



Campus Master Plan Update

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Building Index

These building acronyms appear on diagrams and illustrations in Chapter 6 of this document.

Acronym Building Name

AL	Arts Lecture Hall	HH	J.G. Hagey Hall of the Humanities
B1	Biology I	HS	Health Services
B2	Biology II	LIB	Dana Porter Library
BMH	B.C. Matthews Hall	MC	Math & Computer
BRH	Brubacher House	ML	Modern Languages
C2	Chemistry II	NH	Ira G. Needles Hall
CGR	Conrad Grebel University College	OPT	Optometry Building
CIF	Columbia Icefield	PAC	Physical Activities Complex
COM	Commissary	PAS	Psychology, Anthropology, Sociology
CPH	Carl A. Pollock Hall	PHY	Physics
CSB	Central Services Building	PRC	Photovoltaic Research Centre
DC	William G. Davis Computer Research Centre	QNC	Quantum Nano Centre
DWE	Douglas Wright Engineering Building	RCH	J.R. Coutts Engineering Lecture Hall
E2	Engineering II	REN	Renison University College
E3	Engineering III	SCH	South Campus Hall
E5	Engineering V	SLC	Student Life Centre
EIT	Centre for Environmental & Information Technology	STJ	St. Jerome's University
ESC	Earth Sciences & Chemistry	STP	St. Paul's University College
EV1	Environment I	TC	William M. Tatham Centre for Co-operative Education & Career Services
EV2	Environment II	UC	University Club
FED	Federation Hall	UWP	University of Waterloo Place
GH	Graduate House		
GSC	General Services Complex		



1

INTRODUCTION



A premier institution with a far-reaching academic mission, the University of Waterloo is in a constant state of change and continued growth. In 2007, the Board of Governors determined it needed an update to the Campus Master Plan to guide the needs of the future. Opportunities for development in the heart of the campus were constrained and it was not clear where future growth should be directed. The university needed a vision and strategy to maintain the quality and integrity of the campus well into the future. The role of the Campus Master Plan is to shape and manage the physical changes that lie ahead by guiding the ongoing planning, design and development of the campus.



Aerial view of the Waterloo Campus in autumn
Photo: University of Waterloo

1.1

Purpose of the Master Plan

The 1992 Campus Master Plan provided strong direction for the Waterloo Campus including a number of formative initiatives. A preservation and remediation plan for the Environmental Reserve and preliminary design of the North Campus Research + Technology Park are examples of the Plan's success. Under pressure from new growth and development, the Campus Master Plan was not as effective in improving the quality and integrity of the South Campus. In some cases, demand for growth outweighed the need to protect and enhance open spaces and rationalize the circulation network.

This Campus Master Plan update was directed in large part to focus on the South Campus issues related to campus growth and open space. Pressure for Faculty growth and expansion through new and larger buildings threatens the quantity and quality of open space on campus and has the potential to significantly alter the overall structure and function of the

campus. Without up-to-date direction through a master plan, these pressures could compromise the quality of the entire campus.

The university is at a critical point in time where the decisions it makes will have a long-term impact on the quality of the Waterloo Campus. Global competition for faculty and students demands a high-quality campus environment to reflect the university's internationally recognized academic reputation. The primary focus of this Campus Master Plan update is to accommodate new growth while preserving, enhancing, and expanding the quality and integrity of the campus and its natural environment.

The Master Plan sets out three critical types of directives:

- ***Principles to control the location of new development;***
- ***Guidelines for the identification and design of open spaces; and***
- ***Directions for new patterns of movement.***



Dana Porter Library in summer
Photo: University of Waterloo



The Davis Centre Quad in winter
Photo: University of Waterloo

1.2 Master Plan Development Process

In the Fall of 2007, the University of Waterloo Board of Governors requested that a master plan be prepared to update the 1992 Campus Master Plan. The university engaged Urban Strategies to develop the Campus Master Plan update, as Urban Strategies had led the preparation of the 1992 Campus Master Plan. The master planning team, including Urban Strategies, Paradigm Transportation Services and GSP Group, developed this Campus Master Plan through a consultative and inclusive process.

To ensure broad university interests were reflected in the Campus Master Plan, the university and the master planning team identified a group of key stakeholders to participate in its development. This steering committee met regularly to provide feedback and direction, and included representatives of the Board of Governors, senior administration, faculty, staff, and graduate and undergraduate students.

A variety of consultation mechanisms ensured the Campus Master Plan reflects the broad interests of the university community. Many people with a stake in the future of the campus were interviewed early in the process, including faculty,

staff, students, and city and regional staff. These stakeholder interviews formed the basis for many of the themes and directions of the Campus Master Plan. The master planning team also led a series of presentations and workshops, and an open house with many university and community constituents for further input. The project website provided an alternative means to review materials and submit feedback.

The Campus Master Plan took additional direction from a variety of ongoing processes and initiatives. The university's *Sixth Decade Plan (2007-2017)* provided important information regarding the university's strategic directions and expected growth. Recent planning and development throughout the campus set a baseline for the campus planning study, and City of Waterloo initiatives, such as the proposed rapid transit corridor and neighbourhood studies, provided a backdrop for understanding the relationship between the university and the city.





1.3 The Campus Today

Founded in 1957, the University of Waterloo has quickly risen to become one of Canada's premier post-secondary institutions. The university is unique from others in Canada in how it accomplishes its mission. Ensuring awareness and responsiveness to the needs of society, the university has the largest post-secondary co-operative education program in the world, providing graduates with the knowledge, skills, and practical experience required to solve today's complex and pressing problems and to embrace future challenges.

The University of Waterloo is a comprehensive, research-intensive institution that educates over 24,000 undergraduates and nearly 4,000 graduate students. The university's six faculties, seven professional schools and many departments provide training in a broad range of academic disciplines. The Waterloo Campus is also home to four related post-secondary institutions, the federated university and affiliated colleges. Institutional relationships are also strong with nearby Wilfrid Laurier University.

In addition to its research and academic excellence, the University of Waterloo is a national leader in the transfer of ideas and technology to the private sector. More than any other school in Canada, the university has been the source of a great number of high-tech and knowledge-based spin-off companies. The North Campus Research + Technology Park speaks to the university's strong relationship with industry; growth in the R+T Park is unprecedented as more firms locate to this important technology node.

The university's landholdings include over 1,000 acres, ranging from the dense academic core mostly contained within the Ring Road and the new R+T Park, to the farm fields of the Northwest Campus and the Environmental Reserve. The Campus Master Plan aims to maximize the value of all of these places to support the academic mission of the university, maintain and enhance the quality of the campus, ensure strong community development and achieve sustainability.

Key Facts:

Faculties:

- Applied Health Sciences
- Arts
- Engineering
- Environment
- Mathematics
- Science

Federated University and Affiliated Colleges:

- St. Jerome's University
- Conrad Grebel University College
- Renison University College
- St. Paul's University College

Satellite Campuses

- School of Architecture, Cambridge
- Health Sciences Campus, Kitchener
- Balsillie School of International Affairs, Waterloo (Planned)
- Stratford Institute for Digital Media and Global Business (Planned)
- Nanjing, China (Planned)
- United Arab Emirates (Planned)

Quick Stats (2006-2007)

• Founded	July 1957
• Undergraduate Headcount	24,342
• Graduate Headcount	3,636
• Staff	2,251
• Faculty	977
• Waterloo Campus Area	1,000 acres

1.4

What We Heard

No one knows the university better than the people who live, work and learn here. In the spring of 2008, hundreds of students, faculty, staff, university leaders, neighbours and local government representatives were consulted through presentations, interviews, open houses and workshops. Through this process, a variety of themes emerged that capture shared values, concerns and wishes for the campus. These themes played a fundamental role in shaping the Campus Master Plan.

The Campus Master Plan should support the university's academic mission

- Good campus design fosters relationships between faculties.
- Long-term future academic needs are uncertain, but there is currently a strong demand for support uses (classroom, study space, student services).
- The South Campus is the academic core of the university, even if it means growing higher. The North and Northwest Campuses may be the right location for university uses that are not reliant on proximity to the core.

Campus development should reflect the quality of the university

- Waterloo's campus does not reflect its international status, and campus open spaces should see more investment.
- Development pressure is eating up open space, impacting the quality of the campus and the student experience.

- New rules for growth and development must be clear.
- The Grad House is dear to many, especially its important social functions.
- The Campus Master Plan should consider bold moves, such as demolishing underperforming buildings.
- The university should create leading edge sustainability guidelines, developed and implemented through student innovation and research.

Getting to and around the campus should be easy

- Parking is important to many and should meet the campus needs.
- A strategy is needed to reduce parking needs, including further transit improvements, promotion of alternate means of transportation and other initiatives, such as housing close to campus.
- University Avenue is not serving the campus well.
- A strong pedestrian circulation system should be

- developed.
- Pedestrians are well accommodated inside the Ring Road, but improvement is needed beyond
- Pedestrians need weather protection, but the degree of protection might vary.
- Cycling facilities everywhere are in high demand.

University housing is good for students and the university

- University housing is a key element of the student experience, and offers valuable opportunities for student engagement and student development.
- Partnerships with private industry mean that new housing does not have to be on campus and can be developed with limited financial risk to the university.

The university's relationship to its neighbours is important

- Strong linkages to the surrounding community are important, and development at the urban edges offers many opportunities for strengthening the relationship with the city and improving the image of the university.

- The university's relationship with WLU provides opportunities for physical and academic growth. Development along University Avenue could support this relationship.
- Students from satellite campuses should feel welcome at the Waterloo Campus.

A new master plan is needed to guide the university into the 21st century

- The Campus Master Plan must be strong, flexible and actionable to have a positive impact on the campus.
- The master plan development process is very important, and should be recognized as an opportunity to change longstanding patterns, make big decisions and really improve the quality of the campus.



1.5 Challenges for Tomorrow

In addressing the broad range of issues and opportunities facing the campus, the campus planning process sought to balance various interests and resolve existing or potential conflicts among the different voices on campus and in the

larger community. While there were many challenges to resolve, the following challenges were identified early in the Campus Master Plan development process and were the most significant:

Tomorrow's Challenges

- *Accommodate new development and intensification without threatening the quality of the campus.*
- *Create a new interface with the city to enhance the image of the university and achieve mutually beneficial advantages.*
- *Achieve an appropriate balance of academic development on the South Campus while accommodating the variety of uses necessary for a properly functioning university.*
- *Reduce reliance on single occupant vehicles to achieve sustainability and reduce parking needs.*
- *Plan for complete integration of the planned rapid transit corridor through the Waterloo Region.*
- *Make the most of the university's landholdings on the South, North and Northwest Campuses.*



2

CAMPUS EVOLUTION

In the mid 1950's, Gerald Hagey and Ira Needles had a vision of how to respond to Canada's need for more engineers: a new engineering program based on the co-operative education model would be launched in Waterloo. Today that vision has proven successful. The University of Waterloo has thrived over its first fifty years, setting a strong foundation for new areas of growth. This chapter explores the university's history while looking forward to the future.



2.1

Campus History & Heritage

The University of Waterloo began its first classes in 1957 and from the start embraced a co-operative learning model. By 1962, the university's first graduating class of engineers entered the workforce and the Board of Governors purchased the 237-acre parcel of land that is now the South Campus. The North and Northwest Campus lands were acquired later that decade, but remained as agricultural land for many years to come.

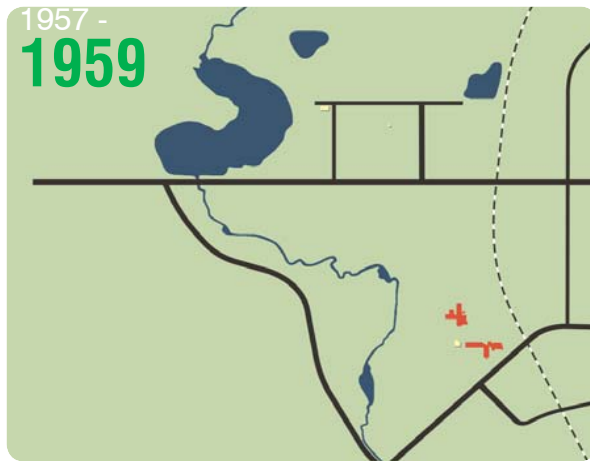
Though significant change to the campus landscape and growth defined the founding and early years of the university, there are historic elements that provide connections to past uses on the

site while contributing to the unique character of the campus. On the North Campus adjacent to the Environmental Reserve, the Brubacher House is all that remains of the Brubacher Farm that formed the North Campus. The Environmental Reserve itself represents the natural heritage that preceded even the agricultural uses on the site. The Schweitzer farmhouse, known to most as the Grad House, is a link to the past farming uses on the South Campus, but has also developed a history around its social functions. The Grad House stands out for the manner in which its simple and rural architecture contrasts with the predominantly modern university buildings.



Gerald Hagey with the first Campus Master Plan
Photo: University of Waterloo

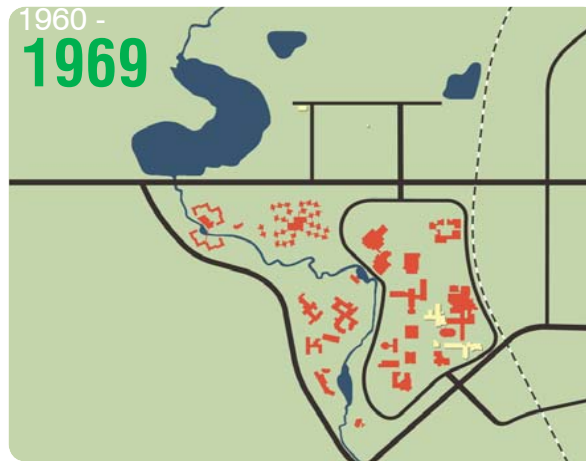
The Evolution of the University of Waterloo 1957-2009



A College on the Hill



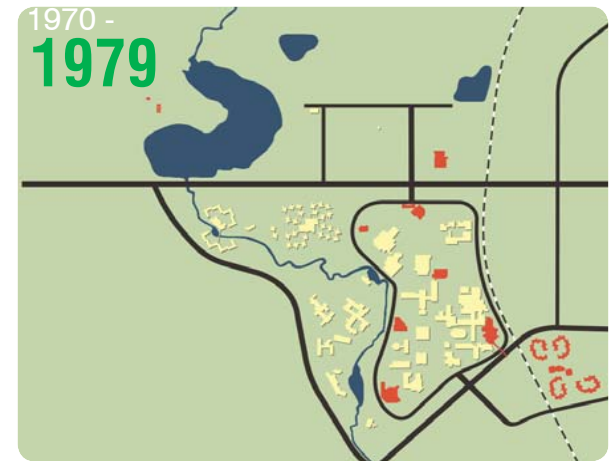
At the very edge of the fast-growing City of Waterloo and at the terminus of Dearborn Street, now University Avenue, the Chemistry and Chemical Engineering Building was the first building constructed on the new campus.



Building Boom



Tremendous growth in the 1960's saw a great number of university buildings constructed. Many of the buildings that define the present campus were developed, and the Ring Road became the organizing concept for the campus. At the same time, the federated university and affiliated colleges were established west of Laurel Creek.

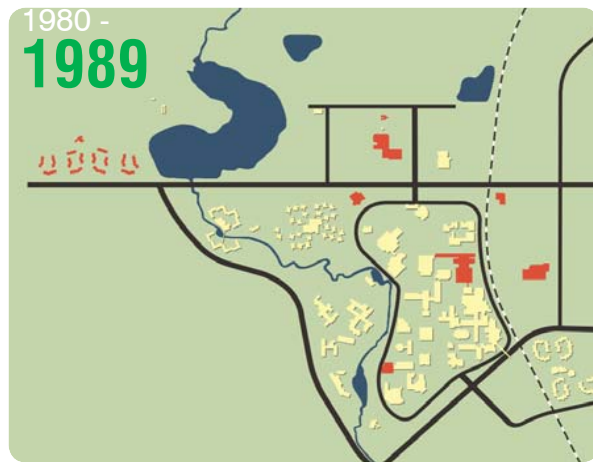


Steady Growth



Photo: University of Waterloo

The building boom slowed to a period of steady growth in the late 1970's as the university expanded to meet growing enrolment. With the South Campus beginning to fill in, the School of Optometry was located on the North Campus and the University of Waterloo Place residences were constructed south of University Avenue.

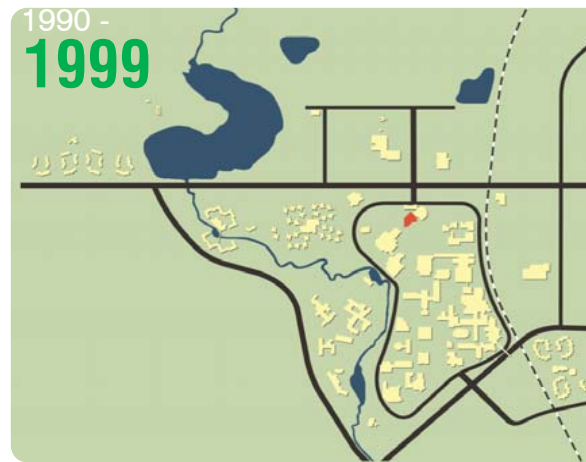


A Growing Footprint



Davis Centre

The 1980's were also marked by steady growth, and the edges of the campus were further stretched with development outside of the South Campus. The Columbia Lake Village residences represented the first expansion into the Northwest Campus, new administrative buildings were acquired east of the rail line, and the Columbia Icefield and related facilities were constructed on the North Campus.

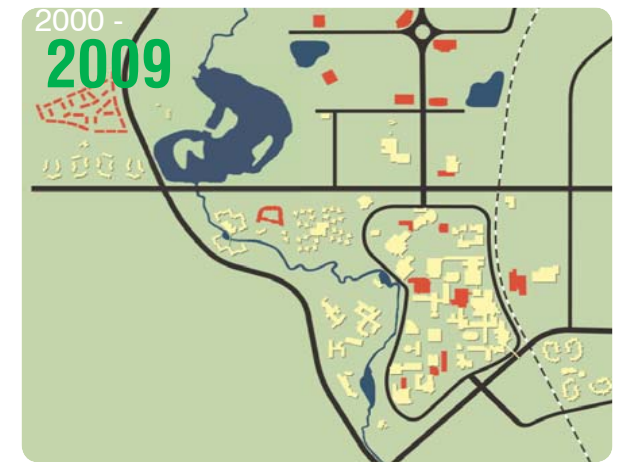


Slowdown



Lyle Hallman Institute

Though university growth slowed in the 1990's to reflect economic conditions, the 2000's marked a dramatic period of change. Pent-up need for academic space was alleviated by new construction, and significantly more growth is expected in the next five years to meet the strong continued need for space. New graduate housing expanded the footprint of the Northwest Campus, and additional housing is planned to the east of the campus. The North Campus Research + Technology Park has



The Next Boom



Quantum Nano Building
Rendering: KPMB Architects

rapidly emerged as a model for institutional and private sector research partnerships. The North and Northwest Campuses have become a mixing ground for university, private and public uses, with plans for a new public library and YMCA on the Northwest Campus. Growth has not stopped at the edge of the Waterloo Campus, as the emergence of the satellite campuses has dramatically changed the regional presence of the university in the 21st century.

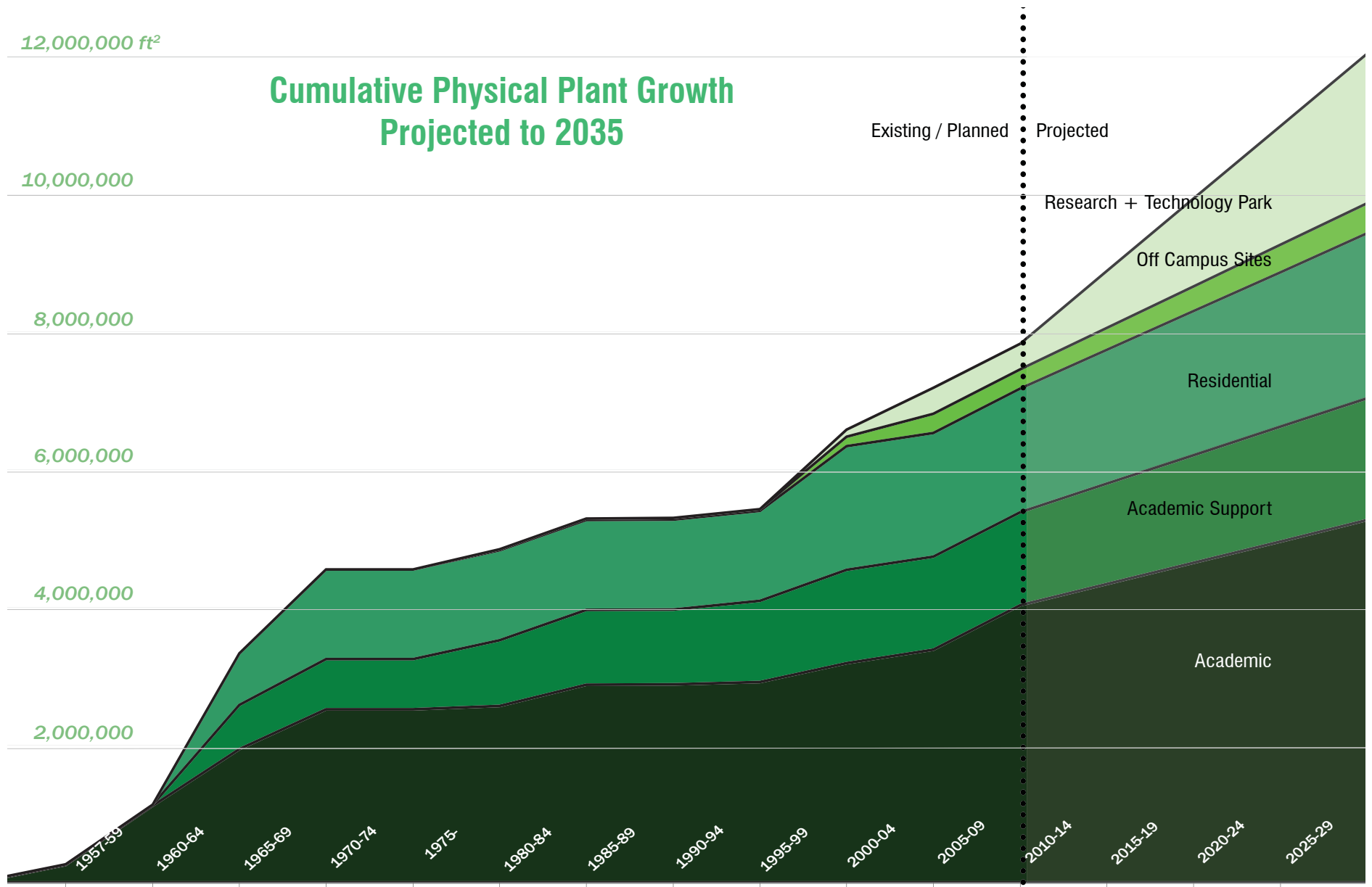


Figure 1 - This graph traces historic growth patterns since the university was founded in 1957. Growth forecasts are extrapolated based on historic trends from 1970 to present and do not include the initial growth spurt immediately following the university's inception.

2.2

University Growth to 2031

Continual university growth has led to a dense cluster of academic buildings inside the Ring Road. Increasingly, buildings are being located outside the Ring Road and outside of the South Campus. With little space left within the Ring Road to accommodate new academic growth, the university needs a new model for expansion to ensure future needs are met without compromising the quality of the existing campus.

Looking to the past for an understanding of what the future will hold, the university's *Sixth Decade Plan* anticipates significant growth in graduate students and moderate increases in undergraduates. Additional faculty and staff will be needed to meet growing enrolment and the new demands for research. It is expected that the university will need to accommodate over 1.5 million gross square feet of new academic and academic-related buildings over the next 25 years. This represents over one quarter of all the existing buildings on the South Campus, including the residences. Where and how this growth can occur is a key issue for the Campus Master Plan.

Based on historic averages and near-term anticipated needs, over the next 25 years the university may need to:

- **Accommodate 1.5 million ft² of academic growth**
- **Absorb 2 million ft² of research and technology growth**
- **Provide new student housing**
- **Develop new opportunities for off-campus/satellite growth**



3

THE UNIVERSITY AND ITS NEIGHBOURS

Today, core academic functions remain primarily within the Ring Road, but the university has expanded well beyond. The surrounding city is also growing and evolving, transforming through residential growth, commercial development and a major expansion of the technology industry in and around the university. The Region of Waterloo shows similar growth patterns, and with the planned regional rapid transit corridor has the potential to create a unified major urban centre. The university continues to be a key engine for economic vitality, as an educational institution, a technology driver, a social and cultural resource for Waterloo, a hub for satellite schools throughout the region, the steward of a large environmental reserve, a key landowner for one of the largest remaining undeveloped parcels in the region and a neighbour to many. This chapter explores the university's role in the greater community, now and in the future.



3.1

The University in the Community

The university is a key landowner in the city, and its physical presence is experienced most significantly at its edges, including University Avenue, Columbia Street and Phillip Street. In these locations the university faces out into the community, a face now characterized by surface parking lots. Peripheral parking lots represent most of the remaining development sites on the South Campus and in large part are placeholders for future development, providing opportunities to enhance the university's presence in the community. Within the campus, the university provides significant open space for public enjoyment, and important pedestrian, recreation and transportation corridors pass through the campus.

The proposed regional rapid transit corridor is expected to pass through the campus, creating a greater opportunity for development at key gateways on the periphery of the South Campus. This initiative will create opportunities to rationalize parking supply, demand and pricing, reflecting a momentum towards intensification that will be taking place throughout the

region. Potential rapid transit stations will be important hubs for the surrounding community and the university. These locations may be a focus for university growth, and will also be important nodes for housing and employment for the community. Partnerships with the city, region and private stakeholders may be explored to unlock the potential of the station areas. Important, too, are the linkages to Uptown Waterloo and its significant academic and research-related growth. The proposed rapid transit corridor will enhance these connections, providing greater opportunity for public access to the campus lands and amenities.

Student housing is a very tangible link between the university and surrounding communities. With thousands of students living near the Waterloo Campus in a variety of living arrangements, the university plays an indirect but powerful role in influencing the character and quality of its surroundings. This has become an issue in the area immediately east of the university, as students from both the University of Waterloo and Wilfrid

Laurier University compete for nearby and affordable housing that cannot meet the increased demands related to student housing. The sheer number of students and their often transitory lifestyles has impacted the quality of these neighbourhoods and led to conflicts with permanent residents and the City of Waterloo as a whole.

The university is committed to increasing on-campus or near-campus housing as a part of the undergraduate experience. Student housing provides further opportunities to extend the university's presence in the city. This includes opportunities for collaboration between the University of Waterloo and Wilfrid Laurier University to provide nearby housing while ensuring the quality and integrity of surrounding neighbourhoods.

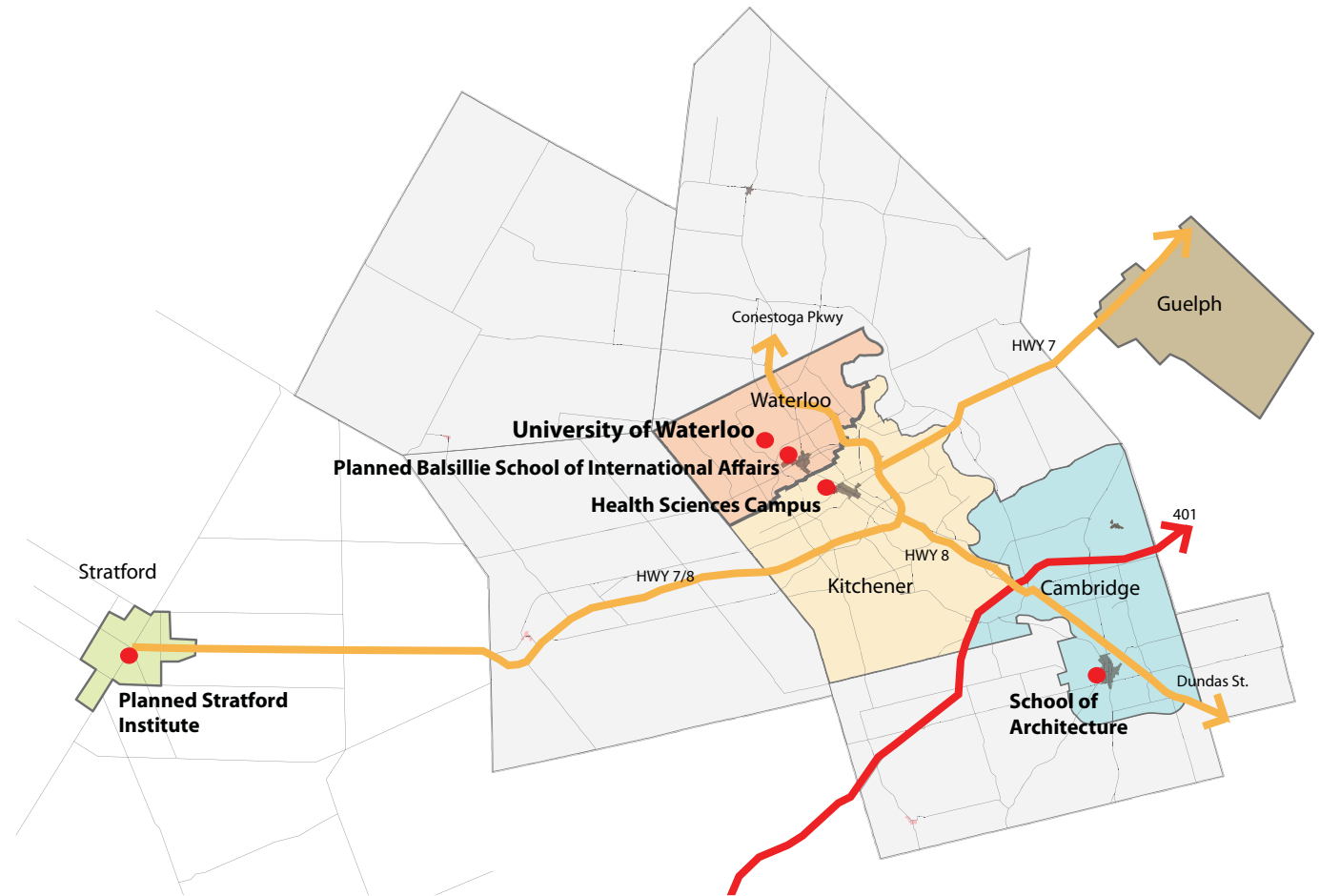


3.2

The University in the Region

The City and Region of Waterloo are growing rapidly. Forecasted to grow by nearly 35 and 60 per cent, respectively, over the next 25 years, the Kitchener/Waterloo/Cambridge of tomorrow will be dramatically different from what they are today. Employment growth is strong, and the booming high-tech sector has made Waterloo a key focus of Canada's Technology Triangle. The availability of development lands, however, is limited. Most of the city's and region's remaining greenfield lands for both residential and commercial development have been or will soon be built out, leaving the university's North and Northwest Campuses as one of the largest undeveloped areas in the region. A general land use strategy has been developed for the Northwest Campus, but the university must ensure that physical and programmatic connections to these uses are maximized to benefit both the university and the wider region.

With the rapidly growing R+T Park, the adjacent RIM campus, and emerging research centres in Uptown Waterloo, a spine of major employment extends from the R+T Park through to Uptown Waterloo. This employment corridor is also the proposed rapid transit corridor, which has the potential to cause a paradigm shift in movement throughout the region. With increased mobility, a wealth of employment lands, and the university as an economic and cultural centre, the campus and its surroundings will only continue to grow, drawing more students and employees. Students themselves will be increasingly mobile and less reliant on private cars.



Perimeter Institute (Waterloo)



Model of the Health Sciences Campus (Kitchener)



School of Architecture (Cambridge)

3.3

Satellite Campuses

Expanding its presence across the region, the university's satellite campuses include the School of Architecture in Cambridge, the proposed Balsillie School of International Affairs in Uptown Waterloo, the Health Sciences Campus in Kitchener and the planned Stratford Institute for Digital Media and Global Business. Commitment to the satellite campuses marks a structural change in the operating pattern of the university, one that in the future could have as profound implications as those of the co-op program.

These campuses will develop their own relationships with the communities in which they reside. They are expected to play a similar, albeit smaller, city-building role as the Waterloo Campus plays in the City of Waterloo. However, key academic functions depend on connectivity between the satellites and the Waterloo Campus.

Support facilities on the Waterloo Campus for satellite campuses will vary depending on the character of the core-satellite relationship, but may include requirements for transportation linkages, social facilities, work space, storage/locker space or other such amenities to service satellite students. Programmatic and research/teaching related functions will be important to strengthening these relationships.

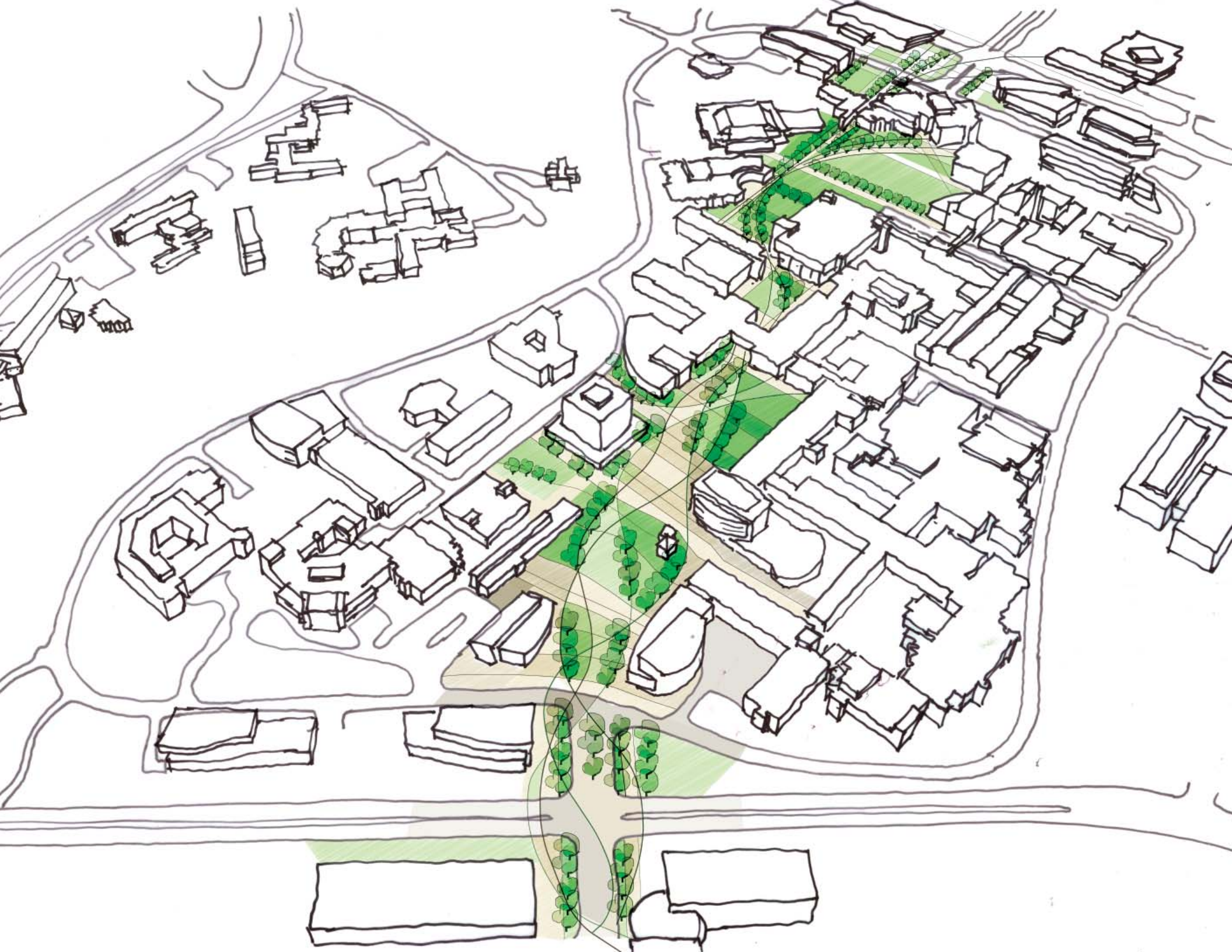
The Satellite Campuses

Existing/Under Construction:

- ***School of Architecture (Cambridge)***
- ***Health Sciences Campus (Kitchener)***

Planned:

- ***Balsillie School of International Affairs (Waterloo)***
- ***Stratford Institute for Digital Media and Global Business***
- ***Nanjing, China***
- ***United Arab Emirates***



4

A VISION FOR THE UNIVERSITY

The Campus Master Plan will provide direction for many years into the university's future. While this long time frame is marked by uncertainty, the Vision for the future of the campus sets out a clear and long-term framework for development. This chapter highlights the Vision from which the Campus Master Plan has been developed. Five Principles carry the Vision forward in further detail, and a series of Key Moves highlights the means for realizing the campus of the future.



4.1

The Vision

The Waterloo Campus of tomorrow will be an exciting place for learning and living. The intimate qualities of the academic core will be preserved, and new university development around the edges will see state-of-the-art, sustainable facilities that integrate with the existing campus fabric. The campus will be a unique environment for research and learning that draws and welcomes all by providing a seamless link between the university and the surrounding community. Gateways at the north and south entrances to the South Campus will offer amenities for members of both the university and surrounding communities and will reflect the status of a premier institution.

The South and North Commons will be great outdoor spaces and centres of campus activity, connected through a series of large and small open spaces. A pedestrian circulation spine will link many of these open spaces together along a central

corridor, enlivened by student services and other amenities. Pedestrian trails and bike paths will link the entire Waterloo Campus, providing enhanced connections from the surrounding communities and residences, rapid transit stations, parking structures and natural areas. Both the North and Northwest Campuses will be hubs for research and development and business, and will provide community members with opportunities to enjoy the natural environment and a variety of recreational facilities, fields and trails. The enhanced Laurel Creek corridor will be a naturalized greenway from the far reaches of the North Campus through to Uptown Waterloo. The East Campus Hall lands and private development along Phillip Street will offer a new model for living and learning – a mixed-use community with academic, residential, and retail uses shared by the university and city.

4.2 Principles

The Vision for the University of Waterloo represents the campus of the future. The following Principles describe in more detail how the Vision will be achieved through the Campus Master Plan and key decisions that the university will face in the coming years. The Principles were derived in part from consultation with the university community and through discussions with the steering committee, but are also firmly rooted in the overarching principles of the 1992 Campus Master Plan, which remain relevant today.

Principles from the 1992 Campus Master Plan:

- *An Environmental Orientation*
- *An Open-Ended Framework for University Growth*
- *An Enhanced Relationship between the University and the City*
- *A Strong Sense of Place*



1. The South Campus will be the focus for future academic growth, but increasingly outside the Ring Road.

Over the past five decades, the South Campus has grown from a farm at the edge of the city to an expansive campus, nearly filling the Ring Road and in many areas extending well beyond. Recent academic development has focused intensification within the Ring Road, filling in many of the remaining development parcels and incrementally encroaching on functionally and aesthetically important open spaces. Students, faculty and staff all want to be located at or near the heart of the campus.

Academic, and consequently physical, growth are critical to the university. Well situated to absorb significant growth over the coming decades, the South Campus will continue to be the heart of the campus. This is where members of the university community will come to teach, learn, research and play, supporting the core academic mission of the university. New development will expand the perceived boundaries of the South Campus and broaden the area considered to be the academic core. The outer edges of the Ring Road promise large parcels for new development and university expansion. New development will change the face of the university from an inward focused institution to one that is integrated with the surrounding community yet retains the campus character that makes this place special.



2. The university will invest in buildings and open spaces to create a high quality and welcoming environment, especially on the South Campus.

A university is more than a collection of classrooms and labs where students come to learn. The Waterloo Campus is an integrated system of buildings and open spaces that function together as a learning environment and serve an entire community. Thousands of members of the university community come here every day to study, work and play, and, to many students, the university is their home. The quality of the campus landscape, however, does not adequately reflect the importance of the university as an institution and the physical campus as its primary identity.

The setting and image of the University of Waterloo will be maintained and enhanced to create a high quality environment for the university community, prospective students and visitors. A focus on placemaking will guide renewal of existing landscapes and buildings as well as new growth and development. Significant investment will be made in the varied landscapes of the South Campus to enhance the setting for new and existing buildings, and new construction will be held to high standards of design. On the North and Northwest Campuses, university and private development will seek to embed high quality buildings within a distinctive landscape, with a focus on the natural character and quality of the surroundings.



3. The Waterloo Campus will be pedestrian-oriented, accessible and connected, both internally and to the surrounding community and region.

The South Campus has a strong pedestrian orientation, in large part due to the absence of roads cutting through the core of the campus. However, areas outside of the Ring Road are less amenable to pedestrians and cyclists, especially in the North and Northwest Campuses, and connectivity beyond the edges of the campus is not ideal. Transit access serves students well from certain parts of the city, but the regional transit system is limited.

Pedestrian and cycling connections will be extended across the entire Waterloo Campus, and vehicular traffic will be managed to provide a safe and pleasant environment for people. New paths and corridors will improve connectivity to all areas of the Waterloo Campus, and critical junctures where pedestrians and vehicles interact will be enhanced. Pedestrian and cycling connections beyond the campus and into the community will be strengthened and improved to provide access to the resources and amenities outside university lands, to make the campus a destination for City of Waterloo residents and to weave the university into the greater community. Transit improvements will do the same, integrating the university and the city to expand mobility options while reducing impacts of large transit vehicles on the campus.



4. Environmental stewardship and sustainability will be defining features of campus development.

The natural environment plays a defining role in the character of the campus, from the Environmental Reserve in the North Campus to the pastoral Laurel Creek corridor that runs through the South Campus. This character can be better represented in developed areas on the South, North and Northwest Campuses, and landscape and infrastructure systems made appropriate for the natural environment. Many buildings, and especially older buildings on the South Campus, have not been designed for environmental performance.

The character of the existing natural landscapes will be reflected in the environmental orientation of the university, both in the design and maintenance of diverse campus landscapes and the design of new buildings. New buildings will be built to high environmental standards to ensure sustainability in both construction and long-term performance, and a systems-based approach to infrastructure, including storm water, will ensure sustainable performance for the entire campus. The university will reduce car trips to the campus by promoting alternative modes of travel and providing housing close to campus. The Waterloo Campus as a whole will strive to serve as a living laboratory for sustainability, incorporating environmental, social and economic factors into decision-making processes.



5. The university will become a more integrated part of the City of Waterloo.

The university has been enveloped by a rapidly expanding urban environment. Alongside university growth and intensification, the city has continued to grow and intensify, with significant intensification anticipated in the future. However, the boundary between the university and the city remains clear.

The Waterloo Campus will grow toward its edges, extending its presence into the urban environment of the city. Building sites at the boundary of the campus and the city will create an outward-facing campus, forming part of a more complete community and creating new opportunities for teaching and research, eating, entertainment and movement. The surrounding community will have enhanced access to the natural features and recreational amenities of the North and Northwest Campuses, and will benefit from a better connected South Campus that engages and welcomes visitors.

4.3

Key Moves

Implementation of the Campus Master Plan will be a comprehensive effort by all academic and administrative units within the university through many and varied decisions over time. However, a series of Key Moves will set out the framework for long-term implementation, ensuring successful attainment of the Vision for the Waterloo Campus. Through early support of the direction established by these Key Moves, the university can proceed easily toward implementation of the Campus Master Plan as a whole.



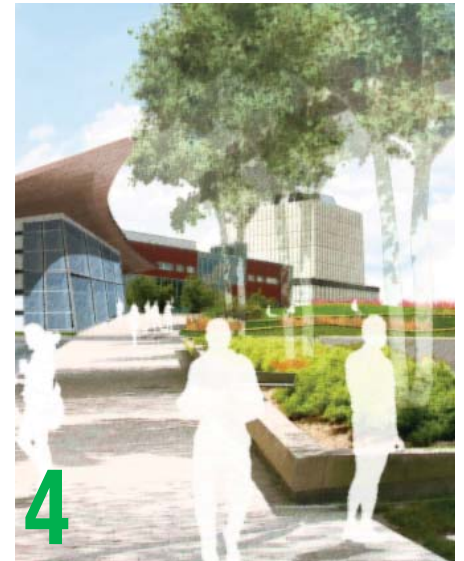
Develop a north-south circulation spine through the South Campus as a wayfinding device, a focus for enlivening open spaces and public uses, and a common space for all people on the campus.



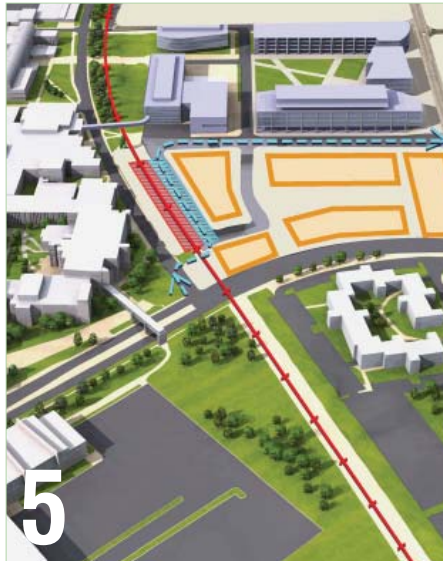
Develop a comprehensive network of landscapes and open spaces, and invest significantly and early on in key landscape initiatives on the South Campus.



Direct some new growth to the periphery of the South Campus to improve connections to the city and preserve open space within the Ring Road.



Create new campus gateways to the south, north and east, framed by prominent new buildings and enhanced open spaces, and with an improved sense of arrival for visitors travelling by car, transit, bicycle or on foot.



Work with the Region of Waterloo to successfully integrate any rapid transit initiatives into future campus development.



Create a new university mixed-use community with the redevelopment of the East Campus Hall lands and the renewal of Phillip Street.



Develop a comprehensive pedestrian and bicycle trail network that seamlessly links the South, North and Northwest Campuses, and improves connections beyond the edges of the university into the surrounding community.



Implement a comprehensive transportation demand management program and begin to accommodate parking in centrally located structures.



5

THE WATERLOO CAMPUS

The Waterloo Campus is a city within a city, with residential areas, employment and various services that meet the needs of its many users. Composed of the South Campus, North Campus and Northwest Campus, and with over 30,000 students, faculty and staff, many visitors and thousands of Research + Technology employees, the university has the population of a small city. This chapter clarifies the planning framework for the Waterloo Campus, outlining natural area protection, appropriate land uses and an overall framework for movement within the 1000-acre university.





Figure 2: The Waterloo Campus natural features and landscapes

5.1

Natural Features & Landscapes

The university is a key landowner in the city, providing significant open space for public enjoyment and important pedestrian, recreation and transportation corridors that pass through the campus. The open space system and natural features are a defining element of the Waterloo Campus. The largest element of this system follows the Laurel Creek corridor from the Laurel Creek Conservation Area in the north to Waterloo Park, south of University Avenue. In the North Campus, this area is recognized as the Environmental Reserve and plays a key research role.

Adjacent to the increasingly developed North Campus, the Environmental Reserve complements and provides relief from the built environment. Its open and natural character provides respite for members of the university community and supporting uses ranging from athletics and recreation to leisurely contemplation. The Environmental Reserve also plays an important role in the City of Waterloo's open space system and is integrated with the city's trail system and the Trans-Canada Trail network. Coexisting with recreational activities, university teaching and research will continue to be the primary purpose of the Environmental Reserve.

Many areas of the Waterloo Campus beyond the Environmental Reserve play a similarly important role in the open space

system, including the landscapes of the South Campus and the future parks and open spaces in the Northwest Campus. These spaces contribute to the enjoyment of campus and play a role in natural functions, such as habitat and storm water management, and should be enhanced and expanded.

As the Waterloo Campus continues to develop, especially in the North and Northwest Campuses, the natural features and open space network will be increasingly important elements of the campus landscape. Campus open spaces are also a focus for research, and care should be taken to balance university uses with the ecological functions of these areas.

Directions:

- Maintain and enhance the Environmental Reserve as the primary open space on the Waterloo Campus. Enhance secondary open spaces to create a unified network of open spaces and natural areas.
- Encourage sound ecological management for open space areas while balancing the needs of users.
- Enhance public access to the open space network to maximize its potential.
- Where appropriate, support the use of open spaces for compatible research, agricultural and related uses with an emphasis on uses that promote sustainability.

Initiatives

- Employ natural landscaping in open spaces throughout the campus. Areas to be renaturalized should be identified comprehensively through an ecological management plan, and should include open spaces adjacent to or near Laurel Creek, such as the Village Green, and new development on the North and Northwest Campuses.
- Create a trail development and management strategy to maximize connections to and within the Environmental Reserve while protecting its ecological integrity.
- Continue to implement recommendations from the environmental assessment for the Environmental Reserve.
- Conduct an ecological assessment to determine appropriate locations for future land-based research and agricultural uses throughout the Waterloo Campus.
- Develop a strategy for alternative energy generation in the Environmental Reserve and other undeveloped areas on the campus, including guidelines for siting, technologies, size and overall impact.

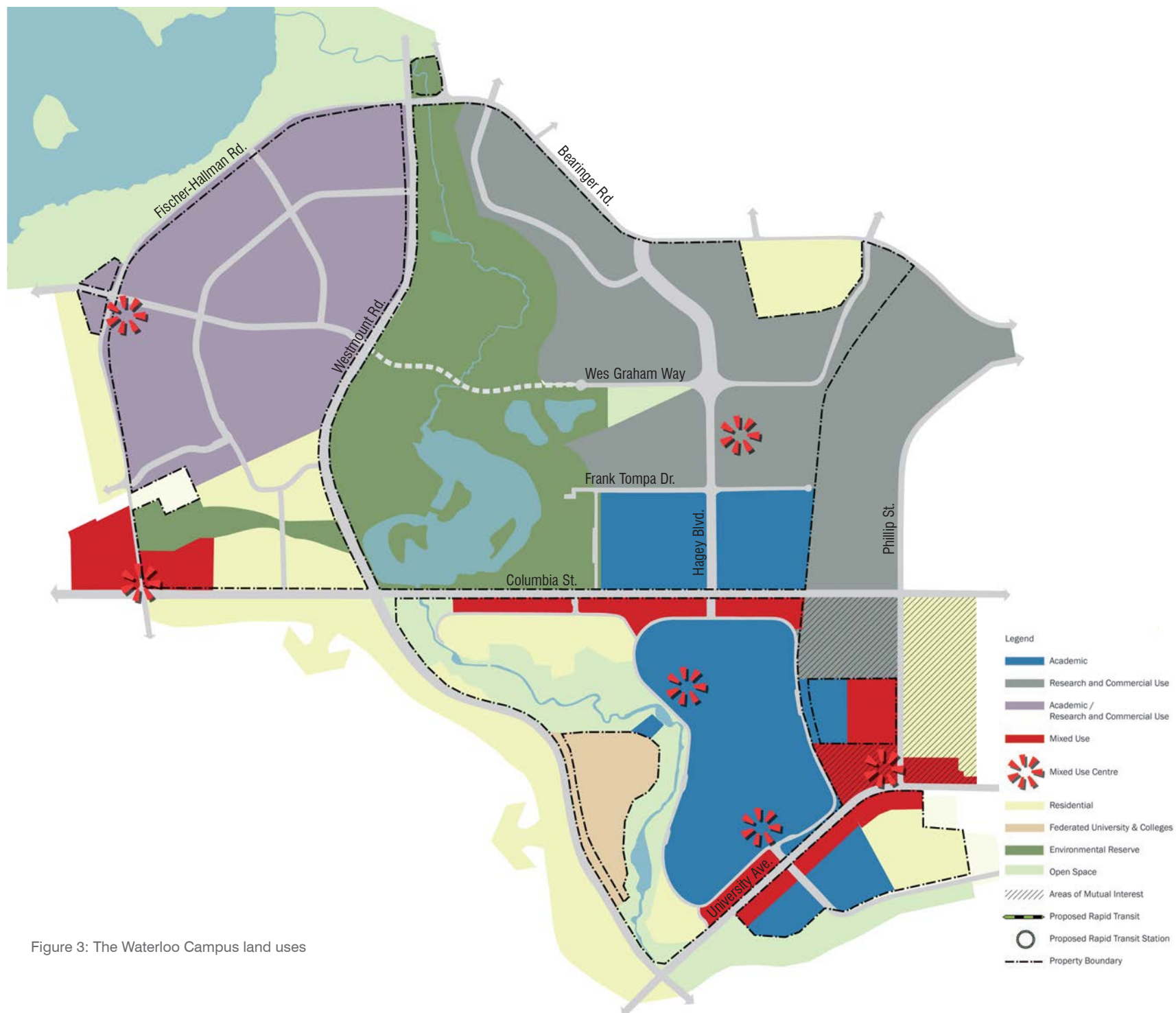


Figure 3: The Waterloo Campus land uses

5.2

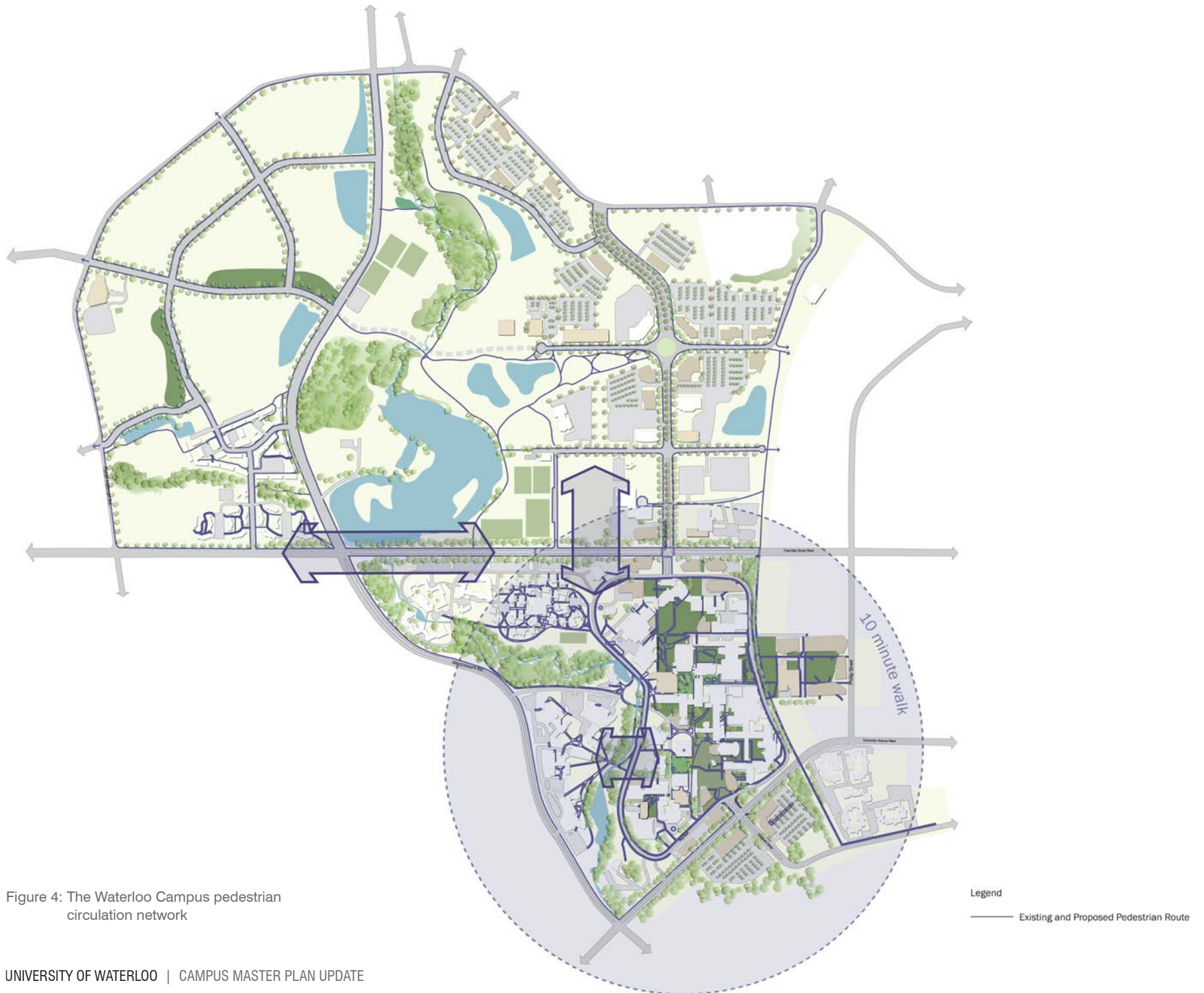
Land Use

With a population of over 30,000 students, faculty and staff, the university accommodates a variety of residents, employees, students and visitors. The North Campus R+T Park and planned YMCA and public library on the Northwest Campus also bring employees and other users to the campus. Users have many varying needs and demand certain facilities, including teaching space, research labs, apartments, offices, restaurants and services. Not all uses are appropriate in the academic core, and many areas of the campus are best suited for non-academic uses.

The plan shown on the facing page outlines an overall framework for land uses on the Waterloo Campus. The South Campus will remain the academic core, with future academic growth expanding beyond the natural boundary of the Ring Road. A mix of uses are planned at the edges of the city, with an emphasis on academic uses. There are opportunities to expand residential uses into the area of mutual interest along Phillip Street. On the North Campus, R+T uses will be extended north to Bearinger Road. North of the existing residences, uses for the Northwest Campus are undetermined but could include university or research and technology. A variety of mixed use centres provide a focal point for users and resources that serve the needs of the campus community, including restaurants, retail, student services and community support facilities.

Directions:

- East of the South Campus on Phillip Street, high density university housing will be part of a larger mixed-use community, enabling a sustainable lifestyle for students while enhancing the quality of the neighbourhood.
- R+T will be the dominant use north of Frank Tompa Drive. Some university functions may be considered in this area, but must be compatible with surrounding uses.
- South of Frank Tompa Drive is intended for university uses with a focus on recreational and university-support uses.
- The residential area in the Northwest Campus will remain and further residential intensification in Columbia Lake Village South may be considered.
- The Northwest Campus has the potential for both university and R+T uses. Academic uses should be limited to research institutes and schools that are not reliant on proximity to the academic core.
- Each mixed use centre should be tailored to fit the needs of its primary users.



5.3

Pedestrian & Cyclist Movement

Every trip, whether by car, transit or bicycle, begins and ends as a pedestrian. While the area inside the Ring Road has always been accessible for pedestrians, real mobility and walkability rely on connections beyond the academic core. Recent growth has pushed development well beyond the Ring Road and beyond the traditional 10-minute walking radius from the Dana Porter Library (considered the academic centre). The North and Northwest Campuses are at a lesser density than the South Campus and are less accessible for pedestrians and cyclists. Further, as the city continues to intensify, new uses and amenities are emerging nearby in areas such as Uptown Waterloo that should be accessible to the university community.

Generally, the Waterloo Campus road network is effective at minimizing and partially slowing vehicular traffic, creating a more accessible environment for pedestrians and cyclists. Pedestrian and bicycle connections on and around the South Campus are fine-grained and effective. The Trans Canada Trail that follows the rail corridor to Uptown Waterloo provides a strong connection to the south. However, on Westmount Road, intermittent sidewalks limit accessibility for many students.

On the North Campus, existing sidewalks, trails and bike lanes are effective and will be expanded with new development in accordance with the 2002 Development Handbook and

Guidelines (see chapter 7). The Trans Canada Trail along the rail corridor connects through to the Environmental Reserve trails on the North Campus, forming an important resource for the community. The circulation network on the Northwest Campus is currently limited to the developed residential area in the south, but a new pedestrian and cyclist network is planned to connect through the Environmental Reserve and up to the Laurel Creek Conservation Area (see chapter 8).

Directions:

- Improvements to the pedestrian and cyclist network will depend on the evolution of the university and evolving movement patterns. Safety and convenience are the primary concerns that should be addressed.
- Connectivity improvements between the South, North and Northwest Campuses are vital to the successful integration of the Waterloo Campus. Wherever practical, pedestrian and cyclist connections between the three campuses should be enhanced and expanded. The university should encourage similar conditions in city and region rights-of-way in areas surrounding the campus.
- Accessibility for people with disabilities should be a primary goal throughout the Waterloo Campus.
- Pedestrian connections will be enhanced through the addition of sidewalks, trails and bike lanes throughout the North and Northwest Campuses.

- Pedestrian crossings at arterial streets should be enhanced through lighting and sidewalk improvements.
- An adequate supply of bicycle parking spaces should be provided in convenient locations throughout the Waterloo Campus.

Initiatives:

- A sidewalk should be completed on the east side of Westmount Road south of the Health Services Road.
- Shared sidewalk and bicycle connections across the rail line should be developed where feasible to link the North Campus to the RIM campus and Phillip Street.
- Pedestrian crosswalks on Columbia Street between the South Campus and North Campus should be explored with the city, with two potential locations immediately west of the rail line and at the vehicular entrance to Student Village 1.
- Existing trails through the Environmental Reserve should be maintained, and a new trail link to the Northwest Campus should cross Laurel Creek near the planned sports fields in conjunction with a campus bus circulator bridge.
- With the build-out of the Northwest Campus, pedestrian connections to the existing residential and retail areas along Fischer-Hallman Road should be explored, as should a crosswalk to the south entrance of the Laurel Creek Conservation Area.



Figure 5: The Waterloo Campus vehicular movement network

5.4

Vehicular Movement

The Ring Road is one of the defining features of the university, setting the campus apart from the surrounding grid network and clearly defining the South Campus as a unique place in the city. The North Campus road system is similarly unique in terms of its structure, a central spine with terminating ribs, and its function, incorporating roundabouts and bicycle lanes.

In both the South and North Campuses, the unique street network plays an important role in minimizing traffic. Generally, the road network effectively moves vehicles around the Waterloo Campus and does not require change. However, the south entry to the South Campus is constrained and has a high degree of pedestrian and vehicular conflict. An entirely new road network has been planned for the Northwest Campus which will create stronger connections to its surroundings and support a proposed campus bus circulator.

Parking on the Waterloo Campus is plentiful, with large surface lots surrounding much of the South Campus. In the North Campus, large parking lots for non-university users dominate the landscape. Large parking lots generally have a negative impact on the campus landscape and ecology, and limit development and open space potential. From an environmental and financial perspective, vehicular traffic to the campus should be minimized to the benefit of walking, cycling and transit

use. Given the various users and the diversity of the Waterloo Campus environment, there is no single strategy to reduce vehicular travel to the campus and resulting parking.

University Avenue, Columbia Street and Phillip Street are at the edges of the South Campus but do not reflect its pedestrian qualities. These streets are the focus of university development and provide an important link to the city. More than just traffic movers, the quality of the streetscapes should be improved to accommodate pedestrians and cyclists, reduce traffic speed and create a more urban character.

Directions:

- Traffic calming measures throughout the Waterloo Campus should be encouraged to maintain a safe environment for pedestrians and cyclists, and to limit cut-through traffic.
- The university should work with the city and/or region to improve the quality of University Ave., Columbia St. and Phillip St. through streetscaping and traffic calming measures, and promotion of cycling, transit and walking.
- Parking for university uses will be reduced in conjunction with a transportation demand management program and in the future may be accommodated in parking structures.
- On the North and Northwest Campuses, parking for new developments should be minimized and provided in shared

lots. Large parking lots should be avoided. Opportunities for intensification and redevelopment through consolidation of excess parking areas should be explored.

Initiatives:

- The campus entrance on Phillip Street should be formalized to link the East Campus Hall lands to the Ring Road.
- Vehicular movement at the south entry to South Campus should be reduced or the entry reconfigured to reduce pedestrian/vehicular conflict and improve traffic flow.
- Large surface parking lots throughout the Waterloo Campus should be divided into smaller lots through landscaping to reduce visual impacts and improve natural functions.
- Where feasible, on-street parking can be considered on some portions of campus roads as a means for providing additional short-term parking and calming traffic.
- Develop a “carrot and stick” system for reducing the parking demands for new non-university developments, including potential inclusion within the university’s transportation demand management program.
- Implement a campus bus circulator to serve all of the Waterloo Campus. The circulator should be an alternative fuel vehicle and operate on a high frequency, and can be achieved through a partnership with Grand River Transit.



6

SOUTH CAMPUS



The heart of the university is and will continue to be the South Campus. This is where academic excellence is bred, where research collaboration is fostered and where campus life creates the University of Waterloo experience. To maintain the strength and integrity of the university, academic growth will continue to occur on the South Campus. This chapter provides direction specific to the South Campus that will ensure the quality of the campus and the university experience will be enhanced with new growth and development.

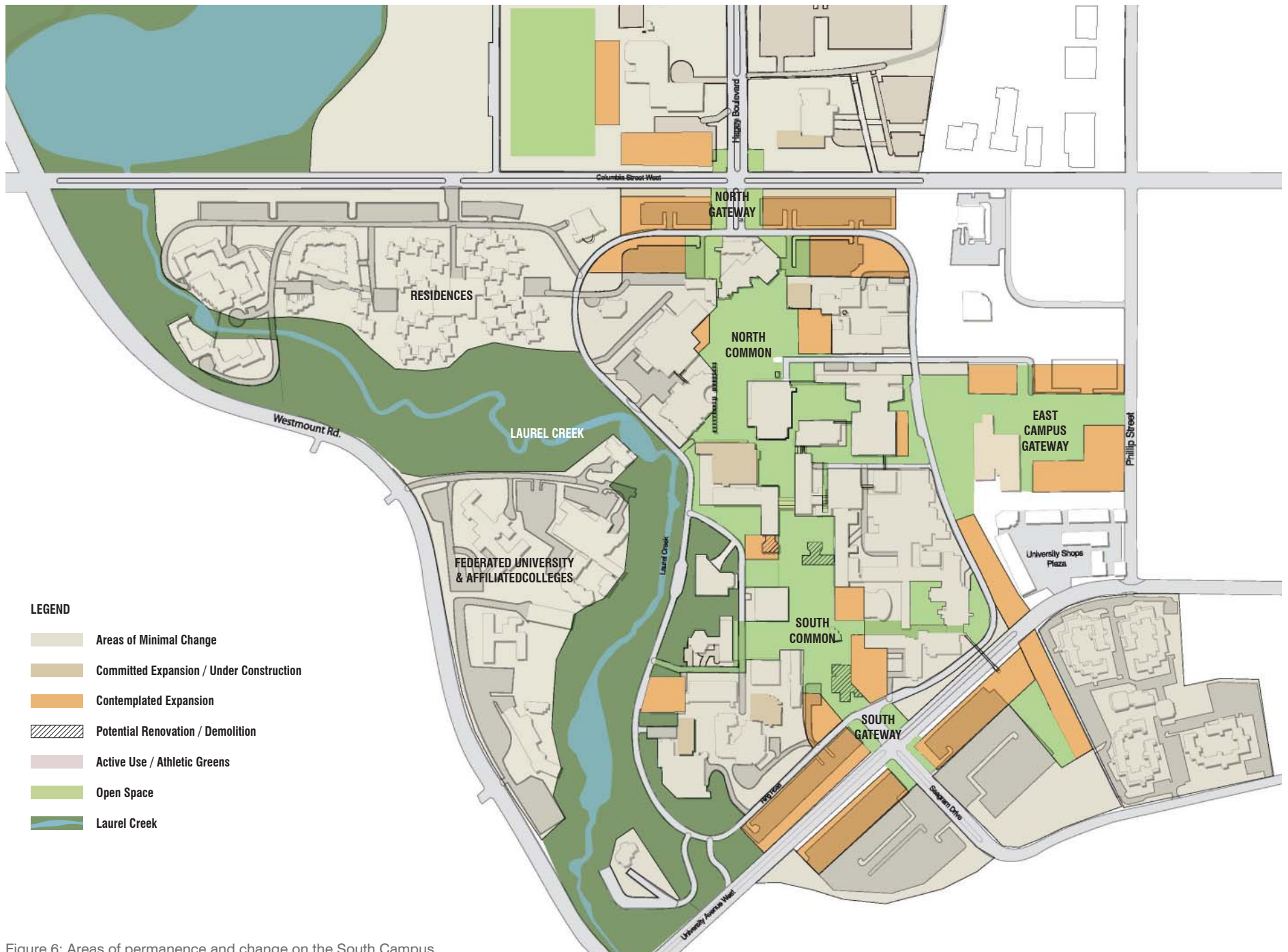


Figure 6: Areas of permanence and change on the South Campus

6.1

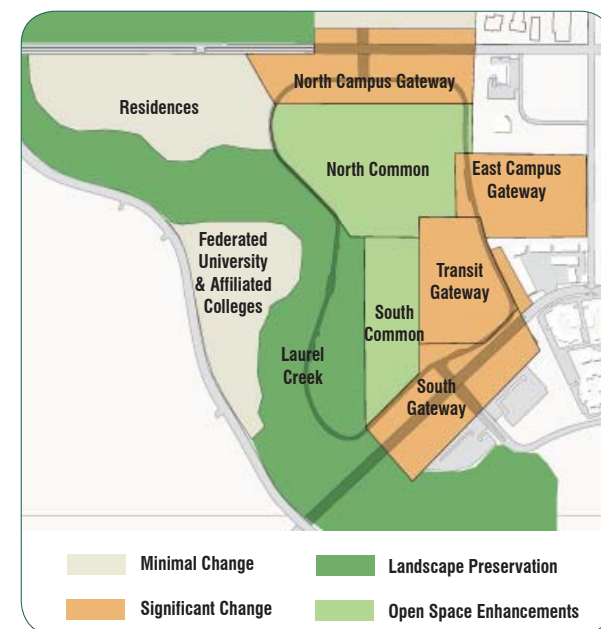
Identifying Areas of Permanence & Change

To accommodate growth and ensure a more sustainable campus, a number of areas of the South Campus will experience change. Conversely, there are areas of the South Campus that should not experience significant development. In addition to fulfilling its need for new built space, the university must invest in improving existing open spaces, developing new open spaces and preserving its existing built resources.

By directing the bulk of future development to the edges of the South Campus, the master plan protects the valuable Laurel Creek landscapes and existing open spaces within the Ring Road. Where significant change is planned, the master plan fits development sites and open space improvements together, relating the scale of proposed buildings to adjacent open spaces to minimize overshadowing, maintain or strengthen circulation routes and preserve the character of each place.

Directions for identifying areas of permanence and change

- *protect Laurel Creek and adjacent lands*
- *minimize development within the Ring Road to protect and improve the quality of open spaces*
- *add to existing buildings where it makes sense*
- *direct new development to the edges.*



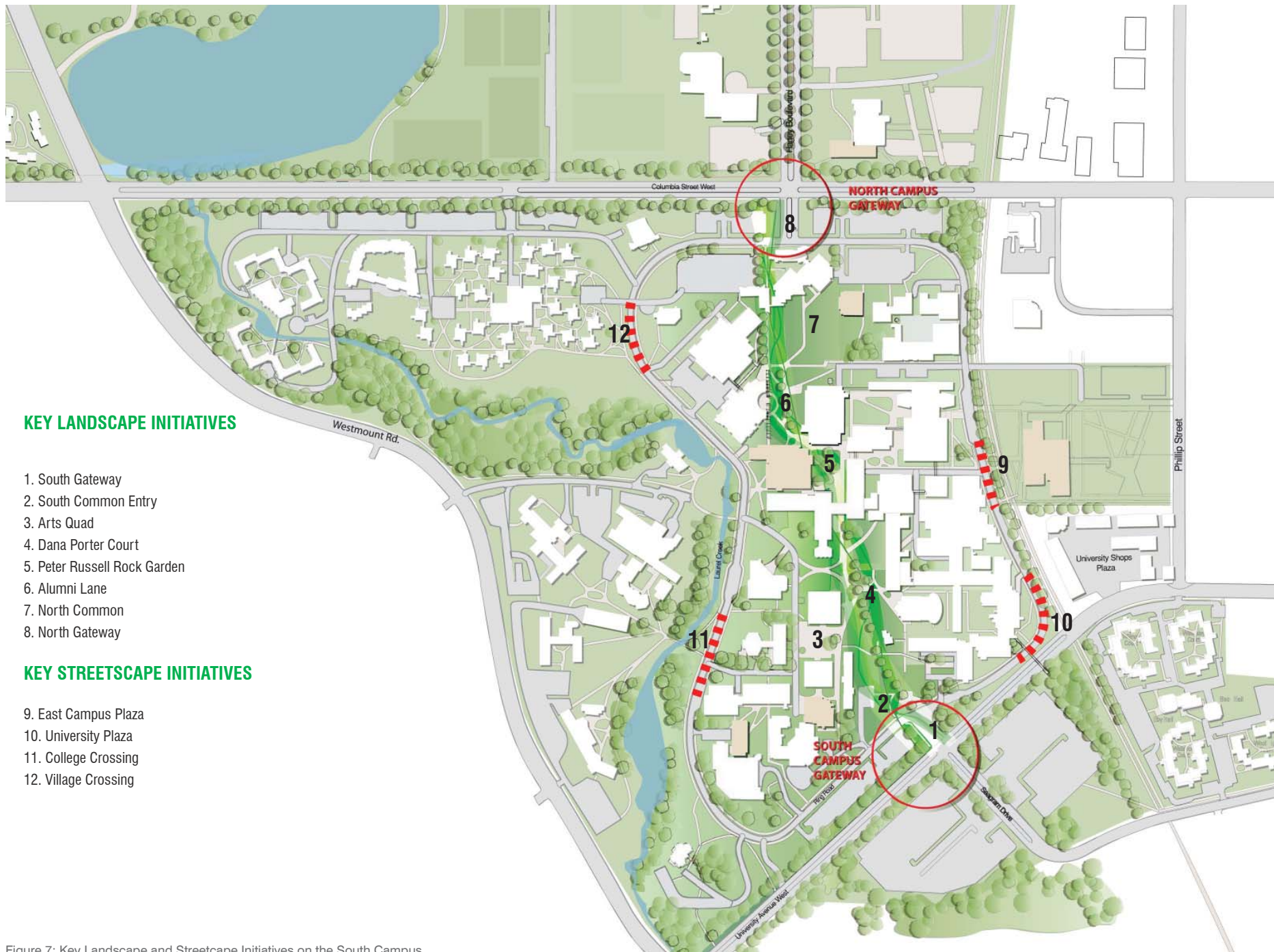


Figure 7: Key Landscape and Streetscape Initiatives on the South Campus

6.2

Enhancing Landscapes & Open Spaces

The natural beauty of the university's pastoral setting strongly influences the physical structure and experience of the South Campus. In response to its setting, the campus has developed a more urban side to the east addressing the city, allowing the more naturalistic western side to flourish with few buildings approaching the banks of Laurel Creek.

Moving eastward away from the creek, a landscape of gently rolling hills transitions to a more formal collection of constructed open spaces. Within and adjacent to the Ring Road, this diverse set of quadrangles, commons, courtyards and paths weaves together with buildings to form the physical structure of the campus. Despite this strong framework, the open space network lacks coherence as a whole, and new construction threatens to further fragment the overall experience of the campus. There is potential for a comprehensive and connected network of active and animated places, combining existing, enhanced and new open spaces.

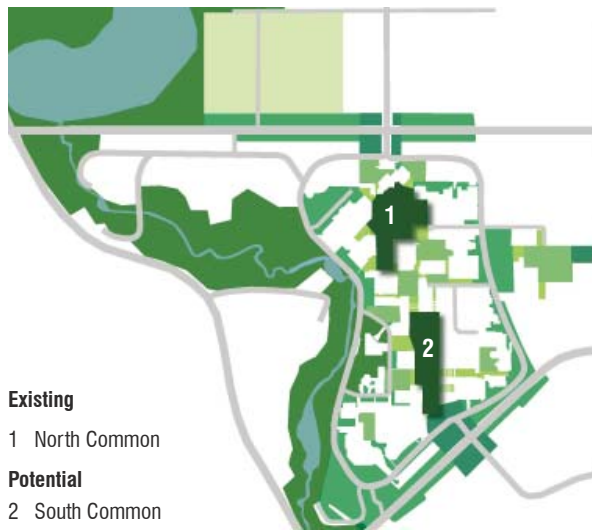
Key Landscape Initiatives

Eight landscape initiatives will link the varied and disjointed landscapes within the Ring Road into a cohesive whole. The initiatives will accommodate a variety of uses, woven together by an integrated landscape design that visually and functionally connects open spaces into an active greenway along the pedestrian circulation spine. Each initiative is linked to the others through consistent application of materials and textures to unify the campus landscape.

Four additional streetscape initiatives will bridge the Ring Road to link the edges of the South Campus to the academic core. These initiatives will create seamless links across the Ring Road to existing and emerging destinations on the outskirts of the South Campus, reducing the barrier effects of the Ring Road and calming traffic within important pedestrian zones.

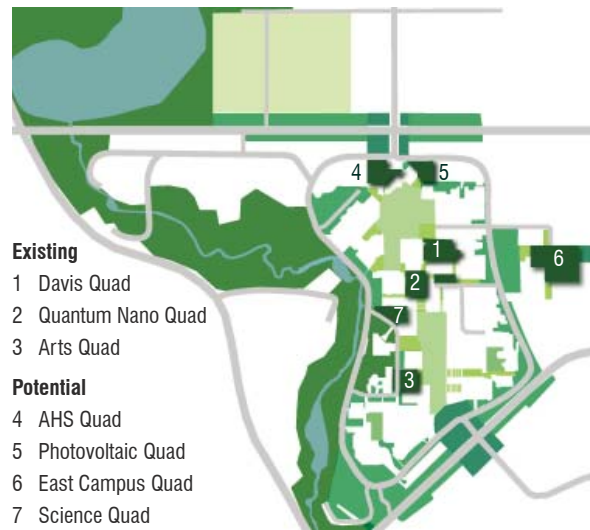
Directions for landscapes and open spaces:

- *Enhance the quality and sustainability of natural systems*
- *Create visual and functional connections between the natural Laurel Creek setting and neighbouring campus areas*
- *Enlarge and enhance the formal pattern of open spaces*



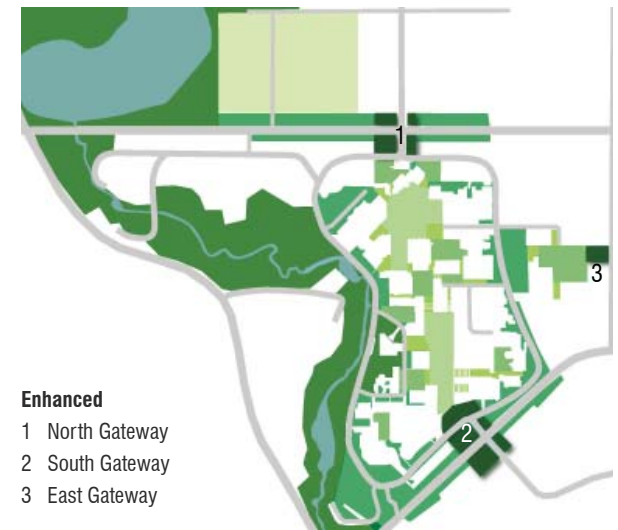
Common

The two commons are the most important open spaces on the South Campus. North Common is enlivened by its central location and is the only place large enough for outdoor recreation within the Ring Road. South Common is also an active central open space. Both commons have great potential for further enhancement of their utility, quality of landscape and connections to other campus destinations.



Quads

Waterloo's quads consist of a simple continuous space crossed by pathways, surrounded by buildings and often a consistent tree canopy. Many have become associated with the identity of neighbouring academic communities, such as engineering, mathematics and computer science. However, quads can also serve as a nexus of activity and movement for the wider university community throughout the year. As buildings are programmed, locating public uses at grade level and providing visual and architectural connections will enliven the quads.



Gateways

Gateways mark the thresholds between the university and the city. They support the identity and image of the university, enhance the visitor experience and assist in way-finding. Not all gateways are equal, however, and each requires different treatment depending on the character of the surrounding landscape. Three gateways border the South Campus, each with its own identity and relationship to the surrounding context. Effective deployment and massing of new buildings, landscape and patterns of movement will reinforce a clear spatial identity.



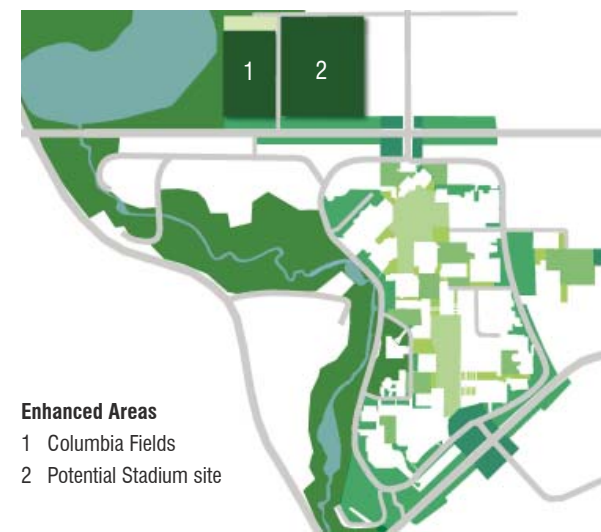
Interstitial Areas

Interstitial spaces weave through the campus, forming the connective tissue of the landscape. As the spaces between buildings, streets, gates, and walls, they respond to the irregularities of the surrounding architectural environment. With campus intensification, these spaces play a crucial role by creating a seamless visual and functional continuity between campus character areas. As such, proposed building connections, including covered walkways and pedestrian bridges, should be designed to preserve this continuity between open spaces.



Frontage

Frontages are the lands between buildings and streets, and are typically found at the perimeter of the South Campus, adjacent to the Ring Road. At their best these landscape types act as buffering and area-defining devices for the different character areas. This role is particularly important where the South Campus addresses public streets, as at the South and North Gateways.



Enhanced Areas

- 1 Columbia Fields
- 2 Potential Stadium site

Athletic Fields

Waterloo's expansive athletic fields adjacent to Columbia Lake accommodate a wide range of sports, including soccer, football and baseball, and contribute to the open space network. Currently used for informal sporting events and gatherings, there is potential to build a permanent outdoor stadium to accommodate recreational and team sports.

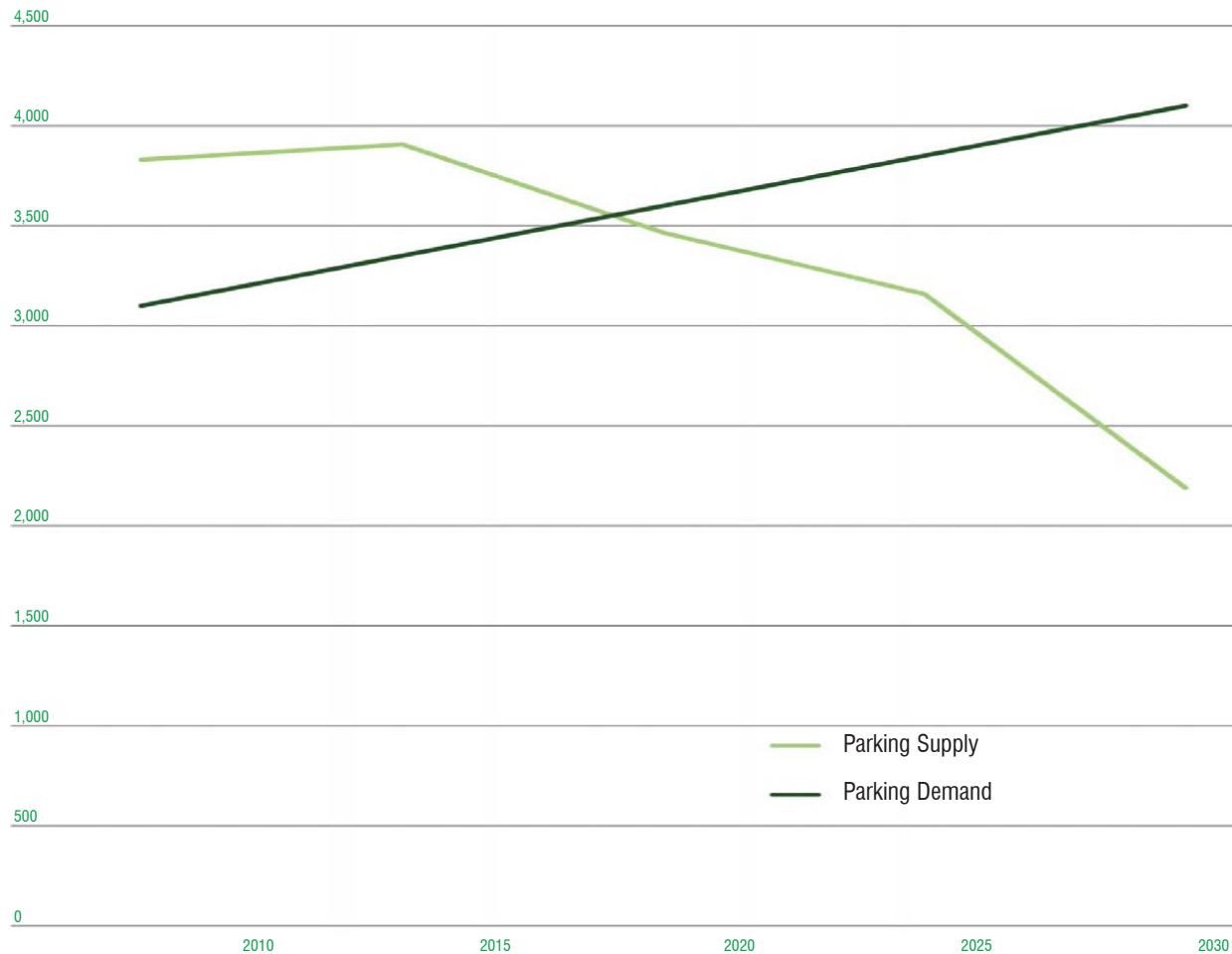


Figure 8: Peak parking demand vs. supply (staff & student lots)

Parking supply is shown in light green, highlighting future reductions in supply due to development on surface parking lots. Anticipated demand (dark green) assumes aggressive growth. Even without a transportation demand management strategy, current parking supply will continue to be sufficient for at least another decade.



6.3

Improving Access & Wayfinding

Transportation Demand Management

Traditionally, institutions such as the University of Waterloo have addressed the transportation needs of the university community in large part by supplying more parking. This “supply-side” approach does not address the needs of many others within the university community who cannot or choose not to drive, and is not sustainable for the future. Providing parking on the campus is much more expensive than the cost of a permit and parking closest to the heart of the campus is being lost to new development. Further, the environmental and social impacts of single-occupant vehicles (SOV) are great. Increasingly, institutions both private and public are looking for means to reduce car dependency through transportation demand management programs.

Transportation demand management (TDM) focuses effort on reducing the reliance on SOV travel by actively influencing travel choices. The aim is to encourage more walking, cycling, transit use, carpooling and other means while discouraging SOV use. The intended outcome is a series of pushes and pulls that provide additional support for the above-mentioned alternative means of travel through a wide variety of incentives while discouraging SOV travel through disincentives.

The university should develop and implement a TDM program early on with a full complement of initiatives to reduce the reliance on SOV travel and provide mobility alternatives for the university community. A TDM program will have a positive impact on the environment and bring the campus closer to sustainability. With reduced demand for parking spaces, the large surface parking lots surrounding the South Campus can be made available for future campus development and open space. This will allow for a more walkable campus by providing opportunities for growth and intensification close in to the campus, and will reduce the boundary effects of the parking lots that cut the university off from the surrounding city.

A TDM strategy guides the approach to all types of movement to and within the campus. The following sections describe an approach to walking, cycling, transit use and vehicular use from a TDM perspective.

A TDM program for the university could include any number of the following initiatives to support mobility and reduce SOV travel:

- *Transit passes for all TDM participants, including faculty, staff and students*
- *Improved bike facilities, including safer travel paths, improved parking and convenient shower/change facilities*
- *Shuttle service throughout the Waterloo Campus with service to future rapid transit stations*
- *Preferential parking for carpoolers*
- *Emergency rides home for TDM participants*
- *Telecommuting, compressed work weeks and flex-time for employees*
- *Programs and initiatives that allow students, staff and faculty to live close to the university*
- *Enhanced services on or near campus, such as additional daycare facilities.*
- *Structured parking*

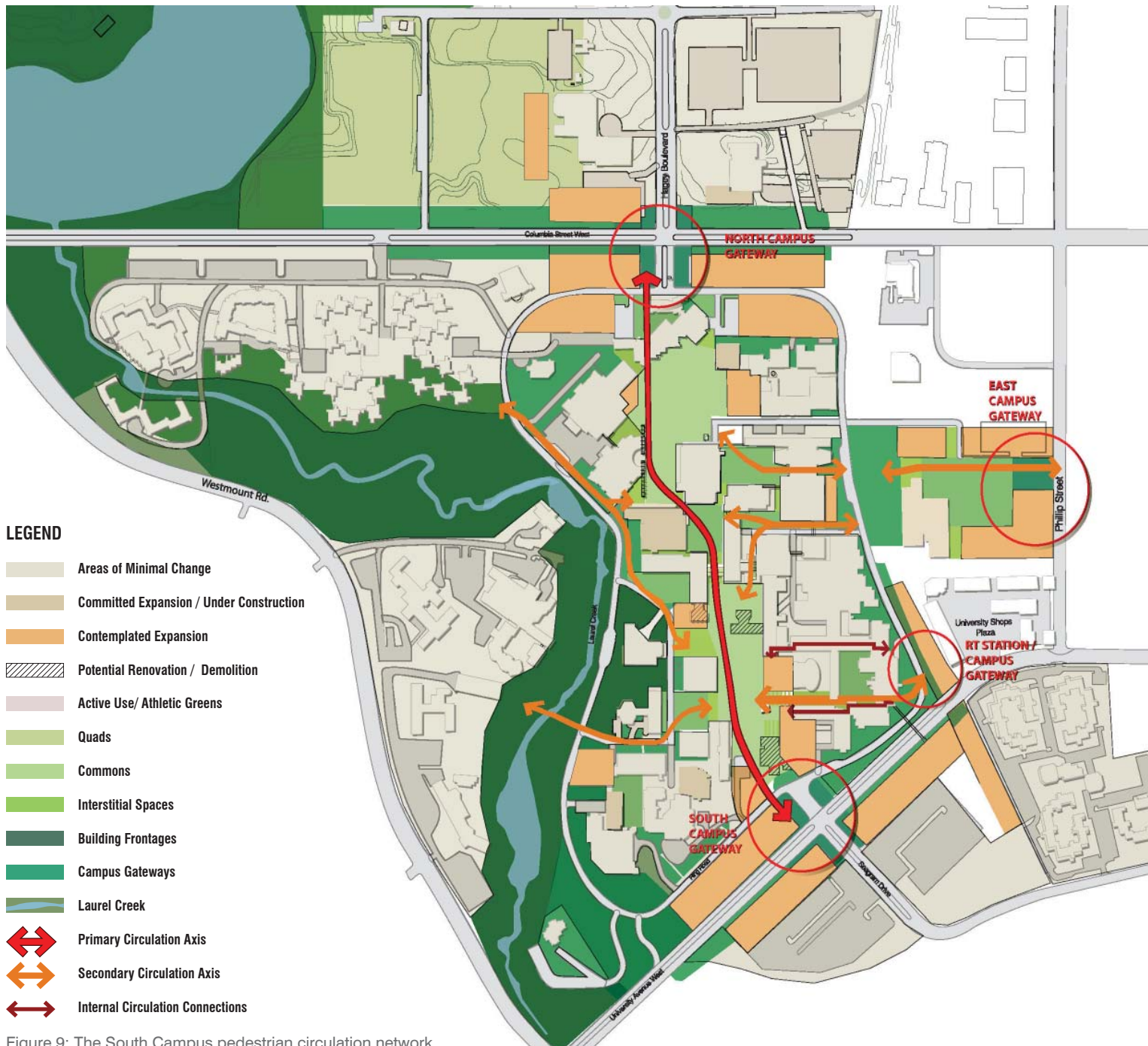


Figure 9: The South Campus pedestrian circulation network



Pedestrians

The primary element of the pedestrian network is a central circulation spine. The spine is proposed as a “main street” along which services and amenities will be focused. It will also connect and enliven a series of open spaces along its length to enhance the campus experience. Secondary pathways will link pedestrians to the circulation spine: from the residences to the west, the federated university & affiliated colleges, the East Campus Hall lands and the eastern interface with the city.

The circulation network highlights the importance of the North, South and East Gateways as key entry points into the campus, demanding enhancements through landscape and buildings. The pedestrian entry point at University Avenue and the rail corridor will become much more significant should it be the location of the proposed rapid transit station.

The circulation spine will also serve as the basis for a wayfinding strategy for those not familiar with the South Campus. Visitors often become lost as they search for a difficult destination and the complex network of paths that currently defines the South Campus does not provide assistance. The circulation spine will provide a central corridor from which visitors can become oriented and, in conjunction with improved signage, will improve the visitor experience.

Directions:

- Establish a pedestrian-only circulation spine from the South Campus Gateway at University Avenue to the North Campus Gateway at Columbia Street. The circulation spine will be the focus of significant landscape improvements.
- Direct new and existing university services and amenities to locations along the circulation spine to enhance its presence as the “main street” for the South Campus.
- Enhance the quality and convenience of the broader circulation network to ensure direct connectivity between important campus locations and the circulation spine.
- Ensure the pedestrian network and internal pedestrian circulation corridors provide convenient access to all resources on the campus for people with disabilities.
- Limit vehicular traffic within the Ring Road, especially during periods of high pedestrian activity such as class changes, and develop a streetscape strategy for roads and service drives within the Ring Road to eliminate asphalt surfaces in favour of alternate paving materials, outdoor furniture and plantings.
- Provide weather-protected and accessible pedestrian connections between adjacent buildings including, where appropriate, overhead pedestrian bridges.

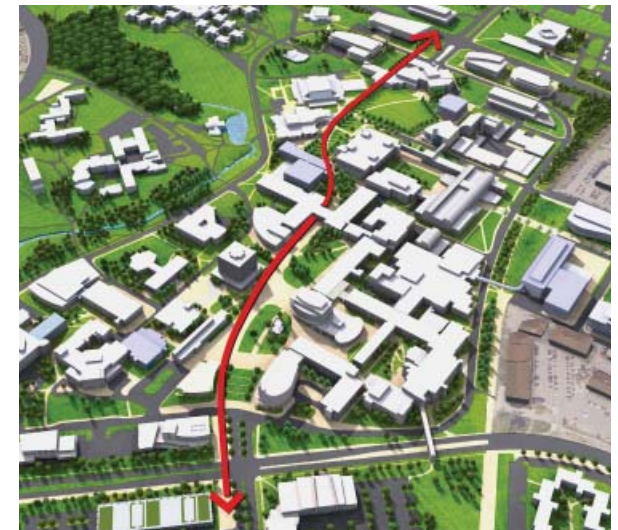
Initiatives:

- Create an identity for and enhance the circulation spine as the primary means for pedestrian circulation through the South Campus.

- Engage a signage consultant to enhance wayfinding on the South Campus through uniform and simplified signage.

Design Guidelines:

- Apply a consistent palette of high quality paving materials to distinguish the full extent of the primary circulation spine within the pedestrian path network.
- Design pedestrian bridge connections between buildings to maximize transparent glazing, ensuring adjacent open spaces remain visually connected.
- Design exterior canopies, tree groves, and building overhangs to provide shelter from inclement weather and to frame the edges of open spaces.



Cycling

Cycling is an important means of transportation for many in the university community. Overflowing bicycle racks speak to the popularity of this convenient and inexpensive means of travel. The university will increase its already strong support for cycling by providing an integrated network of bicycle facilities, including travel lanes, secure parking, and support facilities.

The Ring Road provides a relatively safe environment for cyclists, and further traffic calming measures can be introduced to increase safety. Dedicated bike lanes are not recommended. Within the Ring Road, conflicts between cyclists and pedestrians should be minimized. Bicycle use will continue throughout sidewalks on the South Campus, but should be discouraged on the pedestrian circulation spine. Connections to surrounding areas should be enhanced, including additional crosswalks to the North Campus and links to Phillip Street, and bicycle lanes should be encouraged on adjacent municipal roads.

Bicycle parking is in short supply on the South Campus and should be expanded in convenient and accessible areas. Parking areas are recommended in locations that minimize travel distance and encourage cyclists to dismount rather than travelling through the academic core. A minimum of one large bicycle parking area in a secure location should be provided for every large building and bicycle parking should be sheltered or incorporated into new buildings. Shower and change facilities for cyclists should be integrated into new developments at key

locations. Bicycle use will likely increase with the proposed rapid transit corridor and bicycle parking facilities should be planned around proposed transit stops.

Directions:

- Implement a series of traffic calming measures on the Ring Road, including tree plantings, speed tables and humps, alternative paving materials and/or narrowed road widths.
- Work with the city and region to assist with implementation of the Regional Cycling Network. Bicycle parking, travel lanes and traffic calming should be supported on adjacent municipal roads such as University Avenue, Columbia Street and Phillip Street.

Initiatives:

- Discourage bicycle travel on the pedestrian circulation spine by implementing a “dismount zone.”
- Develop a bicycle parking strategy that ensures an adequate supply of bicycle parking spaces in convenient locations throughout the South Campus.
- Require adequate parking facilities with all new campus development based on anticipated demand. Ensure that shower and change facilities are provided in convenient locations around the Ring Road to support cycling.

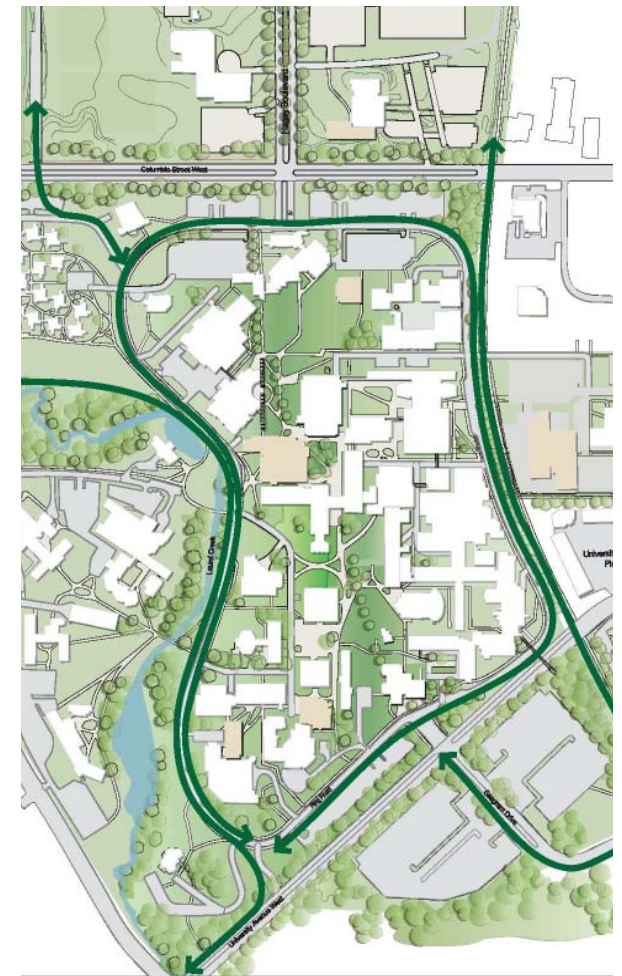


Figure 10: The South Campus cycling network

Transit

While meeting the needs of some within the university community, the Grand River Transit (GRT) bus system is simply not convenient for many others, and inexpensive parking encourages driving. However, the Region of Waterloo is planning a rapid transit corridor that is expected to pass through the Waterloo Campus along the rail corridor east of the Ring Road.

Rapid transit could introduce a new paradigm for movement in the region, offering a viable alternative to the car and changing the way people travel to the campus. Cross-region movement would be convenient and accessible. Planned station locations include one stop immediately north of University Avenue between the University Shops Plaza and Carl Pollock Hall and one stop on the North Campus where Wes Graham Way extends east to the rail line. The former would be convenient and accessible for most people on the South Campus, and the latter would provide significantly improved transit for many employees in the R+T Park. Further, bus network improvements are planned in conjunction with the rapid transit initiative, creating a more efficient east-west grid of public transit across the region, with the rapid transit corridor as the central spine.

Rapid transit could have widespread positive impacts on the university's TDM program. A fast and convenient transit system will facilitate significant reductions in SOV travel. Further, the station areas themselves will benefit the university as focal points for new development and intensification. The university should play a significant role in planning and developing the

transit station areas to minimize negative impacts on the campus and maximize the positive benefits from transit nodes. With future growth on the Waterloo Campus, a campus bus circulator is recommended to link the three campuses and provide connections to the proposed rapid transit stations.

Directions:

- Provide direction to the Region of Waterloo with respect to the location and site planning of rapid transit stations.
- Ensure station area plans enhance pedestrian connectivity to the campus and maximize development potential for the university.
- Engage in public and/or private partnerships to ensure that redevelopment of transit station areas supports the university and maximizes the potential of the land.

Initiatives:

- Support transit passes for all TDM participants, including faculty, staff and students.
- Following implementation of the proposed rapid transit initiative, work with GRT to maximize potential of bus routes serving the campus, including the possibility of a circulator bus serving the entire Waterloo Campus.

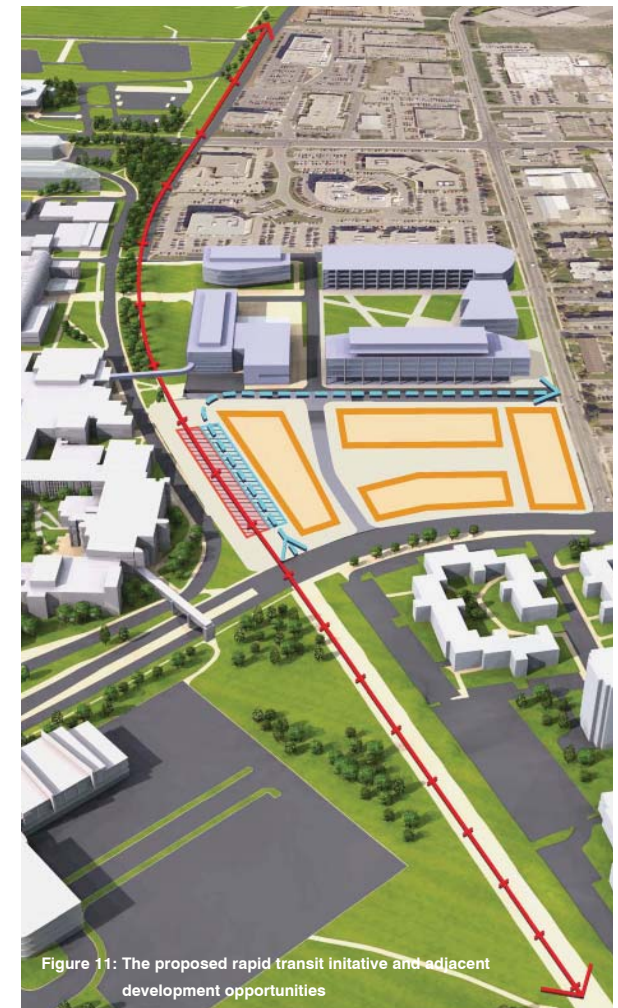




Figure 12: The South Campus vehicular circulation network and potential locations for structured parking

Circulation and Parking

As the university evolves, cars will continue to have a presence on the South Campus. However, new growth is extending beyond the Ring Road and parking close-in to the campus is being reduced. Drivers are already forced further out to parking areas north, east and south of the academic core.

Vehicular travel and parking have a profound impact on the quality of the campus. Parking lots are the face of the university to the surrounding community, creating a barrier and limiting interaction between the campus and the community. Some of these lots will be the sites of future campus development that will connect the university to the city. Within the Ring Road, parking areas and service lanes create hard and uninviting conditions within a mostly pleasant and pedestrian-oriented environment. Parking and service lanes used for pedestrian circulation should be improved through landscape measures, including alternative paving, screening of loading areas and greening initiatives. Where vehicles are welcome, the needs of pedestrians and transit users should be of paramount concern. By making walking, cycling and transit use easier, vehicular travel to and across the campus can be reduced along with parking demand.

Parking will continue to be provided on the campus as faculty and staff numbers grow to support increased student enrolment. However, parking will be in a different form and will likely cost

more. Further, there will be no net increase in the number of parking spaces as TDM measures will limit parking demand. As surface parking lots are lost to new development, it will become necessary to implement structured parking at strategic locations around the academic core. Given the current oversupply of parking, development trends and the anticipated success of a TDM program, replacement structured parking facilities are not anticipated in the next 10-20 years.

Directions:

- Reduce parking demand and vehicular travel by supporting other mobility means through a TDM program.
- Develop a landscape strategy that prioritizes improvements to service and parking areas within the Ring Road.
- Continue to support the successful central receiving facility in East Campus Hall until the site is redeveloped. A new facility can be located within or adjacent to the Bauer Warehouse on the North Campus

Initiatives:

- The current number of parking spaces available to the university community should be capped. As existing parking areas are developed, the “lost” parking spaces can be replaced on a one-to-one ratio in the form of structured parking facilities or remote parking lots.



Combined structured parking and office development

- Develop a stratified parking permit system to increase revenue from parking on the campus. This would include a “get-what-you-pay-for” permit system that charges premium prices for location and convenience.
- Create a funding strategy to support the development of structured parking around the academic core. Structured parking should be well-designed and developed with useable building frontage to ensure fit within the campus environment.

Design Guidelines:

- Vehicle access to proposed parking structures, and below grade parking spaces under buildings should be located away from the active frontage of proposed buildings.
- The facades of proposed parking structures should reflect a high quality material palette that is consistent with adjacent buildings, especially when directly connected to academic or mixed-use development.
- A limited number of below-grade parking spaces (accessible, visitor, service and loading) are permitted under proposed academic and mixed-use building sites.
- Ground-level parking is not permitted underneath proposed buildings. Instead, the ground floor of proposed buildings should be devoted to academic, mixed use or public functions that enliven the public realm.

6.4

Encouraging Campus Community

Athletics

Athletics play an important role in the lives of students. Waterloo students are known for strong academic discipline, but students must also have opportunities to relax and engage in physical activity. Having a variety of sports and recreation opportunities supports the academic mission of the university, contributes to student life and gives back to the community. Formal athletic facilities are located throughout the campus, including the Physical Activities Complex (PAC), the Columbia Icefield on the North Campus, and various sports fields located primarily on the North Campus adjacent to the Icefield. Informal recreation fields are found near residences and generally wherever students find a space large enough to play soccer, toss a Frisbee or play other sports.

An athletic stadium is currently planned for the North Campus adjacent to the Icefield. This is an appropriate location for such a facility, and planning and design should ensure connections to existing facilities within the Icefield. Impacts on existing athletic fields on the North Campus should be minimized or mitigated to ensure other field space remains. The facility should have artificial turf to lengthen the playing season and be able to accommodate a dome for year-round use. Expansion of the PAC is possible, and could include an animated ground floor

to enliven the North Common. In the long-term, the Northwest Campus could be a location for athletics facilities in conjunction with the city's YMCA and sports fields.

Major athletic facilities are not just a resource for the university, but are often the only specialized facilities available to the surrounding greater community. Visiting participants and spectators should be accommodated as best as possible, and a parking strategy is necessary to respond to increased attendance at key events.

Informal sports and recreation happen in a variety of open spaces on the campus, and recreation opportunities should be included in the design of future open spaces. The university should investigate and support new opportunities for recreation throughout the Waterloo Campus on emerging open spaces where appropriate and feasible.

Directions:

- Upgrade and update existing facilities and develop new facilities where necessary to encourage physical activity within the university community.
- Maximize opportunities for outdoor recreation space throughout the campus on open spaces. All student



Physical Activities Complex
Photo: University of Waterloo

residences should have associated outdoor activity areas and open spaces that are convenient for student use.

- Encourage community use of on-campus recreation and athletic facilities where appropriate.
- With major athletic facilities, a parking strategy is required to address increased attendance at key events. Events should be planned for off-peak hours (e.g. evenings and weekends), and other movement strategies could accommodate movement needs, such as a shuttle bus service.

Initiatives:

- Should the PAC be renovated and expanded for a fitness centre or other uses, its relationship to the North Common should be improved through animation at grade and facilities that look out onto the common. The building wall should be glazed at minimum and could incorporate a new entrance to the facility.
- Should athletic facilities be located on the Northwest Campus, develop a movement strategy for students and spectators such as the proposed campus bus circulator or other means.
- Upgrade the Village Green to a formal sports field for use by adjacent residences.

Campus Life

The university experience is more than classroom education. The most memorable experiences of Waterloo students often happen outside of traditional learning environments. The Student Life Centre (SLC) is the heart of campus life, with a variety of dining facilities and a bar, offices for student associations, meeting areas and common areas for studying and relaxing. The SLC will continue to be the hub of campus life, especially for undergraduates. However, South Campus Hall (SCH) will be re-imagined as an additional large student centre. This facility will accommodate the growing space needs for a variety of student services and campus life-focused administrative offices, and will provide new food services opportunities, a bookstore, study space and social facilities. It will also accommodate graduate social functions that have outgrown the Grad House. Smaller facilities throughout the campus will continue to meet additional dining and study space needs, but the SLC and SCH will serve as the two main centres.

The university should explore opportunities to improve campus life beyond the Ring Road. New campus life opportunities, including dining, study space, meeting rooms and recreation facilities, should be created for the UW Place complex and also explored as part of the residential expansion east of Phillip Street. These should be developed as shared facilities in conjunction with a larger residential strategy for the area,



Students playing Frisbee

rather than provided internally with each new development. The university can also seek out partnerships to provide services off-campus. The University Shops Plaza is a good location for such partnerships, and could support integration of the university and surrounding community. Facilities on the North Campus are for the most part provided by the private-sector tenants, such as the new TechTown development. Facilities in Columbia Lake Village should be enhanced to meet the needs of a diverse population and to mitigate the larger distances from facilities on the South Campus.

Directions:

- A new campus life centre is required on the South Campus to meet the growing demand for facilities. The South Common is an ideal location for a new facility given its central position between multiple faculties and the existing campus life functions in that area.
- The university should investigate partnership opportunities to provide services for students, employees and university tenants where appropriate. Areas that might be appropriate for such partnerships include the lands east of Phillip Street and east of the South Campus, the University Shops Plaza, the North Campus, and the Northwest Campus.



The Student Life Centre
Photo: University of Waterloo

- Open space plays an important role in supporting campus life. A landscape strategy for the South Campus should ensure appropriate facilities for social functions such as informal gatherings, group studying and large outdoor events.

Initiatives:

- Redevelop South Campus Hall to provide additional space for dining, a bookstore, campus life offices and other necessary facilities.
- Provide facilities for satellite campus students in the redeveloped South Campus Hall. These may include study space, lounge areas, offices or other facilities deemed appropriate.
- Landscape the area between the SLC and the planned Quantum Nano building to provide new outdoor social spaces and accommodate uses potentially displaced from the Peter Russell Rock Garden.
- In conjunction with a strategy for residential expansion east of Phillip Street, develop a plan for providing shared campus life facilities.
- Identify opportunities to improve and expand daycare facilities on campus to better serve the university community and reduce reliance on driving.

Housing

When considering the image and function of the University of Waterloo, the classrooms and research labs that directly support the academic mission come to mind. However, one of the university's key roles is that of a landlord. Over 6,000 students live in on-campus student housing, and a larger number live within walking distance of the campus. Proper management of student housing is important and the university must play a strong role in supporting appropriate student housing in nearby neighbourhoods.

On-Campus Housing

On-campus university housing takes many forms and can be found throughout the Waterloo Campus. University housing must provide a variety of levels of service in a number of housing formats that meet the diverse needs of the student body. First-year undergraduates have full service accommodations and are close to the academic core. The more independent lifestyle of graduate students allows for housing in neighbourhood-like settings such as Columbia Lake Village.

Generally, the on-campus university residences meet the needs of the students, and the range of housing provided is appropriate for student needs. Existing facilities should be maintained and updated to accommodate changing needs and respond to normal building degradation over time. Columbia



Student Village 1
Photo: University of Waterloo

Lake Village South, UW Place and the Minota Hagey Residence are candidates for intensification of land uses. The Northwest Campus could also be home to additional graduate housing beyond the area of Columbia Lake Village, subject to future land use decisions. This location is appropriate for university-supported residences for visiting scholars, staff or faculty. No other on-campus residential development is anticipated.

Off-Campus Housing

With thousands of students living near the campus in a variety of living arrangements, the university plays an indirect but powerful role in influencing the character and quality of its surroundings. In recent years, the area between the University of Waterloo and Wilfrid Laurier University has become saturated with privately-provided student housing, often of a quality and scale that is not compatible with student needs or the surrounding community. The sheer number of students and their lifestyles have impacted the quality of these neighbourhoods, leading to conflicts with permanent residents. However, near-campus housing is inherently sustainable as it reduces the necessity for vehicular travel and supports campus life. Student housing also provides opportunities to extend the university's presence in the city, and offers opportunities for collaboration between the University of Waterloo and Wilfrid Laurier University to provide nearby, appropriate housing.

The university is committed to increasing near-campus housing as a part of the undergraduate experience and supporting appropriate privately provided housing in partnership with the university. A new undergraduate housing project is planned on Phillip Street, east of East Campus Hall through a development partnership. Given its proximity to the university and surrounding amenities, this development site is an excellent location for new residential development.

The university should continue to investigate opportunities for residential development in the area east of Phillip Street, particularly given the changes that may occur as a result of the proposed rapid transit corridor. However, a long-term strategy for the redevelopment of the area as a whole should be adopted prior to any new developments beyond those currently planned. This strategy should be developed in coordination with the City of Waterloo and local residents to create positive community impacts and ensure the development of complete communities that provide for the needs of all residents. As this location would benefit from a mix of students and other residents, housing for visiting scholars, staff or faculty is appropriate.



Students at Orientation
Photo: University of Waterloo

Directions:

- Existing on-campus residential areas will remain as such with little expansion. Necessary improvements should be made to keep the buildings and surrounding open space up-to-date.
- Residence buildings nearing the end of their useful lives can be renovated or redeveloped. With redevelopment, the university can explore opportunities for intensification and opportunities to incorporate compatible non-residential uses into the sites.
- Columbia Lake Village may be expanded into the Northwest Campus pending future land use decisions. It will remain as graduate housing but can also accommodate professional, visiting scholar, and faculty or staff housing.
- The university should explore opportunities to encourage faculty and staff housing close to the campus. This would have the potential to reduce vehicular travel to the campus, create a stronger university community and help reduce university-community conflicts.
- The university should work with the city to support appropriate development of privately-provided, university-operated student housing in the near-campus community and to minimize the negative effects sometimes caused by large concentrations of student housing. New residential development should ensure preservation of the quality and integrity of surrounding neighbourhoods.

Initiatives:

- Develop a long-term development strategy for the area east of Phillip Street, east of the South Campus. This strategy would be developed in coordination with the city and local residents to determine appropriate building typologies, the correct balance of students and other residents, and a successful level of non-residential development to support the community.
- Due to its small size, the Minota Hagey Residence is uniquely situated to serve as a site for housing-related pilot projects. Projects in this residence such as the “Velocity” mobile/media incubator should be promoted. However, when this residence reaches the end of its useful life, redevelopment could be for either academic or residential use, or a combination of the two.
- Graduate student housing in Columbia Lake Village South can be redeveloped and intensified in the next 5-15 years. Its replacement should be planned in concert with the new townhouse community of Columbia Lake Village North, as well as other development on the Northwest Campus. New housing should relate to Columbia Street to minimize barrier effects between the university campus and surrounding community.

- Should the proposed regional rapid transit corridor become a reality, the university should explore partnership opportunities for new housing development immediately surrounding the campus transit stations. These locations will provide significant opportunity for intensification and mixed-use development, especially at University Avenue, and will contribute to sustainability.



North
Athletics

CIF
22

OPT

North
Gateway

University
Residences

FED

10

11

BMH

PRC

GSB

COM

GSC

UC

PAC

North
Common

SLC

MC

DC

HS

Federated University &
Affiliated Colleges

REN

STJ

STF

CGB

Laurel
Creek
Corridor

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MIL

South
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Gateway

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East
Gateway

Transit
Gateway

UW Place

6.5

Developing Character Areas

Eight emerging character areas make up the heart of the South Campus. Listed here, and described throughout the remainder of this chapter, each character area has been designed to integrate new buildings, open spaces, roads and paths in a holistic manner, creating unique and attractive places that will enhance the quality and utility of the South Campus as a whole.

1	South Gateway	4	North Gateway	7	Transit Gateway
2	South Common	5	East Gateway	8	North Athletics
3	North Common	6	Laurel Creek Corridor		

Future Development

Twenty four new or redeveloped buildings are proposed for the South Campus. Each proposed building is listed below, and described (by Character Area) throughout the remainder of this chapter. All buildings should aim to achieve a high standard of architectural quality, energy efficiency, use of environmentally-sustainable materials, systems and methods of construction.

Index:

Parcel	Description				
1	3-4 Storey Student Centre	9	Redeveloped 3-4 Storey Academic Building	17	4 Storey Academic Building
2	5-6 Storey Academic Building	10	3-4 Storey Academic Building	18	4-5 Storey Mixed-Use/Acad. Building & Parking Structure
3	3-4 Storey Academic Addition to Biology I	11	3-4 Storey Academic/ Mixed-Use Building	19	3-4 Storey Mixed-Use Building
4	5-6 Storey Academic Building	12	3-4 Storey Academic/ Mixed-Use Building	20	5-6 Storey Academic Building
5	3-4 Storey Academic Mixed-Use Building	13	3-4 Storey Academic/ Mixed-Use Building or Parking Structure	21	5-6 Storey Academic Building
6	3-4 Storey Academic Mixed-Use Building	14	3-4 Storey Academic/ Mixed-Use Building	22	3-4 Storey Mixed-Use Building
7	Multi-Level Parking Structure	15	4-5 Storey Academic Building	23	Potential Athletics Stadium
8	3-4 Storey Academic Mixed-Use Building	16	1-2 Storey Addition to the Physical Activities Complex	24	Library Storage Facility (below grade)

Building Index: Existing & Under Construction

Acronym	Building Name				
AL	Arts Lecture Hall	E5	Engineering V	PAC	Physical Activities Complex
B1	Biology I	EIT	Centre for Environmental & Information Technology	PAS	Psychology, Anthropology, Sociology
B2	Biology II	ESC	Earth Sciences & Chemistry	PHY	Physics
BMH	B.C. Matthews Hall	EV1	Environment I	PRC	Photovoltaic Research Centre
BRH	Brubacher House	EV2	Environment II	QNC	Quantum Nano Centre
C2	Chemistry II	FED	Federation Hall	RCH	J.R. Coutts Engineering Lecture Hall
CGR	Conrad Grebel University College	GH	Graduate House	REN	Renison University College
CIF	Columbia Icefield	GSC	General Services Complex	SCH	South Campus Hall
COM	Commissary	HH	J.G. Hagey Hall of the Humanities	SLC	Student Life Centre
CPH	Carl A. Pollock Hall	HS	Health Services	STJ	St. Jerome's University
CSB	Central Services Building	LIB	Dana Porter Library	STP	St. Paul's University College
DC	William G. Davis Computer Research Centre	MC	Math & Computer	TC	William M. Tatham Centre for Co-operative Education & Career Services
DWE	Douglas Wright Engineering Building	ML	Modern Languages	UC	University Club
E2	Engineering II	NH	Ira G. Needles Hall	UWP	University of Waterloo Place
E3	Engineering III	OPT	Optometry Building		



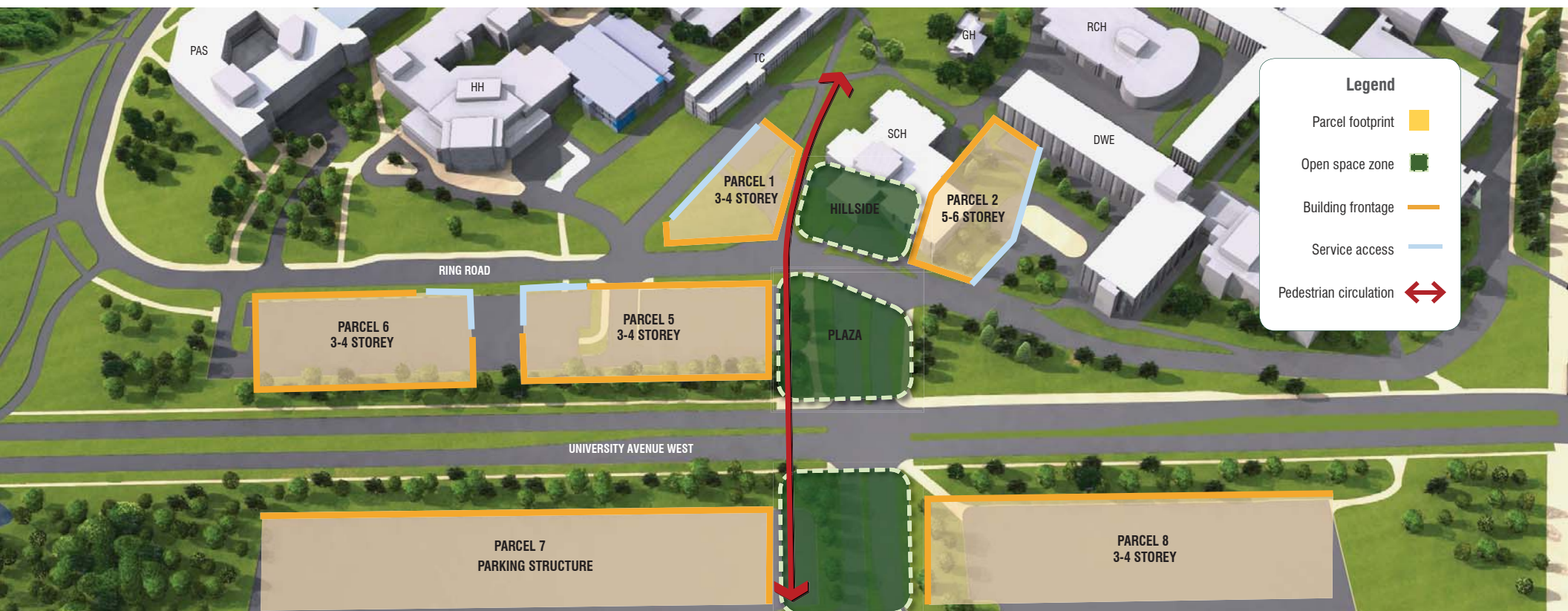


CHARACTER AREA 1

SOUTH GATEWAY

An enhanced South Gateway will reflect the exceptional quality of the university and its people through the design of its buildings and landscapes. It will improve the way people enter (and leave) the campus, whether by bicycle, on foot, or by vehicle. And it will position new growth to reinforce a sense of arrival and enliven key open spaces.

ARTISTS RENDERING: View looking north from University Avenue, at the South Campus entry drive.



Open Spaces

The South Gateway creates two key open spaces: the Plaza and the Hillside. Together, they structure the location of new development, and provide visual cues to lead pedestrians through a campus entry sequence that extends into the South Common and the heart of the campus. For this reason, the Campus Master Plan applies an integrated approach to the design of the South Gateway and South Common Character Areas.

Pedestrian Connections

A well designed campus reveals the way to visitors. The South Gateway supports this goal by rationalizing pedestrian paths to form a continuous connection between Seagram Drive and the South Common. Development parcels are sited to frame an attractive “main street” that draws people from the Gateway Plaza into the heart of the campus.

Demolition & (Re)development

A series of (re)development parcels frame and enliven the Gateway, providing new academic and academic support spaces to meet the near term needs of adjacent faculties.



Legend

- 1 Potential 3-4 Storey Student Centre
- 2 Potential 5-6 Storey Academic Building
- 5 Potential 3-4 Storey Academic Mixed-Use Building
- 6 Potential 3-4 Storey Academic Mixed-Use Building
- 7 Potential Multi-Level Parking Structure
- 8 Potential 3-4 Storey Academic Building
- ▶ Perspective viewpoint (left page)





Design Guidelines

General guidelines describing the height, position, frontage, service access and massing of proposed development parcels are noted on the accompanying drawings and key maps. Parcel-specific guidelines are detailed below.

- **Parcel 1:** Build a 3-4 storey Gateway Student Centre adjacent to the William M. Tatham Centre for Co-operative Education & Career Services. Relocate functions contained in South Campus Hall and other locations to the new facility, including new space for the Graduate Students Association. The building should reflect a high quality of design, consistent with this prestigious site. It should also be sited to allow continuous operation of SCH during construction of the new facility.
- **Parcel 2:** Prior to development of this parcel, demolition of South Campus Hall is required. A more detailed phasing plan is recommended to ensure a seamless relocation of existing services from this facility to other locations, such as the proposed student centre on Parcel 1. Following

relocation of services and demolition, develop a 5-6 storey gateway academic building on land immediately to the east of SCH, located to frame the eastern edge of the South Campus entry drive. The building should be designed to minimize overshadowing and obstruction of adjacent buildings.

- **Parcel 5, 8:** Construct a 3-4 storey academic/mixed-use building that establishes frontage, visual connections, ground floor amenities and public or commercial functions addressing the South Campus entry drive.
- **Parcel 7:** Build a multi-storey parking structure with well-designed architectural screening devices or façade treatments.
- Design an integrated landscape improvement plan that organizes new plantings, street furniture, the path system, and gathering places to enliven key open spaces and strengthen relationships with proposed building projects.
- There are two open space zones within the South Gateway. Each will act as a threshold, guide wayfinding and create identity within the larger spaces of the campus.

- **Gateway Plaza:** Conceived as an attractive entry to the South Campus, this space is also a forecourt to the landmark buildings on development parcels 1, 2, and 5. Landscaping and signage should support the role of this space in a campus wayfinding strategy.
- **Hillside:** This space transitions between the entry plaza and the plateau. Pedestrian paths should be aligned with building frontage (parcels 1 and 2).





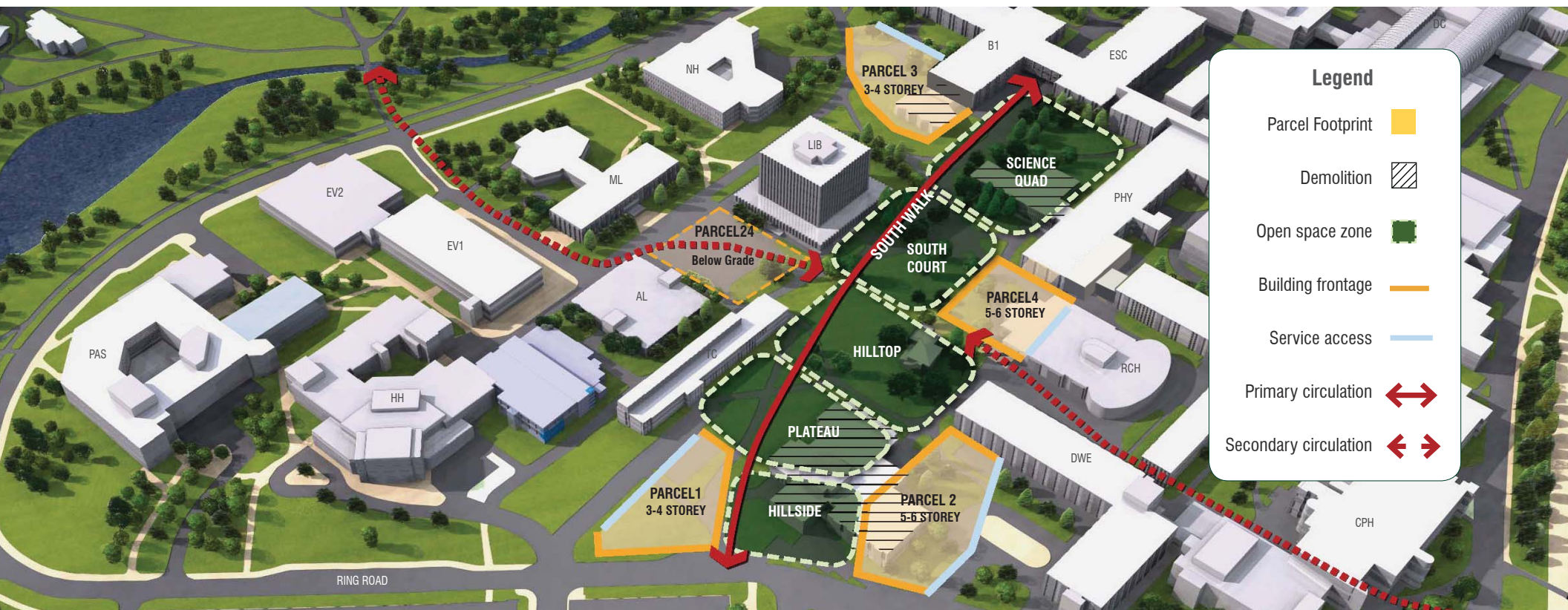


CHARACTER AREA 2

SOUTH COMMON

The South Common will become an active mixed-use centre for all members of the university community. With direct connections to the North Common and the South Campus Gateway, it is well positioned to draw visitors into the heart of the university. The common also draws a wide range of students and staff, from four adjacent faculties (Arts, Science, Engineering and Environment) and two university service centres (Co-op and South Campus Hall).

ARTISTS RENDERING: View looking north



Open Spaces

By preserving one of the last large open spaces within the Ring Road, the South Common secures room for a wide range of uses for all members of the university community. The common also celebrates the unique topography and agricultural roots of this historic site and creates an opportunity to enhance the quality of the landscape.

The Campus Master Plan defines four potential landscape zones within the South Common. They include: the Plateau, Hilltop, South Court and Science Quad. Each is unique and requires a subtly different approach to the enhancement of landscape, rationalization of pedestrian circulation and siting of (re) development. Together, these zones should be integrated with those of the South Gateway to frame a dramatic campus entry sequence and lead pedestrians into the heart of the campus.

Pedestrian Connections

The South Common should rationalize pedestrian paths with the South Gateway, providing an attractive “main street” that draws people into a clear sequence of spaces that connect the south and north gateways of the campus. The South Common should also provide for pedestrian movement in an east-west

direction, recognizing that traffic may increase in response to the proposed rapid transit station at the eastern edge of the South Campus.

Demolition & (Re)development

A series of (re)development parcels will frame and enliven the South Common, accommodate weather-protected connections between buildings, and provide new academic and academic support space to meet the near-term needs of adjacent faculties.



- Legend**
- Potential 3-4 Storey Student Centre 1
 - Potential 5-6 Storey Academic Building 2
 - Potential 3-4 Storey Academic Addition to Biology I 3
 - Potential 5-6 Storey Academic Building 4
 - Potential Library Storage Facility (below grade) 24





NH

B1

ESC

EIT

LIB

PHY

E3

ML

ARTS QUAD

SCIENCE QUAD

POTENTIAL
NEW BUILDING
ENTRANCE

SOUTH COURT

POTENTIAL
5-6 STOREY
BUILDING

AL

TC

E2

RCH

HILLTOP

PLATEAU

DWE

POTENTIAL
3-4 STOREY STUDENT
CENTRE

HILLSIDE

POTENTIAL
5-6 STOREY
BUILDING

Long term implementation of the South Common includes the potential demolition of one wing of the Physics building (as indicated), and possible relocation or demolition of the Grad House. Both measures should be considered within the context of a more detailed landscape plan for the South Common, South Gateway, as well as a phasing plan to guide the relocation of existing services and academic functions to alternate facilities.

Design Guidelines

General guidelines describing the height, position, frontage, service access and massing of proposed development parcels are noted on the accompanying drawings. Details regarding specific parcels are listed below. Guidelines relating to parcels 1 and 2 are included in the description of the South Gateway Character Area.

- **Parcel 3:** Construct a 3-4 storey addition to Biology I that establishes frontage and primary entry, visual connections and public functions addressing the South Common.
- **Parcel 4:** Build a 5-6 storey academic building in front of J.R. Coutts Lecture Hall that addresses a forecourt shared with the Dana Porter Library. Locate public functions at grade with visual and direct connections onto the common.
- **Parcel 5:** Build a library storage facility below grade, with direct internal connections to Dana Porter Library. The roof of the new facility should be designed to function as an enhanced Arts Quad.
- Design an integrated landscape improvement plan that organizes new plantings, street furniture, a rationalized path system and gathering places to enliven key open spaces and strengthen relationships with proposed building projects.
- There are four open space zones within the South Common Character Area. Each will act as a threshold, guide way-finding and create identity within the larger spaces of the campus. Together they should be designed as components of a larger landscape strategy that integrates key open spaces along a north-south axis between the South Gateway and the North Gateway. This strategy should employ a consistent palette of materials, plantings and furniture.
 - **Plateau:** Conceived as a lively gathering space, this space should be enlivened by public entrances to the William M. Tatham Centre for Co-operative Education & Career Services, the proposed Student Centre, and landmark academic building on parcel 2. High quality surface materials, plantings and seating should be designed to support the role of this gathering place.
 - **Hilltop:** This space provides a transition between adjacent landscape zones. Pedestrian paths should be aligned with building frontage.
 - **South Court:** The design of this space should reflect its central position in the common as a forecourt shared by parcel 4 and the Dana Porter Library. The design should include a prominent landscape or water feature and seating.
 - **Science Quad:** This space should maintain as much existing vegetation as possible while providing enhanced pedestrian connections between existing and proposed building entrances.





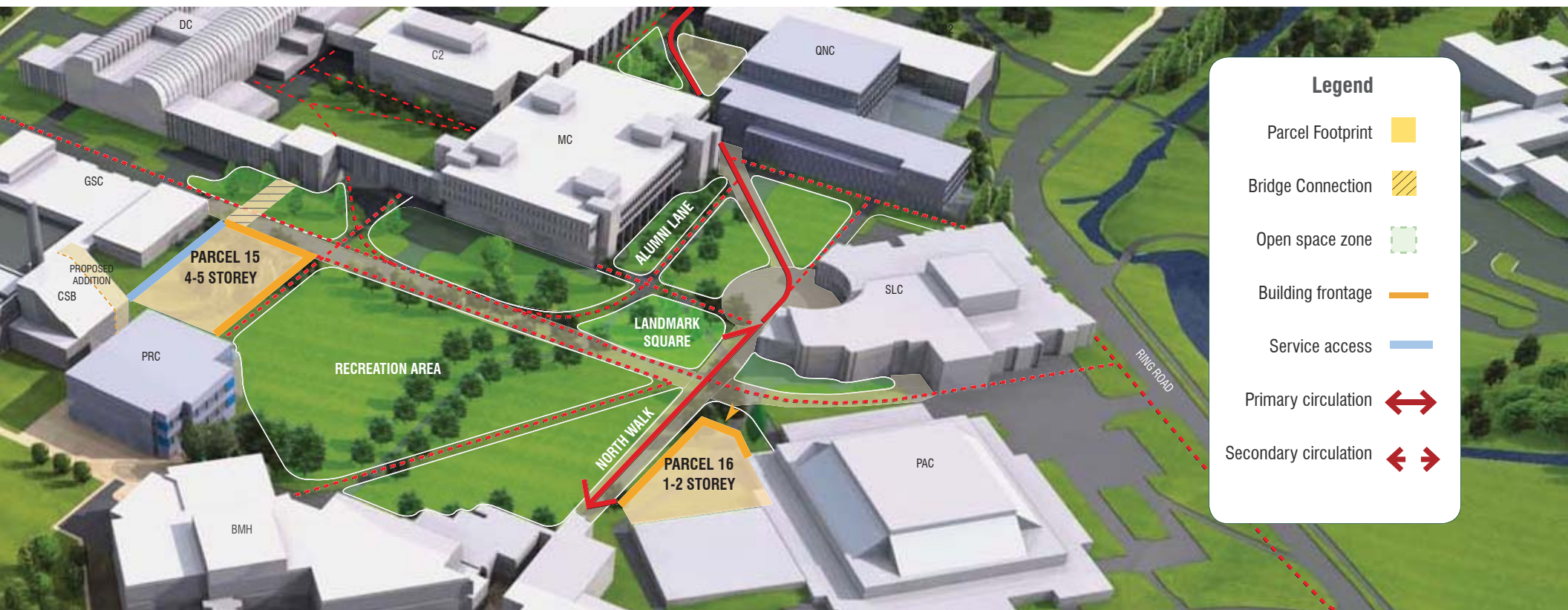


CHARACTER AREA 3

NORTH COMMON

The North Common & Quads Character Area is a vibrant mixed-use campus centre, framed by key destinations and accessible to all members of the university community. At the heart of this character area is the North Common, the largest open space within the Ring Road and a popular destination for informal sports and occasional large seasonal and ceremonial events.

ARTISTS RENDERING: North Common and the main pedestrian path, looking South



Open Spaces

By preserving one of the last large open spaces within the Ring Road, the North Common secures room for a wide range of uses for all members of the university community. Four potential landscape zones are identified in this character area, including: Alumni Lane, Recreation Area, North Walk and Landmark Square. Each is unique and requires a subtly different approach to the enhancement of landscape and rationalization of pedestrian circulation.

Pedestrian Connections

The Campus Master Plan proposes a rationalization of existing pedestrian paths in the North Common. The proposed path system will frame new areas within the common, align with proposed development parcels and form part of a north-south campus “main street.”

Development

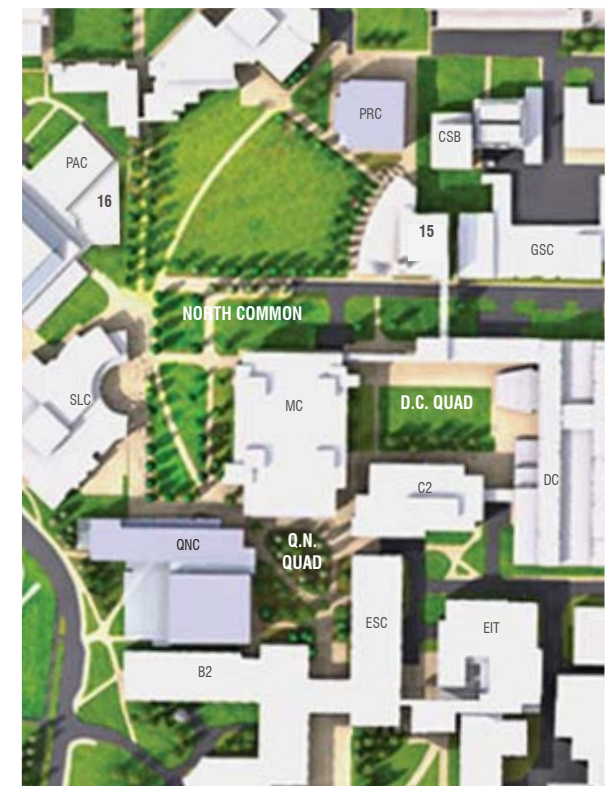
The North Common accommodates two modest development parcels and an addition to the Central Services Building. By restricting further development, the unique character, expansive scale and diverse uses of the North Common will continue to enrich campus life.

Design Guidelines

- **Parcel 15:** This parcel is designed to suit a 4-5 storey academic building that addresses the common. The building should reflect a high quality of design, minimize obstruction of views to and from the Photovoltaic Research Centre and locate public functions at grade level. An internal above grade connection to the William G. Davis Computer Research Centre should reflect a high quality of design, maximizing the use of transparent glazing.
- **Parcel 16:** This parcel is suitable for a low-rise addition to the PAC to accommodate new athletic studio space. Active frontage onto the common is desirable to animate the North Walk.
- **Davis Centre Quad:** To improve the use and quality of this open space, additional tree plantings (groves) are recommended to frame existing pedestrian paths and provide wind-sheltered routes between buildings.
- **Quantum Nano Quad:** Recent construction of the Quantum Nano facility fully encloses this space, requiring a new landscaping strategy to address its urban character, reduced access to sunlight and challenges to campus way-finding. A landscape plan should be prepared to resolve how best to integrate the Peter Russell Rock

Legend

- Potential 4-5 Storey Academic Building 15
Potential 1-2 Storey Addition to the Physical Activities Complex 16





RING ROAD

DC

ESC

C2

MC

QNC

B2

GSC

CSB

15

PRC

SLC

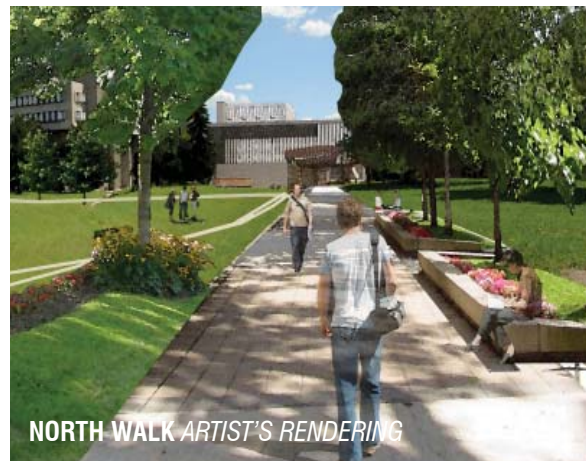
BMH

PAC

Garden into the interconnected South Campus landscape system to achieve enhanced visual and pedestrian connections across this busy, shaded quad.

There are four open space zones within the **North Common** Character Area:

- **Recreation Area:** This open space enlarges an existing informal recreation area for use by all members of the university community.
- **Alumni Lane:** This successful feature of the North Common should be extended and integrated with adjacent areas, such as the landmark square.
- **Landmark Square:** The design of this space should reflect its prominent position at the centre of the North Common, terminating a number of view corridors. A landmark element of public art, landscape or water feature should be incorporated as well as areas to sit and gather.
- **North Walk:** New tree plantings (groves), seating and path materials should highlight the role of this primary circulation spine, and a similar palette should be applied as the North Walk connects to the North Gateway and the Quantum Nano Quad.





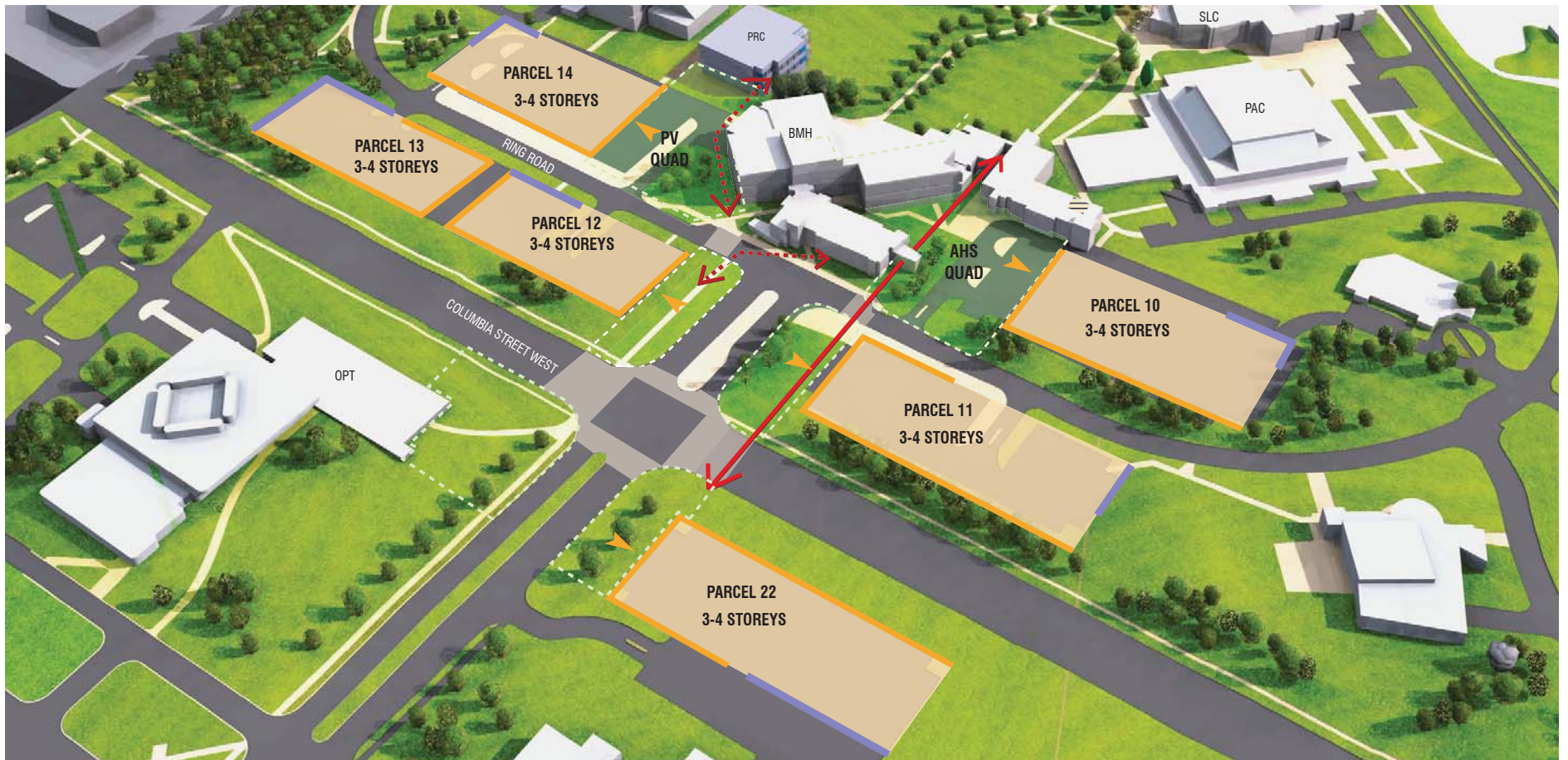


CHARACTER AREA 4

NORTH GATEWAY

ARTIST'S RENDERING: View looking south, from
Columbia Street West and Hagey Boulevard

The North Gateway showcases the university's commitment to research and technology partnerships, reflected in the design of academic and mixed-use buildings that anchor the place where the South Campus and the Research + Technology Park meet.

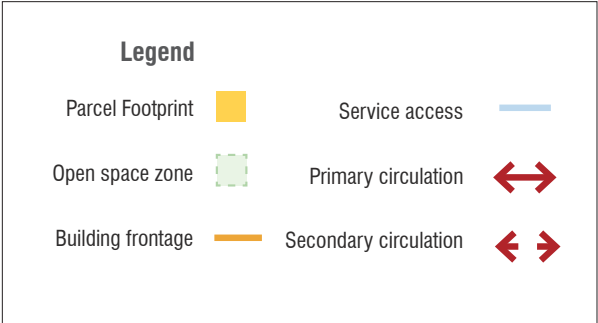


Open Spaces & Pedestrian Connections

The North Gateway Character Area includes three key open spaces: the North Gateway, the AHS Quad and the Photovoltaic Quad. Each space organizes the shape of adjacent development parcels and supports the extension of primary and secondary circulation paths, with direct connections to the North Common. By visually connecting the spaces and paths, a clear entry sequence leads visitors into the heart of the campus.

Development

The North Gateway is anchored by six large development parcels. These buildings will reflect a high quality of design befitting the prominent role of this technology gateway. A mixture of academic, public uses, research and technology programs will enliven the sense of place here.



Legend	
Potential 3-4 Storey Academic Building	10
Potential 3-4 Storey Academic/ Mixed-Use Building	11
Potential 3-4 Storey Academic/ Mixed-Use Building	12
Potential 3-4 Storey Academic/ Mixed-Use Building or Parking Structure	13
Potential 3-4 Storey Academic/ Mixed-Use Building	14
Potential 3-4 Storey Academic/ Mixed-Use Building	22





DC

MC

COM

GSC

CSB

PRC

14

13

12

BMH

PAC

10

RING ROAD

11

OPT

22

COLUMBIA STREET WEST

Design Guidelines

General guidelines describing the height, position, frontage, service access and massing of proposed development parcels are noted on the accompanying drawings and key maps. Where unique guidelines apply, they have been listed below.

- **Parcel 11:** This parcel occupies a prominent position on the North Gateway and should reflect a high quality of design and a dynamic character. This academic/mixed-use 3-4 storey building should showcase a landmark element to terminate the view corridor of the pedestrian “main street” at the western edge of the gateway.
- **Parcel 12:** This academic or mixed-use 3-4 storey parcel occupies a prominent position on the North Gateway and should reflect a high quality of design.
- **Parcel 13:** This parcel is suitable for a 3-4 storey academic or mixed-use building, or a multi-level parking structure, with high quality screening devices or façade treatments addressing Columbia Street West.
- **Parcel 22:** This 3-4 storey academic/mixed-use building occupies a prominent position on the North Gateway and should reflect a high quality of design.







CHARACTER AREA 5

EAST GATEWAY

The East Gateway connects the university to the city by creating a dynamic mix of uses, open spaces and higher density development to frame and enliven a new urban edge on Phillip Street.

ARTISTS RENDERING: View looking east, along East Gateway Walk, towards Phillip Street.



Design Guidelines

Long-term development of the East Gateway begins with a detailed phasing plan to ensure a successful transfer of existing academic programs and the central receiving facility from East Campus Hall to new or replacement facilities prior to redevelopment of the site.

As well, in consideration of the significant number of existing surface parking spaces on the East Campus, future development proposals should be planned in concert with applicable transportation demand management initiatives, (as suggested earlier in this chapter), to ensure a range of transportation options remain available to offset the loss of these spaces. Over the long term, one such option is the construction of a parking facility on this site (parcel 18). As well, a limited number of below-grade parking spaces (accessible, visitor, service and loading) are permitted on other parcels within this site, accessible via the proposed service roads. However, no grade-level parking is permitted below buildings on any parcel proposed by this Campus Master Plan update.



Legend	
Potential 4 Storey Academic Building	17
Potential 4-5 storey Mixed-Use / Academic Building & Parking Structure	18
Potential 3-4 Storey Academic Building	19
Potential 5-6 Storey Academic Building	20
Potential 5-6 Storey Academic Building	21



The height, position, frontage, service access and massing of proposed development parcels is noted on the accompanying drawings and key maps. In general, the range of heights is higher than other character areas, in recognition of this character area's urban character. Where unique guidelines apply, they are listed below.

- **Parcel 18:** This parcel should be developed to accommodate two facilities: a 4-5 storey mixed-use / academic building addressing Phillip Street, and a multi-level parking structure, accessible by vehicle via the proposed north service road, and/or East Gateway Drive. Its height should not exceed the lesser of: 4 storeys or the height of adjacent buildings on parcels 17, 18 and 19.
- **Parcel 19:** This prominent parcel best suits the design of a 3-4 storey, mixed-use, pavilion building, presenting an attractive and extroverted face on all sides. Public functions should be located at grade level, including a potential off-campus housing services centre.
- **Parcel 21:** On this prominent parcel, a 5-6 storey academic building should be developed, with primary frontage and any public uses addressing Phillip Street and the East Gateway Quad. Service and below-grade parking

access (for limited number of accessible, priority visitor, loading spaces) should be directed via the proposed south service road. Siting of the building should create a view corridor between the East Gateway Quad and Phillip Street. A landmark building element should animate the Phillip Street frontage.

- The East Gateway Character Area includes two key elements of the open space network. They are:
 - **East Campus Plaza:** This plaza should be designed to accommodate an increasing number of pedestrians, traveling to and from the potential RT station (as noted). Preparation of a landscape plan is recommended for this area, to resolve the design of a more urban condition associated with spaces adjacent to the potential RT corridor.
 - **East Gateway Quad:** This quad will become the heart of the character area, and should provide a focus for new building entrances, informal gathering places and proposed pedestrian connections to and from Phillip Street. A landmark element should be located to enliven the quad and terminate view corridors.



EAST WALK PRECEDENT





CHARACTER AREA 6

LAUREL CREEK CORRIDOR

The natural beauty of Laurel Creek strongly influences the physical character of the university, particularly the western side of the South Campus. The Laurel Creek Corridor will ensure this naturalistic setting continues to flourish with few buildings approaching the banks of the creek.



STJ

NH

RING ROAD

PARCEL 9

ML

EV1

PAS

HH

AL

TC

LIB

Legend

Potential Redeveloped 3-4 Storey Academic Building 9

Open Spaces & Pedestrian Connections

Several large grassy lawns and paths provide attractive view corridors to Laurel Creek from places and buildings within the Ring Road. In particular, areas adjacent to Modern Languages, Environment I and II, Needles Hall and Psychology, Anthropology, Sociology provide valuable connections to the creek.

Development along this corridor should be limited to locations where the scope and quality of existing view corridors will not be reduced. These guidelines also direct the shape of development to ensure that built form does not overshadow the quiet character of this natural setting.

Design Guidelines

Parcel 9: This parcel allows redevelopment of Environment II to provide a 3-4 storey building. The building footprint should be minimized to ensure the protection of existing view corridors to Laurel Creek from adjacent buildings and open spaces.





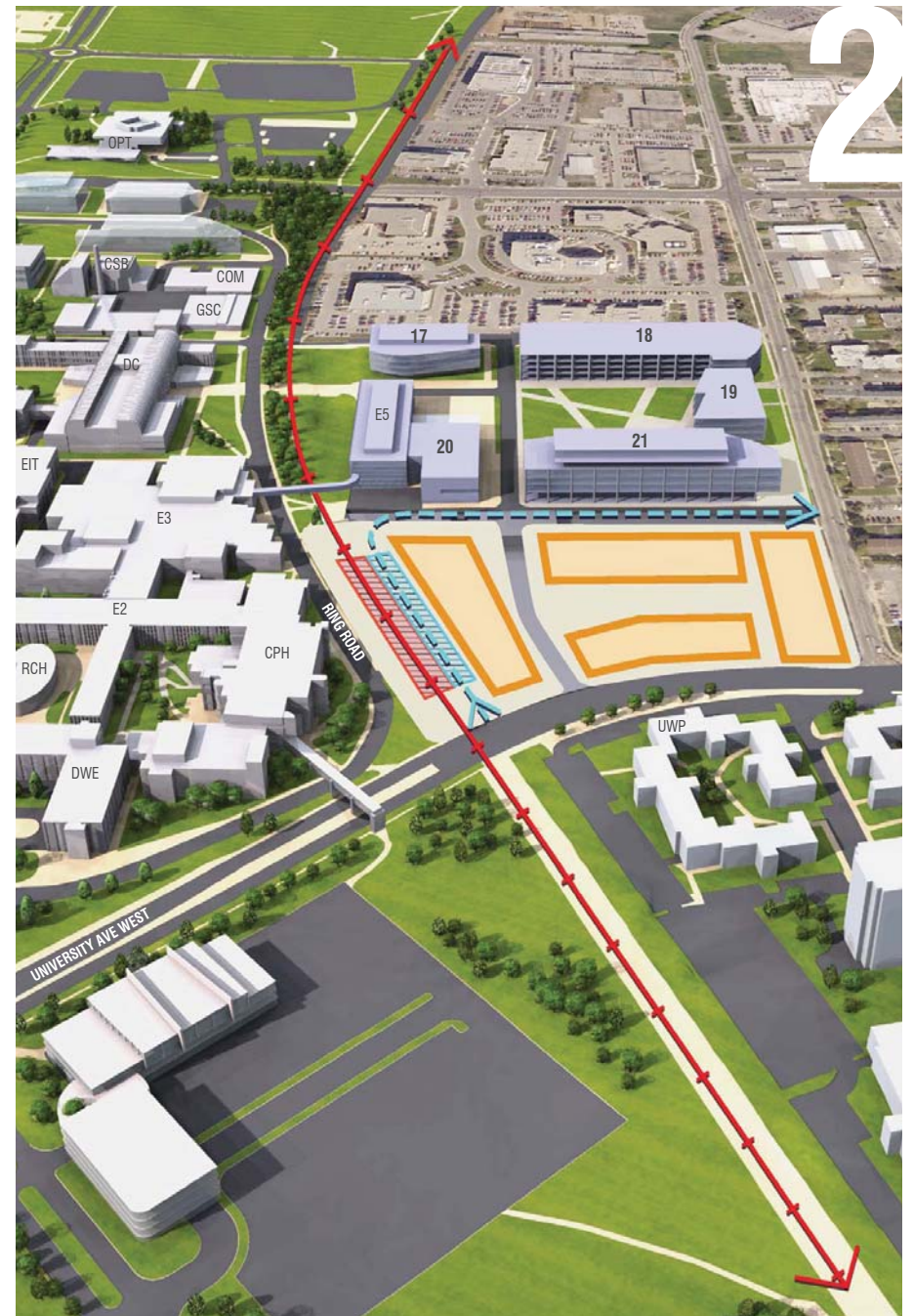
3001



CHARACTER AREA 7

TRANSIT GATEWAY

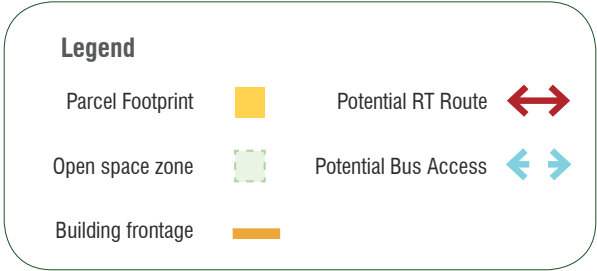
The Transit Gateway responds to the potential of the Region of Waterloo's rapid transit initiative to increase the number of people traveling to and from the campus by transit.



At the time of writing, The Region of Waterloo is considering two potential rapid transit (RT) corridor routes. For either route, the station targeted for the area surrounding the intersection of University Avenue and the rail corridor will establish the heart of the Transit Gateway Character Area. To ensure that this regional initiative addresses the needs of the university community, the Campus Master Plan provides direction in the form of two potential options to guide the station area planning process.

Option One: *minimal change*

This option assumes that the RT line will follow University Avenue to connect the University of Waterloo and Wilfrid Laurier University. It locates an integrated bus and RT station on the south side of University Avenue, framed by the potential development of academic, mixed use and/or parking structures, a large open space and a new bus-only access road connecting University Avenue and Seagram Drive.



Opportunities & Challenges:

- *Minimal reconfigurations required to existing road networks and buildings.*
- *A significant increase in pedestrian traffic crossing University Avenue may require road safety improvements.*

Option Two: *moderate change*

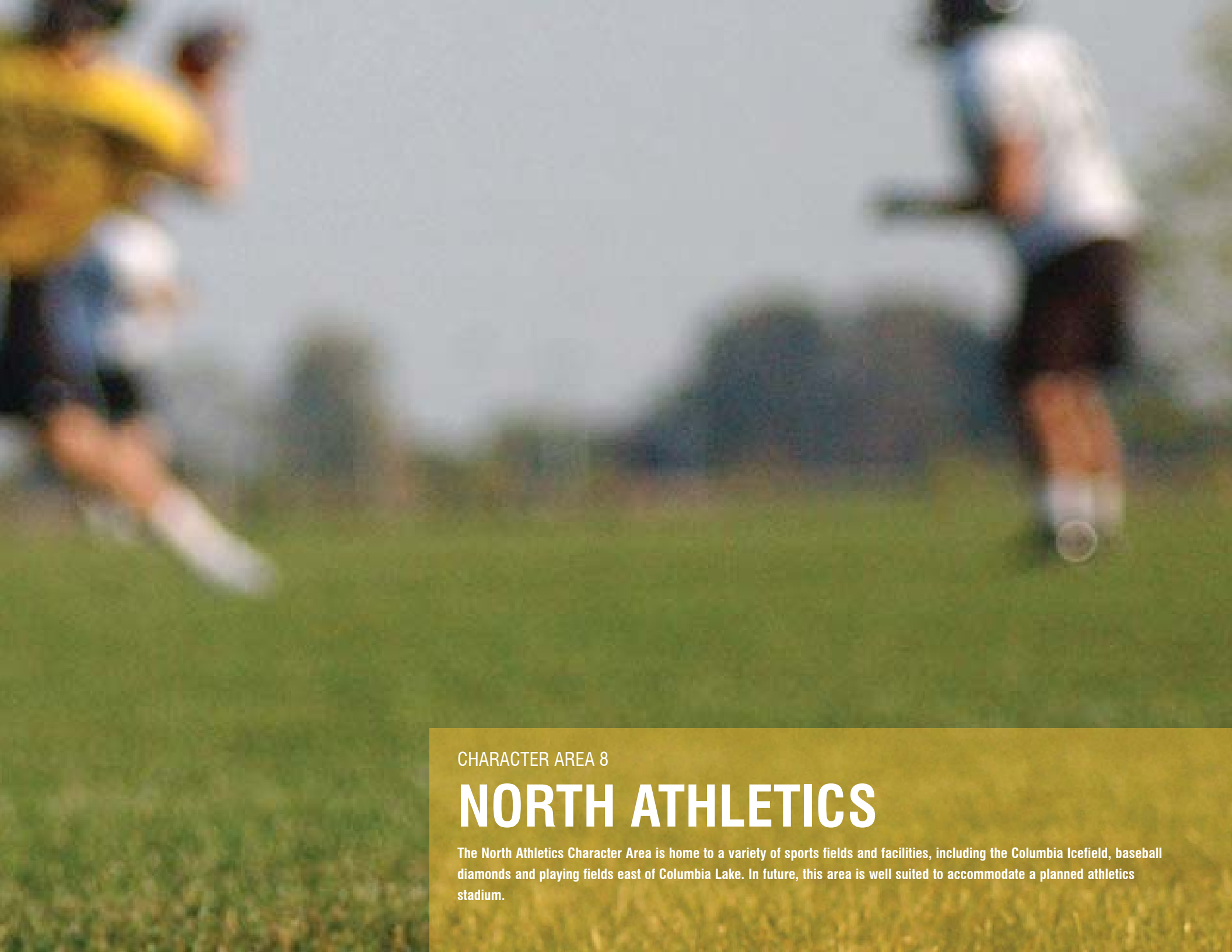
This is the University's preferred option, and assumes the RT line will continue north of University Avenue along the existing rail corridor. It locates an integrated bus and RT station on the north side of University Avenue, and recommends that the university engage in discussions with all related stakeholders to build partnerships that maximize the development potential of station area planning at this location.

Opportunities & Challenges:

- *Station location provides direct access to key buildings and paths on the South Campus.*
- *Opportunities may be found for public and/or private partnerships to maximize development potential of the station area.*







CHARACTER AREA 8

NORTH ATHLETICS

The North Athletics Character Area is home to a variety of sports fields and facilities, including the Columbia Icefield, baseball diamonds and playing fields east of Columbia Lake. In future, this area is well suited to accommodate a planned athletics stadium.



The North Athletics Character Area is home to a variety of sports fields and facilities, including the Columbia Icefield facility, baseball diamonds and playing fields east of Columbia Lake. In future, this area is well suited to accommodate a planned athletics stadium. Guidelines to address the siting and design of a 5,000 seat outdoor stadium to meet the current and projected needs of the university community include the following.

Design Guidelines

- Orient the stadium on a north-south axis to respond to best practice guidelines for outdoor fields, and provide shading from low angle sun via stadium seating and/or a grove of trees on both the east and west sides of the playing field.
- Locate the stadium adjacent to the Icefield to maximize shared use of facilities and equipment.
- Ensure the field size and design meets university and/or other standards.
- Investigate how the design of the stadium can accommodate a range of other sports and/or uses.
- Consider the installation of a temporary dome and artificial turf to accommodate play during winter months.

Legend
Potential Athletics Stadium 23





7

NORTH CAMPUS



The 1992 Master Plan set the framework for the development of the North Campus Research + Technology Park. In 2002, Urban Strategies prepared the more detailed *UW Research and Technology Park Development Handbook and Guidelines*, marking the beginning of an intensive period of private-sector development. This chapter expands the vision for the North Campus R+T Park and identifies further initiatives to support development and enhance the North Campus.



Figure 13: The 2002 *Research and Technology Park Development Handbook and Guidelines* framework for growth

7.1

Development Framework

Since its inception, the North Campus R+T Park has grown at a rapid pace with an average of one new building per year. The resulting employment hub provides benefits for the university through revenue generation, research partnerships, student internships and by further diversifying the university community. With significantly more development capacity, the R+T Park should continue to evolve into a more urban and integrated part of the Waterloo Campus.

The pattern of development established in the 2002 Development Handbook and Guidelines will continue to provide direction for growth in the R+T Park. Not included in the 2002 study, the northern portion of the R+T Park (R+T Phase 2) was planned as part of the Northwest Campus planning study in 2006 (see Chapter 8) and is subject to the same general design guidelines from 2002. Building and parking lot design should be sensitive to the sloping topography of the R+T Phase 2 area. Visual impacts to the residential neighbourhood on Bearinger Road should be minimized through building setbacks and grade-related height limits. Development should be primarily for research and technology, but can include support uses, such as retail and services, as well as some university uses that are not reliant on connectivity to the academic core. A more detailed

urban design study should be conducted for R+T Phase 2 prior to development.

Development throughout the North Campus should support greater connectivity to adjacent areas, including the South Campus, the RIM lands to the east and the Environmental Reserve to the west. A new building at the south entrance at Columbia St. should be developed as a gateway feature and can include a mix of uses, including both academic and research and technology. With large areas currently used for surface parking, opportunities for further intensification exist throughout the R+T Park.

A proposed rapid transit station is located along the existing rail line at Wes Graham Way. This should become a focal point for the R+T Park, and should be carefully designed to enhance pedestrian connectivity, support a greater mix of uses and accommodate additional transit options, such as the proposed campus bus circulator. Development immediately surrounding the proposed transit station should have public uses at grade. To enhance this location as a transit hub, the university should work with the city and region to extend Wes Graham Way across the rail line to connect with Phillip Street.





Figure 14: The North Campus development framework.

7.2

Natural Features & Landscape

Limited vegetation and large surface parking areas throughout the North Campus stand in contrast to the natural character of the adjacent Environmental Reserve. Opportunities for landscape enhancements exist throughout the park, especially in the design and size of surface parking lots. Gateways at the edges of the North Campus and pedestrian sidewalks and paths also offer opportunities for landscape improvements.

The Environmental Reserve will continue to be an important natural area on the campus and an asset for teaching and research. The ecosystem should be appropriately managed to maximize ecological benefits, including stormwater management, and minimize negative impacts from surrounding uses. Large-scale development is not permitted in the Environmental Reserve, though uses that support ecological research and interpretation are permitted where they cause minimal impact. Low-impact athletic facilities will continue to be permitted at the edges of the Environmental Reserve, but further expansion or intensification of existing and planned facilities is not recommended.

7.3

Movement & Parking

The proposed rapid transit station in the North Campus has the potential to significantly change travel patterns to the R+T Park. The proposed campus bus circulator could work in conjunction with rapid transit to further enhance connectivity internally, to the South Campus and to the Northwest Campus. The proposed bridge across Laurel Creek is intended to link the campus bus circulator with the Northwest Campus. It will also serve pedestrians and cyclists, but will be off limits to other motorized vehicles. High quality pedestrian connections in the station area will ensure convenient access to the proposed transit station as well as nearby, weather-protected bicycle parking facilities.

Pedestrian and cyclist facilities will be provided in R+T Park Phase 2 in a similar fashion as in the existing R+T Park and under the direction of the 2002 design guidelines. Linkages to the South Campus will be encouraged through additional Columbia Street pedestrian crossings. Pedestrian and cyclist rail crossings should also be encouraged to maximize connectivity with the RIM lands and Phillip Street corridor to the east. Bicycle parking facilities should be provided with all new developments.

Transportation alternatives to single-occupant vehicles (SOV) will be supported in the North Campus. Tenants of the R+T Park will be encouraged to participate in the university's TDM program or establish a separate program. Generally, parking should be minimized and the negative impacts from surface parking lots, including aesthetic and ecological impacts, should be reduced. Surface parking lots should be broken up into smaller areas through landscaping measures, providing opportunities for on-site stormwater management and reducing visual impacts. Parking requirements for new developments should be reduced, and a shared parking strategy is recommended for multiple buildings to reduce the total number of spaces required. With further growth, parking lots can become building sites, replaced by shared parking structures.

Two additional roads are recommended in the North Campus. A new road will link Wes Graham Way to Bearinger Road along the west side of the R+T Park for access to the Phase 2 area. Wes Graham Way should also be extended at the location of the proposed transit station to connect with Phillip Street. This will improve circulation for all types of transportation and provide better connectivity to the surrounding community.





8

NORTHWEST CAMPUS

In 2006, the University of Waterloo retained Urban Strategies, GSP Group and Paradigm Transportation Solutions to prepare a planning framework for the university's Northwest Campus. The resulting framework was prepared prior to the commencement of this Campus Master Plan update. This chapter includes the findings from the Northwest Campus planning process to ensure incorporation into the Campus Master Plan.



8.1

Introduction

In 2006, the City of Waterloo approached the University of Waterloo to acquire land in order to construct a public library, YMCA, and recreational fields on the Northwest Campus. The university agreed to provide development sites for the facilities through a land lease. The terms of the lease, which were agreed upon in a Memorandum of Understanding between the city and the university, provided the city with a 7-acre site on the Northwest Campus for the construction of the public library and YMCA facilities, as well as a site in the Environmental Reserve for low-impact recreational fields. In return, the city agreed to provide the university with grading and infrastructure for future development of the Northwest Campus within a five-year timeframe.

The Northwest Campus planning framework is an essential tool to guide the grading and infrastructure provided by the City of Waterloo. It outlines key moves to establish the infrastructure and open space system, and creates a development framework for future growth.

To ensure broad university interests were reflected in the Northwest Campus planning framework, the university identified a core group of key stakeholders to participate in its development. This steering committee included representatives of the Board of Governors, senior administration, faculty, staff, and graduate and undergraduate students. In addition, municipal stakeholders were consulted to ensure city and region support, and an on-campus open house was held to communicate the outcome of the planning process.

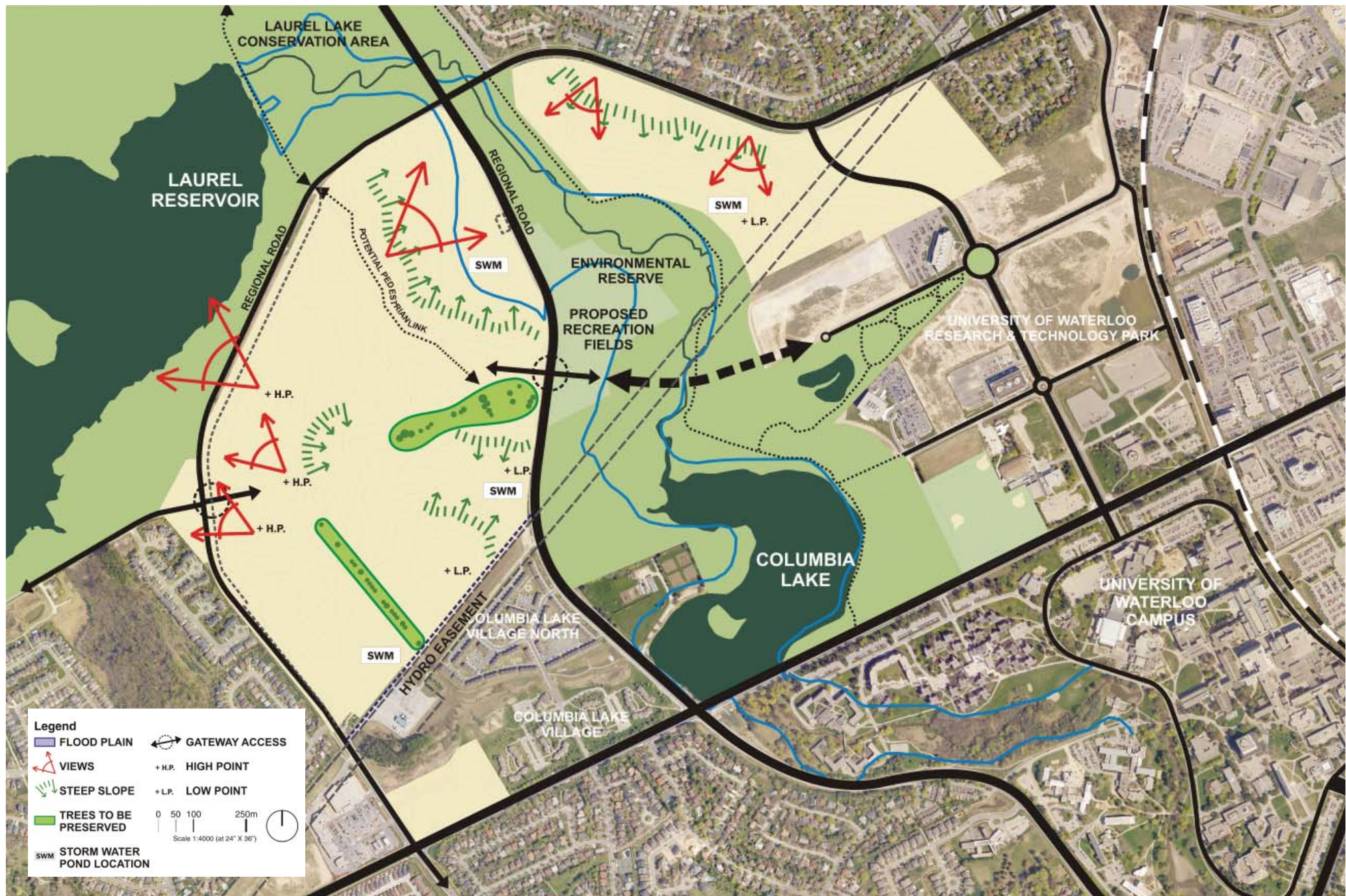


Figure 15: Northwest Campus opportunities and constraints

8.2

Opportunities & Constraints

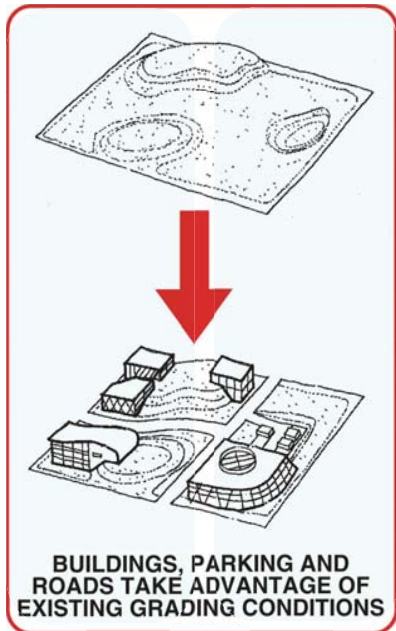
The natural and built characteristics of the Northwest Campus and surroundings present a series of opportunities and constraints that will both limit and facilitate development. These characteristics are a valuable means for reading and understanding the site, and will help to define the nature and character of future development.

While relatively undeveloped, the Northwest Campus lies adjacent to a variety of surrounding land uses. Neighbourhoods of single-family homes are located to the south and west, and an active neighbourhood retail plaza lies at the intersection of Fischer-Hallman Road and Columbia Street. Immediately north and west of the site is the Laurel Creek Conservation Area, a large natural area accommodating a variety of recreational trails and activities. To the east lies the university's Environmental Reserve, with a similar network of trails and natural corridors.

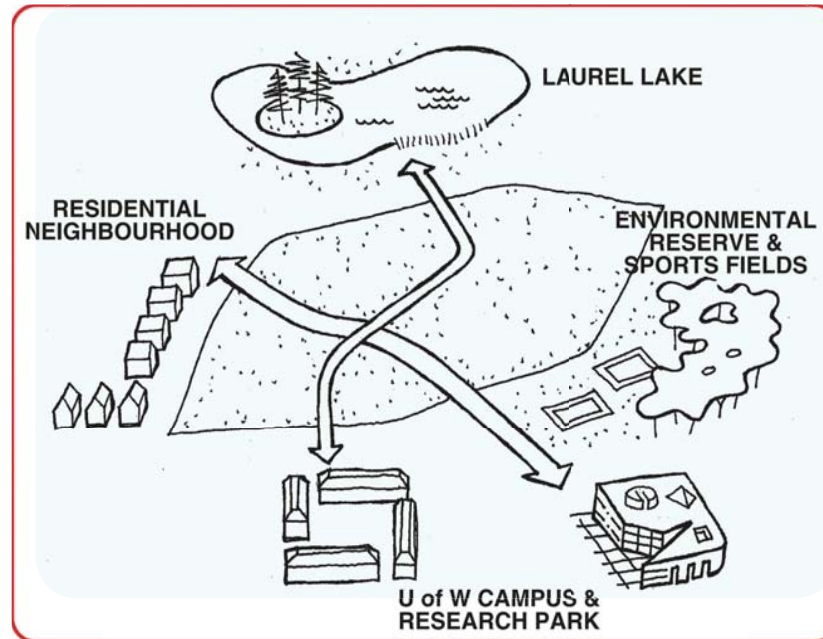
Unlike the North Campus, the Northwest Campus has remained largely undeveloped. Rural in use and character, the 73-hectare northern parcel has a slightly rolling topography with hedgerows dividing the cornfields and a cluster of trees marking the site of the former homestead. Below the hydro corridor and substation, the southern parcel is primarily defined by the Columbia Lake Village residences, which is bisected by a tributary of Laurel Creek and a small woodlot to the west.

The boundaries of this study included a number of parcels surrounding the Northwest Campus that have not received significant planning attention. A recent road realignment at the corner of Laurelwood Drive and Fischer-Hallman Road created two small triangular parcels. North of Bearinger Road, construction of Westmount Road created another isolated parcel of land. The most significant inclusions are the R+T Park Phase 2 area north of the current R+T Park and the area at the northeast corner of Columbia Street and Fischer-Hallman Road, which offer substantial development capacity for university, research and technology, or other uses.

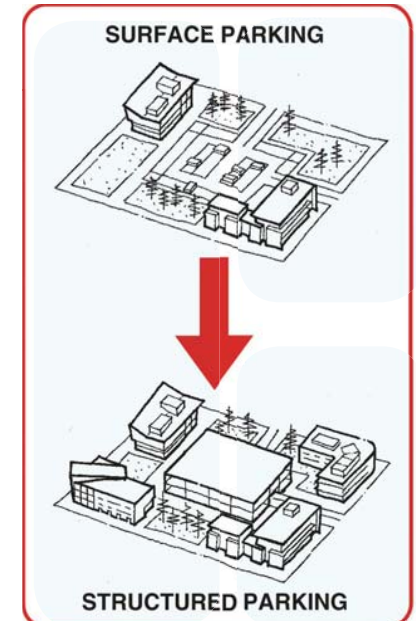




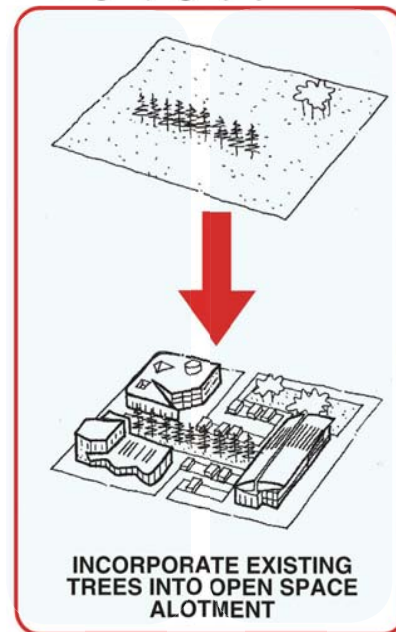
Work with existing topography



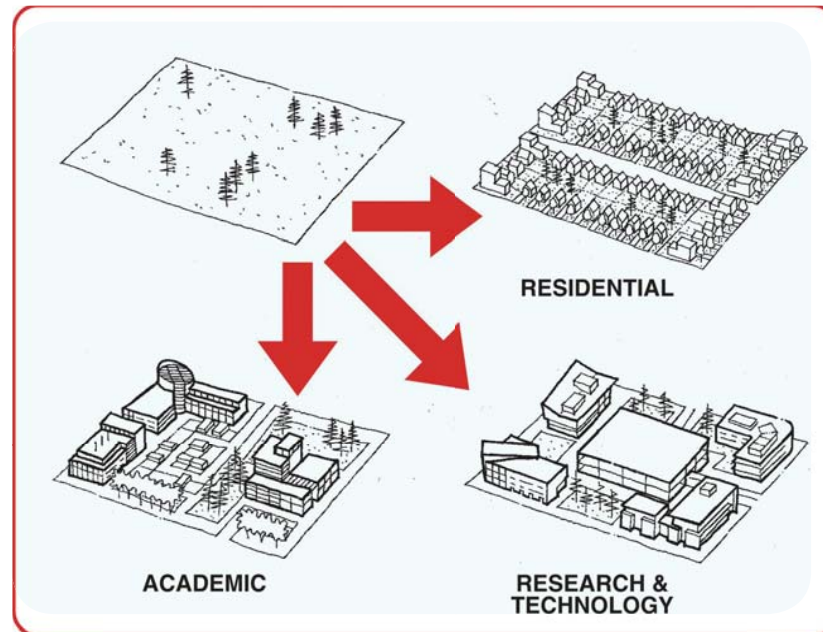
Establish linkages to existing and proposed assets



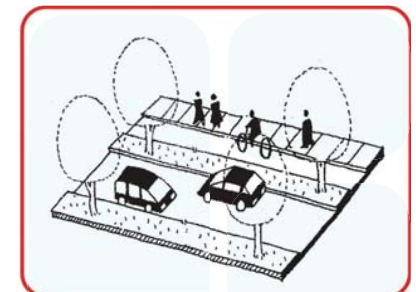
Design parking to be shared and screened from street



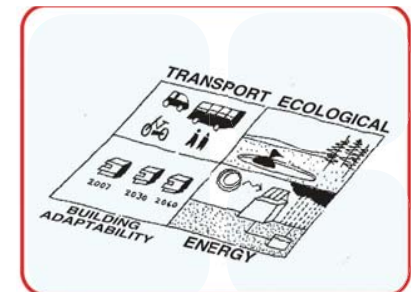
Preserve existing vegetation of significant character



Plan for flexibility in use



Encourage various modes of movement



Design for sustainability

8.3

Principles for Development

Through understanding the university's priorities and goals, and interpretation and analysis of the site, seven draft development principles were identified. These were established early in the planning study to guide the creation of development options and test proposed findings.

1. Work with existing topography

The rolling hills of the Northwest Campus will provide character to future development and create views to and from the site; site grading should be minimized to preserve this character and protect soil quality.

2. Preserve existing vegetation of significant character

Limited vegetation remains on the site, so the existing hedgerows on the site should be protected from future development. These will provide opportunities for future landscaping and open space moves. The woodlot and Laurel Creek tributary should be protected.

3. Establish linkages to existing and proposed assets

The Northwest Campus currently limits connectivity between surrounding uses. Good planning is about integrating communities and the environment, and the planning framework should enhance the linkages between surrounding uses, both natural and built.

4. Plan for flexibility in use

While some aspects of the Northwest Campus can be planned, future development is still very much undecided. The planning framework must allow for a variety of uses while ensuring appropriate infrastructure, movement patterns and open space.

5. Design parking to be shared and screened from the street

Development with minimum parking standards often results in large parking areas, creating unsightly gaps in the landscape and rendering structured parking strategies unfeasible. Regardless of use, the planning framework should seek to reduce demand for parking, protect opportunities for shared or structured parking, and design to reduce the visual impact of large parking lots.

6. Encourage various modes of movement

Though currently surrounded by arterial roads, the planning framework should facilitate movement to and through the site by means other than private automobiles. The planning framework should extend the surrounding trail network into the Northwest Campus for pedestrians and cyclists and maximize transit capability to benefit from future transit and rapid transit improvements. Further, the planning framework should support direct and convenient connectivity to the North and South Campuses.

7. Design for sustainability

The planning framework should implement principles of sustainability to ensure the long-term success and feasibility of the Northwest Campus. Sustainability is reflected in many of the development principles, including protection of existing vegetation, limited grading, flexibility in use to adapt to future needs, and facilitation of movement alternatives.



Figure 16: The Northwest Campus planning framework

8.4 The Northwest Campus Planning Framework

The Northwest Campus planning framework successfully embodies the development principles and finds a balance between the many constraints and opportunities that will define future development.

A key structuring element of the framework is the east to west roadway that efficiently moves people to and through the site. Most importantly, this axis serves as an important conduit for pedestrians and cyclists and is adjacent to most of the existing vegetation, which will be protected as open space. Landscape and open space will play an important role in defining the character of the Northwest Campus, and design guidelines will be used to embed important landscape moves into future development. The stormwater management pond locations provide opportunities for additional landscape treatment.

Access points into the site are located around key features, including the public library/YMCA, the recreational fields, Columbia Lake Village, and the Conservation Area. The road network divides the site into a series of similar-sized parcels that allow for an efficient pattern of development phasing and subdivision.

While a clear structure for development is identified, uses or individual development parcels are not. This is intentional, as full build-out is not anticipated in the near future and intended uses are uncertain. Ten years from now, the university may require a significant parcel of land for a new institute or school, or may even expand the successful R+T Park model. Whatever the use, the framework has been tested against a variety of development options and exhibits a strong underlying foundation that will more than adequately support future needs.



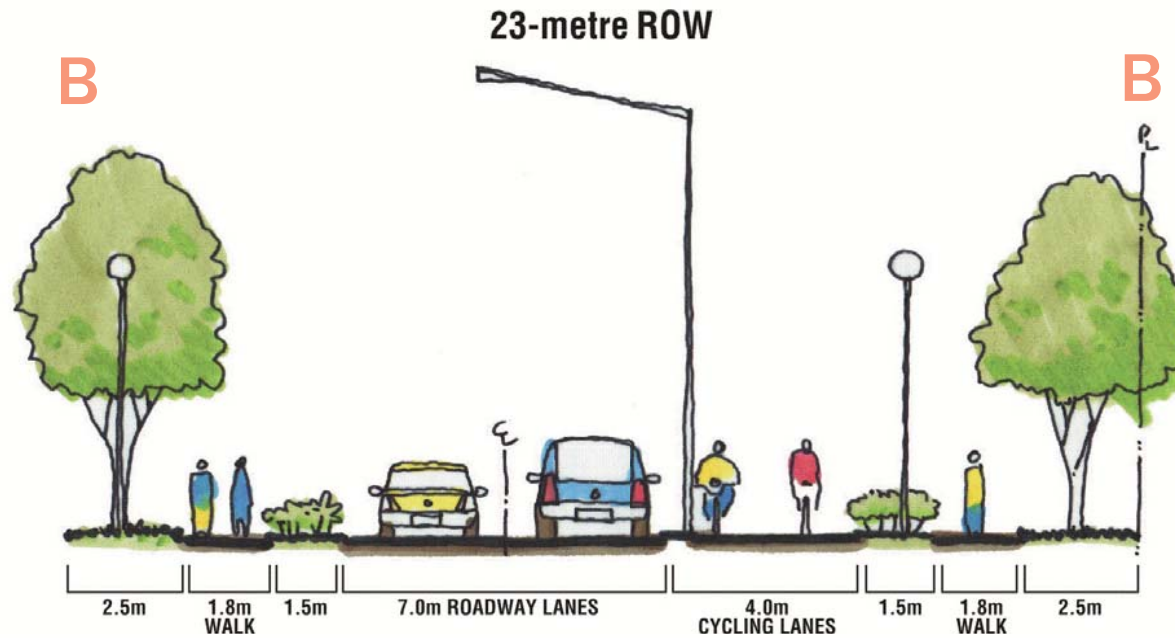
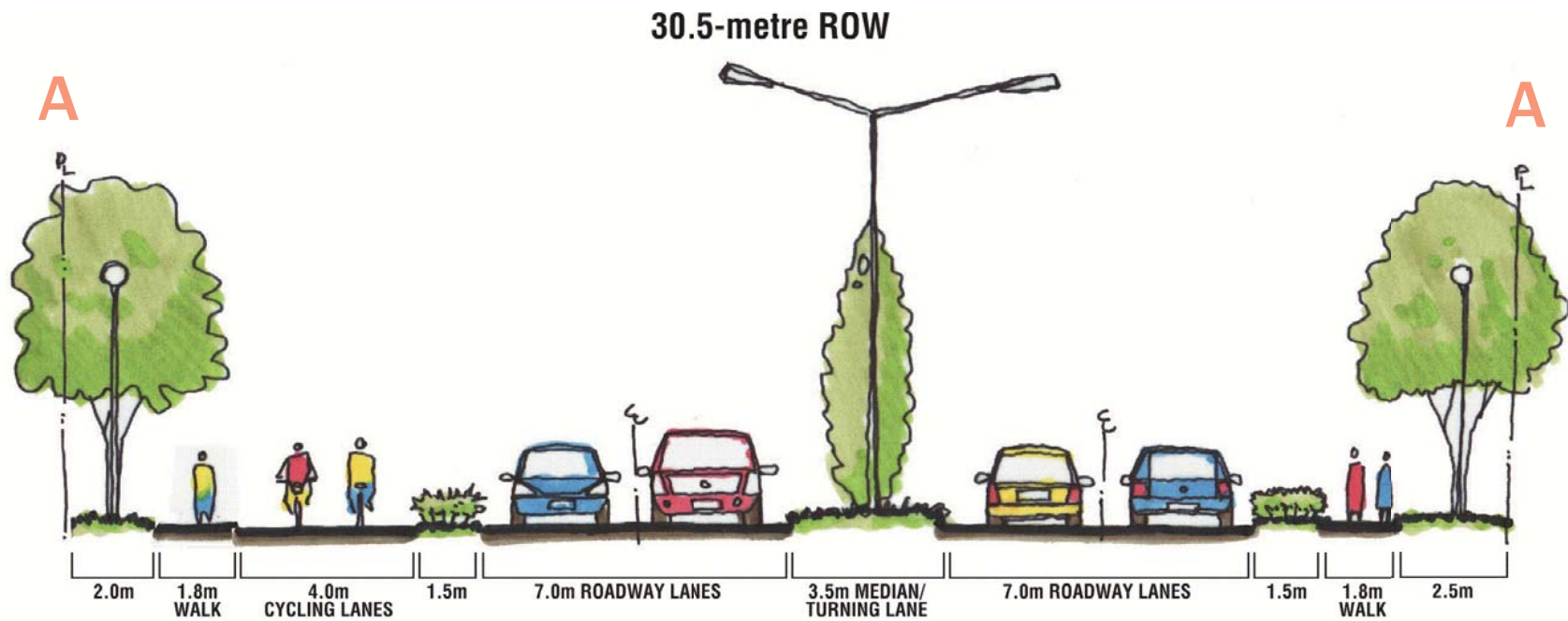


Figure 17: Street sections from the planning framework

Movement & Parking

Encouraging various modes of movement was an essential development principle guiding the Northwest Campus planning framework. One indicator of a well-planned, complete community is simply the presence of pedestrians and cyclists. Achieving this objective requires planning for infrastructure investment (e.g. sidewalks) as well as implementing urban design and landscape interventions.

The streetscape sections highlight the attention given to pedestrian and cycling movement. On the main east-west road corridor, the multi-use trail is located on the south side of the street, facilitating travel between the YMCA/Library and proposed recreational fields with minimal road crossings. The main north-south road corridor includes a similar multi-use trail connecting the Environmental Reserve to the Conservation Area.

The region's proposed rapid transit corridor may transform transit use long before the Northwest Campus sees significant development. The Northwest Campus can maximize connectivity to the rest of the Waterloo Campus and the potential R+T Park

rapid transit station through a proposed campus bus circulator. The circulator, which would be smaller than a typical bus and powered by an alternative fuel source, would cross Laurel Creek via a limited-access bridge and loop within the Northwest and South Campuses. This initiative could reduce the use of private automobiles in the Northwest Campus and the bridge itself would support pedestrian connectivity to the North and South Campuses.

The planning framework seeks to minimize car use through support for transportation alternatives, but people will still use cars and will need to park them. Parking eats up open space, compromises landscapes, negatively impacts the natural environment and encourages driving. A strong parking strategy is required to minimize these effects. The planning framework arranges the larger parcels to support centralized and shared parking, reducing the overall demand for parking spaces and land. This facilitates future conversion to structured parking should development reach supportive densities.





Figure 18: The recreational corridor extending across the Waterloo Campus

Recreation

A key feature of the planning framework is the emerging recreational corridor, which crosses the Waterloo Campus from the South Campus through to the Laurelwood community west of the Northwest Campus. A variety of existing and planned recreational amenities are located along this corridor, developed by both the university and the city. Capitalizing on the east-west pattern of these elements, the planning framework seeks to maximize pedestrian and cycling movement along the corridor to enhance connectivity between each use. Further, the corridor provides valuable connections to existing natural resources, creating opportunities to enhance trailheads in the Conservation Area and the Environmental Reserve. The corridor will also give strong direction for the development of naturalized landscapes and open space in the Northwest Campus.

Opportunities for active transportation and complete pedestrian networks are a key component of sustainable community design. The recreational corridor concept will be an important component of the future success of the Northwest Campus, and speaks to the growing number of public resources made available through the development of the Northwest Campus.

Sustainability

The Northwest Campus planning framework provides strong direction toward sustainable development. Many of the elements embedded in the planning framework, including the proposed campus bus circulator, bicycle and pedestrian facilities, shared parking strategy, and open space protection will ensure sustainable future development. The rational development framework facilitates efficient infrastructure systems, potentially including district heating and advanced stormwater management. Specific measures to implement sustainability and reduce carbon emission can be further identified through design guidelines.



9

IMPLEMENTATION & MANAGEMENT

The Campus Master Plan provides a comprehensive and integrated policy framework for future development decisions. This chapter describes how the Campus Master Plan can be successfully implemented over time. It identifies a series of university projects to be adopted by the university administration as key elements of implementation and makes recommendations regarding how to embed the Campus Master Plan into the university's planning processes.



9.1

Integrating the CMP into Planning Processes

The Campus Master Plan plays an important role in shaping the evolution of the campus. Along with the *Sixth Decade Plan* and the capital plan, it serves as a long-term framework to guide the future of the university. As such, the Campus Master Plan should figure prominently in the university's planning processes. The Campus Master Plan should be referred to at the outset of and during all development planning and design processes so that it can effectively influence project formulation, site selection, design development and review, and project approval. Policies should be adopted that make it easier to comply with the Campus Master Plan than to vary from it. Project proponents should follow a transparent process that explains how their project conforms to the Campus Master Plan or thoroughly justifies any variation from it. Significant variances from the Campus Master Plan should require the approval of the Board of Governors' Building and Properties Committee.

Project planning processes should both inform and seek input from stakeholders on and off campus at regular intervals.

Project planning processes should be formalized and made available to the university community, and consultation should be built into the overall process. The university should work with the city and region to update applicable official plan and zoning by-laws to reflect the recommendations of the Campus Master Plan, as appropriate.

9.2 Strengthening Planning Processes and Funding Models

Effective implementation of the Campus Master Plan requires a strong, integrated planning function at the university that involves all affected administrative and academic units and engages stakeholders in the planning process. The campus planning function at the university will require the appropriate level of resources to manage existing and new responsibilities that flow from the Campus Master Plan, including involvement in shaping and monitoring the planning and approval of capital projects; spearheading and coordinating the implementation of university projects; stakeholder and community consultation; and maintaining, monitoring and updating the Campus Master Plan.

There are financial challenges that the university will need to overcome to successfully implement the Campus Master Plan. The following section identifies a number of university projects that, either because of their nature or their scale, do not have existing champions or funding sources. New funding models for shared campus resources such as these are required to ensure implementation. The university may consider a levy on new building projects to create funds for essential hard infrastructure (e.g. utilities, lost parking) but also “soft” infrastructure (e.g. landscape, bicycle facilities, etc.) considered equally essential.



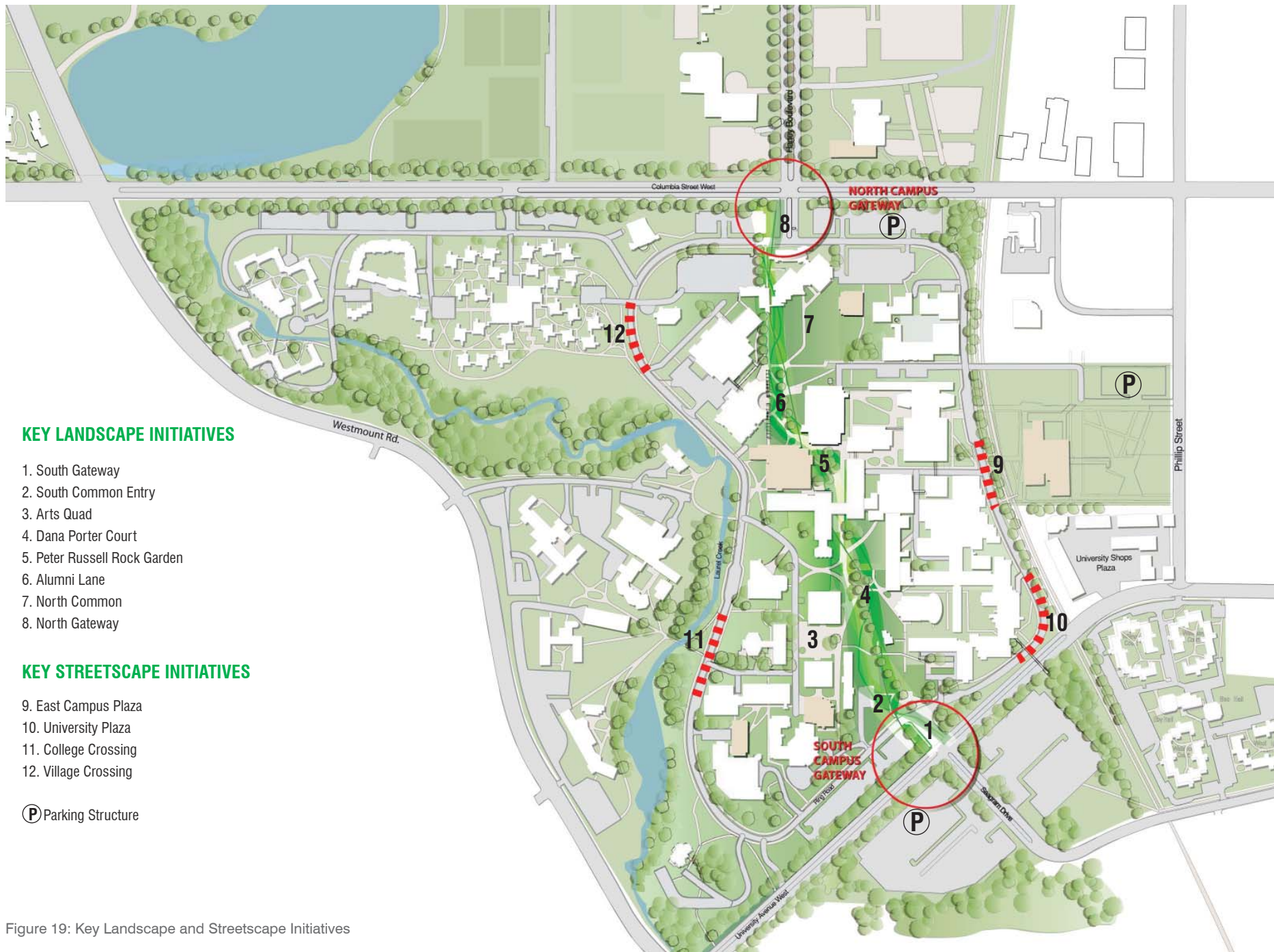


Figure 19: Key Landscape and Streetscape Initiatives

9.3 Supporting University Projects



Because of their scale or lack of a natural advocate, a series of initiatives in the Campus Master Plan require coordination of funding and delivery by central administration. Many are landscape initiatives and elements of the campus's social infrastructure, but they also include the campus bus circulator, structured parking and new athletic facilities. The university projects can be implemented over time as opportunities arise and funding becomes available, though attempts should be made to coordinate with adjacent development projects to reduce costs. Specific university projects are discussed below:

- The renewal of South Campus Hall to accommodate new and existing uses is a priority project given its potential to enhance the primary entrance to the university and provide much needed space for campus life functions.
- The various landscape initiatives that contribute to the revitalization of the South Campus will be implemented over time and require significant funding. Individual landscape projects could be supported by private and corporate donors, given the potential high profile of these initiatives. Adjacent faculties may also be a source of funding.
- The streetscape initiatives and related traffic calming improvements to the Ring Road can be implemented over time to enhance the quality of the landscape, improve wayfinding, reduce vehicular speeds and minimize the barrier effect of the Ring Road.
- Implementation of a campus bus circulator will be important both symbolically and functionally to link the South, North and Northwest Campuses and support new development in the Northwest Campus. This initiative should be undertaken following new development in the Northwest Campus, though its structure and function depends on the outcome of the proposed rapid transit corridor. Funding may be derived from the transportation demand management program.
- The university should establish a funding source for structured parking early on to prepare for future loss of surface parking lots. Proceeds from the transportation demand management program will provide partial support, but other funding sources are necessary.
- The planned stadium on the North Campus should include multi-sport facilities with artificial turf and potential for a winterized dome to maximize its use and effectiveness. Funding may be derived from student levies, donors or central administration.



9.4 Phasing New Development

The Campus Master Plan calls for a series of large and high profile projects on the South Campus. Intended to bring the image of the campus in line with the university's international reputation, these projects will take time and significant funding to realize. Many of these projects are located on the South Gateway and South Common, requiring a phasing plan to ensure that revitalization takes place in a controlled fashion. Though impossible to commit to a strict timeline, the following considerations should influence the steps by which redevelopment occurs.

- Prior to the removal of the Physics classroom wing (PHY), the planned science building should be constructed south of Biology I (B1).
- In the long-term, it is anticipated that the Grad House (GH) may no longer exist in its current configuration. However, the development strategy for the South Common allows

for significant new development prior to any significant changes to the Grad House.

- It is recommended that no further renovations be carried out on South Campus Hall (SCH). A replacement student centre should be constructed immediately west of SCH prior to its removal.
- The removal of SCH will allow the construction of a new gateway academic building in the same general location.
- The South Common and South Gateway key landscape initiatives should be phased to ensure early implementation. Following development of a landscape master plan for the entire area, open spaces not affected by redevelopment can be renewed according to this plan.
- In general, campus growth may require academic and non-academic units to relocate from traditionally held buildings to ensure efficient use of resources and optimize adjacencies.

9.5

Monitoring the Success of the CMP

The Board of Governors' Building and Properties Committee, with the assistance of the President's Advisory Committee on Design, should be charged with oversight of the Campus Master Plan and work with the university architect's office to prepare biennial reports to the Board of Governors that indicate the university's progress in meeting the plan's objectives, review recent projects in relation to the policies and guidelines of the plan, prioritize remaining university projects and other initiatives identified in the Campus Master Plan for follow-up, add new goals as appropriate, and update plan elements as needed. A more comprehensive review and update of the Campus Master Plan should occur every five to ten years to ensure that it continues to be an effective guide.

The Campus Master Plan is an integrated document that identifies the built, social and natural environments that will support the university's academic mission for next 25 years. However, as academic and administrative goals change, new technologies and fields of study emerge and social patterns evolve, updates to the Campus Master Plan will be required. The Campus Master Plan should be checked periodically with regard to such changes and against development that has occurred under its direction to ensure that it remains a living document, responsive and relevant to the university's needs.

