous offers were limited to those with 85% or higher, the response may be to make offers to all applicants whose average is 84%. Alternatively, the response may be at the Faculty level where other programs may have the capacity to increase their enrollments such that the Faculty will meet target, and internal differences can be easily managed.

The system is, of course, subject to many external forces. The university regularly undertakes efforts to build awareness of its programs (through, for example, the Ontario University Fair) with the end goal of generating a sufficient number of high quality applicants to our programs.

When the University of Waterloo's Donna Strickland was awarded a Nobel Prize, many very positive stories were written about her and the University of Waterloo. When such an event occurs, one would expect very strong student interest in Waterloo, resulting in deeper applicant pools that might result in higher qualifying averages. The admissions process may also be impacted by geopolitical forces. When, for example, the United States made immigration more difficult for some groups of students, Canadian universities saw increases in applications from those parts of the world.

Naturally, the actions of other universities can influence Waterloo's admissions. Often, graduate applicants will receive offers from multiple universities and the student's choice may be based in part on the level of funding offered at the competing institutions. If the University of Toronto offers very high funding levels, that can result in fewer students accepting Waterloo's offer of admission.



Each of these observations reflect external forces to the system that influence how the system must be operated to work towards having the actual state be consistent with the desired state. It is also true that the incoming enrollment levels have direct impacts on other university systems. The revenue streams for the university's operating budget are directly tied to student enrollments through tuition and grants. Throughout the fiscal year, the university monitors actual enrollments and projects revenues. In cases where enrollments differ from previous estimates, the university may be required to adapt its spending in order to ensure the actual state matches the desired state where revenues meet or exceed cost, balancing the budget. Often, we refer to these interactions between systems as "systems of systems."



Appendix C

Survey Instruments

Survey questions for Council of Academic Leaders and Leadership Forum

- Name
- Who do you consider to be the internal 'clients' for your work?
- How do you measure success in your Unit/Faculty?
- Are these the correct areas to focus our efforts?
- What additional areas should be considered?
- What else should we keep in mind when considering the scope of this committee?
- What Units/Faculties do you work with most frequently?
- What are the two greatest challenges or 'pain points' in your role, when working with other Units/Faculties?
- Identify the top two things that we could change that would have the most positive transformational effective in your role.
- People: recruitment and retention of faculty, staff and students
 - Reflecting on what is going well and what is not in this area, provide a reason for your rating of people.
 - o In thinking about the area of people, what would a desired future state look like?
 - o What initiatives are already underway in the area of people?
- Infrastructure: physical infrastructure, IT systems, and Institutional Analysis and Planning
 - Reflecting on what is going well and what is not in this area, provide a reason for your rating of infrastructure.
 - o In thinking about the area of infrastructure, what would a desired future state look like?
 - o What initiatives are already underway in the area of infrastructure?
- Resources: budget and financial processes
 - Reflecting on what is going well and what is not in this area, provide a reason for your rating of resources.
 - In thinking about the area of resources, what would a desired future state look like?
 - What initiatives are already underway in the area of resources?
- Governance: policies and decision-making bodies
 - Reflecting on what is going well and what is not in this area, provide a reason for your rating of governance.
 - In thinking about the area of governance, what would a desired future state look like?
 - o What initiatives are already underway in the area of governance?
- Co-ordination and Integration: coordination of individual Units' goals and University goals
 - Reflecting on what is going well and what is not in this area, provide a reason for your rating of coordination and integration.
 - o In thinking about the area of coordination and integration, what would a desired future state look like?



- What initiatives are already underway in the area of coordination and integration?
- What else would should we know?
- Are these the correct channels for collaboration and communications?
- What else should we keep in mind when considering consultation and communications?
- Any final thoughts you would like to share with us?

Survey questions for Executive Council

- Name
- Are these the correct areas to focus our efforts?
- What additional areas should be considered?
- What else should we keep in mind when considering the scope of this committee?
- People: recruitment and retention of faculty, staff and students
 - Reflecting on what is going well and what is not in this area, provide a reason for your rating of people.
 - o In thinking about the area of people, what would a desired future state look like?
 - What initiatives are already underway in the area of people?
- Infrastructure: physical infrastructure, IT systems, and Institutional Analysis and Planning
 - Reflecting on what is going well and what is not in this area, provide a reason for your rating of infrastructure.
 - In thinking about the area of infrastructure, what would a desired future state look like?
 - What initiatives are already underway in the area of infrastructure?
- Resources: budget and financial processes
 - o Reflecting on what is going well and what is not in this area, provide a reason for your rating of resources.
 - In thinking about the area of resources, what would a desired future state look like?
 - What initiatives are already underway in the area of resources?
- Governance: policies and decision-making bodies
 - Reflecting on what is going well and what is not in this area, provide a reason for your rating of governance.
 - In thinking about the area of governance, what would a desired future state look like?
 - What initiatives are already underway in the area of governance?
- Co-ordination and Integration: coordination of individual Units' goals and University goals
 - Reflecting on what is going well and what is not in this area, provide a reason for your rating of coordination and integration.
 - o In thinking about the area of coordination and integration, what would a desired future state look like?
 - What initiatives are already underway in the area of coordination and integration?
- What else would should we know?
- What operational Unit(s) do you lead?



- Do you interact with other operational units related to 1) undergraduate programs, 2) graduate programs and 3) research?
 - Advancement Frequency (how much)
 - Advancement Coordination
 - o Alumni Frequency (how much)
 - Alumni Coordination
 - o AP, Students Frequency (how much)
 - AP, Students Coordination
 - AVP Academic Frequency (how much)
 - O AVP Academic Frequency (how much)
 - AVP Academic Frequency (how much)
 - o AVP Equity, Diversity, Inclusion & Anti-Racism Coordination
 - o AVP Graduate Studies and Postdoctoral Affairs Frequency (how much)
 - AVP Graduate Studies and Postdoctoral Affairs Coordination
 - o AVP Indigenous Relations Frequency (how much)
 - AVP Indigenous Relations Coordination
 - o Central Communications Frequency (how much)
 - Central Communications Coordination
 - o Co-operative and Experiential Education Frequency (how much)
 - Co-operative and Experiential Education Coordination
 - Faculties Frequency (how much)
 - Faculties Coordination
 - o Finance Frequency (how much)
 - Finance Coordination
 - o Human Resources Frequency (how much)
 - Human Resources Coordination
 - o Institutional Analysis and Planning (IAP) Frequency (how much)
 - Institutional Analysis and Planning (IAP) Coordination
 - o Information Services and Technology (IST) Frequency (how much)
 - o Information Services and Technology (IST) Coordination
 - Library Frequency (how much)
 - Library Coordination
 - o Legal and Immigration Services Frequency (how much)
 - Legal and Immigration Services Coordination
 - o Office of Research Frequency (how much)
 - o Office of Research Coordination
 - Planning and Budgeting Frequency (how much)
 - Planning and Budgeting Coordination
 - o Registrar's Office Frequency (how much)
 - Registrar's Office Coordination
 - Secretariat Frequency (how much)
 - o Secretariat Coordination
 - Sustainability Frequency (how much)
 - Sustainability Coordination
 - Waterloo International Frequency (how much)
 - o Waterloo International Coordination
 - WatSPEED Frequency (how much)
 - WatSPEED Coordination
- Who would you suggest for the core committee (EC or direct reports to EC member)?
- What will this person be able to provide informed insight and perspective on? Please select all that apply.



- Are these the correct channels for collaboration and communications?
- What else should we keep in mind when considering consultation and communications?
- Any final thoughts you would like to share with us?



Appendix D

Make-up of our survey groups

Executive Council *list last updated February 13, 2023

NameTitleVivek Goel, chairPresidentAndrea KelmanSecretary

James Rush Vice-President, Academic & Provost

Jacinda Reitsma Vice-President, Administration & Finance

Nenone Donaldson Vice-President, Advancement

Charmaine Dean Vice-President, Research & International Sandra Banks Vice-President, University Relations

Andrea Kelman (acting) University Secretary

Sheila Ager Dean of Arts

Mary Wells

Dean of Engineering

Bruce Frayne

Dean of Environment

Lili Liu

Dean of Health

Mark Giesbrecht Dean of Mathematics
Robert Lemieux Dean of Science

Sean Thomas Associate Vice-President, Advancement Services

David DeVidi Associate Vice-President, Academic

Paul Fieguth Associate Vice-President, Academic Operations
Nick Manning Associate Vice-President, Communications

Kelly McManus Associate Vice-President, Community Relations & Events

Karim S. Karim

Associate Vice-President, Waterloo Ventures
Ingrid Cowan

Advancement Strategy and Principal Giving

Christopher Taylor Associate Vice-President, Equity, Diversity, Inclusion and Anti-Racism

Vacant Associate Vice-President, Enterprise Engagement

Christine McWebb Associate Vice-President, Faculty , Planning and Policy

Graeme Stewart Associate Vice-President, Government Relations & Economic Development

Jeff Casello Associate Vice-President, Graduate Studies and Postdoctoral Affairs

Catherine Burns Associate Vice-President, Health Initiatives

Jean Becker Associate Vice-President, Indigenous Relations

Sanjeev Gill Associate Vice-President, Innovation
Ian Rowlands Associate Vice-President, International

Bernard Duncker Associate Vice-President, Research and International
Michael Dorr Associate Vice-President, Marketing and Brand Strategy
Ian Milligan Associate Vice-President, Research Oversight and Analysis

Diane Johnston Associate Vice-President, Research and International Management Services

Norah McRae Associate Provost, Co-operative and Experiential Education



Allan Starr Associate Provost, Institutional Data, Analysis & Planning
Jennifer Kieffer (interim) Associate Provost, Integrated Planning and Budgeting

Chris Read Associate Provost, Students
Jenny Flagler-George Director, Strategic Initiatives

Marilyn Thompson Special Advisor to the Provost on Organizational Strategy
Bessma Momani Assistant Vice-President, Research and International
Richard Myers Chair, Affiliated and Federated Institutions of Waterloo

Greg Smith Chief Information Officer
Michelle Hollis (acting) Chief Human Resources Officer
Alison Boyd Senior Director, Alumni Relations

Fayaz Noormohamed Senior Director, Strategy and Implementation

Mat Thijssen Director of Sustainability
Stepanka Elias Executive Director, Facilities
Sarah Hadley Chief Financial Officer
Nickola Voegelin General Counsel
Cathy Newell Kelly University Registrar
Beth Namachchivaya University Librarian

Council of Academic Leaders *list developed by the Provost's Office, as of June 2023

Chair / Director* Department

Blake Phillips* Accounting & Finance, School of

Jennifer Liu Anthropology

Sivabal Sivaloganathan Applied Mathematics
Maya Przybylski* Architecture, School of

Kirsten Muller Biology

Mario Ioannidis Chemical Engineering

John Corrigan Chemistry

Scott Walbridge Civil & Environmental Engineering

Craig Hardiman (Interim) Classical Studies

Chaitanya Swamy Combinatorics & Optimization

Grit Liebscher (interim) Communication Arts

Raouf Boutaba* Computer Science, School of

Mark Weber Conrad Centre for Business, Entrepreneurship and Technology

Mario Coniglio Earth and Environmental Sciences

Lutz-Alexander Busch Economics

Kankar Bhattacharya Electrical & Computer Engineering
Jay Dolmage English Language & Literature

Neil Craik* Environment, Enterprise and Development, School of Simon Courtenay* Environment, Resources and Sustainability, School of



Monica Leoni Fine Arts
Tara Collington French Studies

Susan Elliott (interim) Geography & Environmental Management

James Skidmore Germanic & Slavic Studies

Daniel Gorman History

Jessica Thompson Interaction, Design and Business, Stratford School of

Russ Tupling Kinesiology and Health Sciences

Robert Gorbet Knowledge Integration
Mark Hancock Management Sciences

Michael Collins Mechanical and Mechatronics Engineering

Mark Vuorinen Music

Stanley Woo* Optometry, School of
Reina Neufeldt Peace and Conflict Studies
Andrea Edginton* Pharmacy, School of

Patricia Marino Philosophy

Brian McNamara Physics & Astronomy
Markus Moos* Planning, School of
Jasmin Habib Political Science
Heather Henderson Psychology

Ellen MacEachen* Public Health Sciences, School of

David McKinnon Pure Mathematics

Troy Glover Recreation & Leisure Studies

Scott Kline Religious Studies

Denise Marigold Social Development Studies
Trish Van Katwyk* Social Work, School of
Dan O'Connor Sociology & Legal Studies

Monica Leoni Spanish & Latin American Studies
Changbao Wu Statistics & Actuarial Science
Lisa Aultman-Hall Systems Design Engineering

Federated and Affiliated Colleges & Universities

Marcus Shantz, President

Conrad Grebel University College

Troy Osborne

Conrad Grebel University College

Wendy Fletcher, President

Kristiina Montero, Vice President Academic & Dean

Peter Meehan, President

Carol Ann MacGregor, Vice President Academic and Dean

Renison University College

St. Jerome's University

St. Jerome's University

Richard Myers, Principal United College
John Abraham, Academic Dean United College

Leadership Forum *list developed by OHD, as of June 9, 2023



Name Title

Adrien Cote Executive Director, Velocity
Alan Binns Director, UW Police Services

Aldo Caputo Director, Centre for Extended Learning

Alfie Scozzaro Director, Principal Giving

Alice Knight Director, Strategy and Operations
Alice Raynard Associate University Secretary
Alison Boyd Senior Director, Alumni Relations

Associate University Librarian, Collections, Technology, & Scholarly

Alison Hitchens

Communication

Amelia Burton

Amanda Cook Director, Sexual Violence Prevention and Response

Amanda McKenzie Director of the Office of Academic Integrity.

Associate Director, International Professor, School of Environment, Resources

and Sustainability

Anar Jahangirli Director, Strategic Communications Faculty of Mathematics

Andre Jardin Associate Registrar, Admission

Andrea Olson Associate Director, Donor Relations and Stewardship

Andrea Kelman Executive Director

Andrea Prier Director, Centre for Work-Integrated Learning (WIL)

Andrew Barker Director, Institutional Research

Andrew McAlorum Director, Client Services

Angela Christelis Director of Academic Quality Assurance and Continuous Improvement

Anne Galang Director, Executive Communications

Anne-Marie Fannon Director, Work-Learn Institute

Beth Cotter Director, Marketing & Communications Faculty of Engineering

Candace Harrington Director of Advancement Faculty of Mathematics
Chris Peace Associate Director, International Operations
Chris Wilson-Smith Director, Media Relations & Issues Management

Christine Goucher Director, Creative Services

Clare Bermingham Director, Writing and Communication Centre

Corrine Krauss Associate Director, Financial Controls and Systems

Daniela Seskar-Hencic Dir, Strategic Plan & Eval

Daniella Cross Director, Marketing & Communications in Advancement

David Timms Director of Advancement Faculty of Science

Debbie Knepper Executive Officer

Domenica DeBilio Director, Employment Relations

Donna Ellis Director, CTE



Doreen White Director Research Operations

Evan Taylor Legal Counsel
Faye Schultz Executive Officer
Fred Zhu Executive Officer

Ghada Linda Director

Gina Hickman Director of Equity

Giovanna Zinken Director, Campus Services within Plant Operations
Giovanna Zinken Director, Campus Services within Plant Operations

Glen Weppler Director, Campus Housing

Goldi Gill Executive Director, Campus Wellness

Greg Smith Chief Information Officer

Jack Rehder Executive Officer

Jason Testart Director, Information and Security Services
Jenn Willoughby Director, Student Life Communications

Jennifer Coghlin Associate Registrar, Enrolment Services & Academic Policy

Jennifer Woodside Director, Centre for Career Action

Jennisha Wilson Director, Anti-Racism

Jenny Flagler-George Director, Strategic Initiatives

Jeremy Reed Director, Coop Services

Jessica Denenberg Assoicate Director, International Relations

Jessica Wroblewski Director, Annual and Planned Giving
Jody Berringer Director, Undergraduate Recruitment

Joel Norris Director, Central Stores

Jude Doble Associate University Librarian, Administration and Strategic Initiatives

Judene Pretti Director, CEE Business Services

Julia Joza Director, Research Ethics
Justin Nankivell Director Research Security

Kari Pasick Stewart Director, Marketing & Communications

Karl Schuett Senior Manager, Institutional Budget & Planning

Kate Windsor Director of Safety

Katherine Marshall Executive Officer Faculty

Kathryn MacDonald Executive Officer

Kathy Smidt Director, Internal and Leadership Communications
Katy Wong-Francq Executive Director, Research Strategic Initiatives

Kelly McManus Associate Vice-President, Community Relations & Events

Kerry Stryker Director, Integrated Communications



Kim Bardwell Director of Advancement Faculty of Arts

Kimberley Gingerich Executive Officer, Academic

Lauren Burgess Associate Director, Prospect Research and Pipeline Development

Director, Campaign Planning and (Interim) Director, Advancement

Leanne Perreault

Communications

Lee Elkas Director, Food Services

Lee Hornberger Director, Total Compensation

Leslie Copp Director, FANS

Leslie Cove Director, Equity, Diversity and Inclusion in Research
Marianne Simm Director, Graduate Studies and Postdoctoral Affairs

Martha Foulds-Carey Director Planning, Math

Maryam Latifpoor-Keparoutis Director of Advancement Faculty of Environment

MaryAnne Chan Associate Director, Management Reporting and Budgets

Mathew Thijssen Director, Sustainability

Matthew Erickson Director, Conflict Management & Human Rights

Maureen Jones Director, Student Awards & Financial Aid
Meghan Whitfield Director of External Relations, Library

Melanie Will Director, Organizational & Human Development (OHD)

Melissa Conrad Executive Officer, Information Systems and Technology

Michelle Hollis Director, HR Client Services

Mike Szarka Director Research Partnerships

Mona Skuterud Executive Officer

Nadia Singh Assoc Univ Sec & Legal Counsel
Nancy Heide Director, Student Service Centre

Nathan Nelson-Fitzpatrick Director Quantum Com

Neil McKay Director, Research Systems and Analytics

Nicholas Hambleton Legal Counsel

Nick Manning Associate Vice-President, Communications

Nickola Voegelin General Counsel
Nigel Henriques Director, Systems

Oanh Kasperski Director, Marketing and Brand

Pam Fluttert Director, Instructional Technologies and Media Services

Pamela Charbonneau Director, Student Success

Patricia Hancock Controller, Finance

Prachi Surti Director, Development & Alumni Relations Faculty of Engineering

Rebecca Elming Director, Media Relations and Issues Management



Rebecca Wickens Associate University Secretary

Rex Coffin Director Plant ops

Richard Wikkernik Director, Student and Faculty Relations
Rob Hunsperger Director, Design and Construction Services

Roly Webster Director, Athletics
Ross Johnston Executive Director

Ryan Jacobs Director, Print & Retail Solutions
Sarah Willey-Thomas Associate University Secretary
Scott Inwood Director of Commercialization

Scott O'Neill Director, Undergraduate Recruitment
Sean Thomas Associate VP, Advancement Serv

Shabnam Ivkovic Director, International Strategic Initiatives
Sherri Sutherland Director of Advancement Faculty of Health
Shona Dunseith Director, HR Operations and Systems

Siobhan Stables Managing Director, IQC

Snjezana Cekrlija Associate Director, Research Finance

Sonya Buffone Director of the Office of Teaching Assessment Processes

Sophia Reid Associate Director, Operations

Stacey Mahoney Director, Systems, Technology and Analytics

Stephen Cook Director, Procurement & Contracts

Stephen LouieSenior Director, Energy & InfrastructureSteven BourqueDirector, Technology Integrated ServicesSuman ArmitageDirector, Brand & Strategic InitiativesSusan GrantSenior Director, Alumni Relations

Tara Thompson Faculty Financial Officer, Environment
Tracelyn Cornelius Director, Inclusive Communications

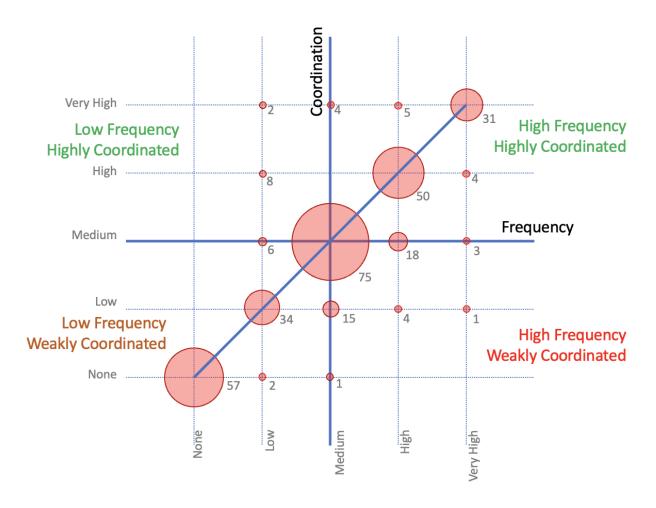
Tyler Wendland Associate Director, Treasury
Victoria Chu Associate University Librarian
Scott Nicoll Manager of Space Planning



Appendix E

EC survey coordination plot

Results for undergraduate activities measuring the frequency and level of coordination with other units.



Further findings from the EC survey are contained in a linked PowerPoint deck.



Appendix F

EC workshop

At an Executive Council meeting in January, the question was asked, "What are the advantages of a decentralized university?" A word cloud of the results is shown below highlight that the largest perceived advantage is autonomy, followed by nimbleness, flexibility and speed.



In contrast, when the question "What are the biggest risks due to decentralization and failure to coordinate" was asked of our leaders, the most prominent perceived risk was duplication of efforts, inefficiency and inconsistency as shown below.



The final question asked to our leaders was to "Identify top barriers to collaboration across units" with culture and trust being two of the most important issues we will need to overcome.



Poor communication Resistance

competition for resources

Leader insecurity lack of understanding of talen no exampls

not enough coffee Lack of awareness Zero-sum outlook

Culture success desire gains are long-term slow to change

confusion tenure time and resources Too many priorities

Territoriality resources territorialism Time Time Trust budget model Turf wars

Role clarity

Insecurity inflexibility unwillingness lack of rewards Protectionism inertia silos Communication structure turf

 $\begin{array}{c} {}^{\text{mismatched structure}} \\ {}^{\text{individual career goals}} \\ \text{Lack of understanding} \end{array}$

diffuse benefits inconsistent agency

Medieval guild structure



Appendix G

Deloitte Institutional Resiliency Strategy (PDF) 🙋



DRAFTFOR DISCUSSION

Institutional Resiliency Strategy

February 3, 2023

Deloitte.



Appendix H

Table summary of recommendations with prioritization matrix (short-, medium-, and long-term).

In addition to suggesting timeframes for activities we have identified under each recommendation, we have noted which activities are new, which are well underway and require support or amplification, and initiatives that we are recommending for further exploration.

LEGEND:



	Recommendation 1 Create an accelerator for "resiliency"
	Create an accelerator for resinency
Short (< 1 year)	Create a new resiliency team co-led by a senior academic and a senior staff member to provide a focal point for the work required to build a resilient University of Waterloo and move us towards our desired future state.
	Produce journey maps to help us understand how people experience our systems to identify and prioritize areas that need to be addressed.
Medium (1-3 years)	Reposition the community of practice and full-time resources dedicated to continuous improvement at Waterloo should be housed under the new resiliency accelerator to better take advantage of their expertise across a range of functions.
Long (3-5 years)	

	Recommendation 2 Culture (One University)
Short (< 1 year)	Support ongoing work to establish and embed new institutional values.
Medium (1-3 years)	WatSEE framework for Faculty and Staff to create the conditions for a "thriving intellectual life and workplace."
	Rethink performance management and reward systems to help reinforce a move towards "One Waterloo" (Amplify the Strategic Talent and Performance Management Framework (career pathing and performance appraisal/rewards system).
	Create and sustain a "One Waterloo" internal communications and employee engagement campaign.
Long (3-5 years)	

	Recommendation 3 People and Leadership (An Empowered University)
Short (< 1 year)	Encourage university leaders to continuously participate in specific learning opportunities related to equity, diversity, inclusion, anti-racism, decolonization and Indigenous peoples in Canada.
	Increase academic leadership onboarding and training, including management tools such as a handbook
	Reexamine following reports to identify actions recommended that have not yet been implemented: i. Recommendations from the Excellence Canada "Going for Gold" Excellence Innovation and Wellness ii. Interdisciplinarity Task Force Report iii. Employee Engagement Survey (2019)
	Identify individuals within every VP and Dean portfolio who can perform the role of "cultural broker."
	Amplify OHD Leadership Foundations and Leadership Essentials programs.
Medium (1-3 years)	Amplify the Strategic Talent and Performance Management Framework (career pathing and performance appraisal/rewards system
	∠ Launch annual award for individuals, teams or units to recognize "de-siloing"
Long (3-5 years)	Explore opportunities for employees learning and development in their careers with a "Waterloo WIL" concept

	Recommendation 4 Infrastructure (The Thriving University)
Short (< 1 year)	Support ongoing campus master plan refresh and deferred maintenance activities
	Campus IT review
	Create a comprehensive, actionable plan to address issues related to our infrastructure
	Develop a cross-functional team to champion an institution-wide commitment to open data and identify specific needs for common data sets to facilitate the development of a common data set agreement and shared dashboards to support an integration of teams and interoperability across specific systems.
Medium (1-3 years)	Reinvigorate efforts to examine and procure an effective CRM
	Create a cross-functional team to champion an institution-wide commitment to open data and identify specific needs for common data sets to facilitate the development of a common data set agreement and shared dashboards to support an integration of teams and interoperability across specific systems.
	Develop time limited cross-functional teams to identify and elevate localized infrastructure solutions that are scalable by matching problem scale and problem solution
Long (3-5 years)	New conference facility and hotel planned for R&T Park
	Deferred maintenance planning
	₩ Build a new residence

	Recommendation 5 Governance, policies and decision making (The Coordinated University)
Short (< 1 year)	Refreshed annual work planning and routines.
	Undertake a review of executive, leadership meetings and routines to better streamline information sharing and coordination.
Medium (1-3 years)	Organize cross-silo dialogues that help employees see the world through the eyes of colleagues in other parts of the university.
	Begin a review of Policy 1 to support streamlined approaches to policy development that aligns to the current needs and ways of operating for the university.
Long (3-5 years)	

	Recommendation 6 Resources (The Sustainable University)
Short (< 1 year)	External review of the Waterloo Budget Model (WBM) and Integrated Planning
	Create more opportunities for our community to understand university finances and increase the frequency of updates on the budget to help create more awareness of our financial positions.
	Establish a resiliency fund that incentivizes and supports work that helps us move towards resilience with a focus on interdisciplinary initiatives for Faculties and ASUs that reward innovation and collaboration within and across boundaries
Medium (1-3 years)	Establish and support the new Enterprise Project Management Office development to manage large external partnerships.
	Capitalize on articulating our strengths to motivate and draw resources from new and alternative sources, such as fundraising and capital campaigning.
Long (3-5 years)	