



Mid Campus Neighbourhood Plan

October 2001



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MID CAMPUS NEIGHBOURHOOD PLAN

University of British Columbia

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1. INTRODUCTION

1.1 Overview

In July 1997, the Greater Vancouver Regional District adopted an Official Community Plan (OCP) bylaw that covers the UBC campus.

In November 2000, the UBC Board of Governors adopted the UBC Comprehensive Community Plan (CCP) to provide further guidance for campus development and to fulfill, in part, OCP requirements related to local area planning. The GVRD has endorsed the CCP as being consistent with the OCP.

The GVRD and UBC have also signed a Memorandum of Understanding (MOU), dated December 18, 2000, to establish relations between the two parties and processes for neighbourhood planning and development approval.

The next stage of local area planning involves preparation of more detailed neighbourhood plans for each of the eight plan areas identified in the OCP and CCP. These plans will require the approval of the GVRD and the UBC Board of Governors, as outlined in Section 1.3. This neighbourhood plan covers one of these local areas, bounded by East Mall to the east, Thunderbird Boulevard to the north, Marine Drive to the west and 16th Avenue to the south, (“Mid Campus Neighbourhood”).

1.2 Relationship of Neighbourhood Plan to OCP, CCP and MOU

This neighbourhood plan has been prepared in accordance with the policies and principles of the OCP, CCP and MOU. It provides further details to guide development within the Mid Campus local area.

The OCP for UBC applies to the entire campus and two foreshore lots in Pacific Spirit Park, and is intended to guide the long-term evolution of the campus into a “complete community” that balances regional growth management objectives with the University’s academic mission. The OCP sets objectives and targets for land use, green space, community services and transportation, with a particular focus on “non-institutional development.” Most non-institutional development is expected to occur within eight plan areas identified in the OCP, surrounding the academic core. These eight plan areas are to be the subject of further area planning work prior to any non-institutional development.

The CCP describes in more detail how the OCP’s objectives and targets will be met, and outlines how the development capacity established by the OCP will be distributed within the eight plan areas. The CCP goes further than the OCP in establishing a vision and

goals for campus development and incorporates elements from other UBC documents such as the 1992 Main Campus Plan, TREK 2000, Principles for Physical Planning at UBC (A Legacy and a Promise) and the UBC Strategic Transportation Plan. Sets of principles and other parameters are established in the CCP to guide the preparation of neighbourhood plans.

The GVRD/UBC MOU establishes a number of agreements between the GVRD and the University. It consolidates and clarifies understandings regarding implementation of the OCP and achievement of targets therein; it establishes process for preparation of neighbourhood plans and issuance of development permits; it acknowledges an outline of a proposed governance structure; and it establishes a dispute resolution process.

1.2.1 Purpose of the Neighbourhood Plan

The OCP for UBC provides a vision and goals for future campus development, broad land use designations, and the objectives for more detailed planning. The purpose of the CCP and the Neighbourhood Plans is to interpret and apply the OCP's policies and development requirements to the eight specific plan areas identified in the OCP (see Schedule C of the OCP) as a framework for development approval. Non-Institutional development in an area targeted for neighbourhood planning (see Schedule C of the OCP) will occur only after completion of a Neighbourhood Plan.

Each Neighbourhood Plan will contain a detailed land use plan, development controls, design guidelines, and servicing and transportation strategies, consistent with applicable portions of the OCP and CCP. When taken together, the CCP and Neighbourhood Plans fulfill the area planning requirements set out in the OCP and MOU.

It is the intention that neighbourhood planning be undertaken for areas of significant Non-Institutional development and areas of special sensitivity. The OCP identifies such locations on Schedule C of the OCP document.

1.2.2 Planning Issues Arising from OCP and CCP

Neighbourhoods will be developed over time. Mid Campus Neighbourhood will be one of the first to commence development, but full "build out" of the neighbourhood is expected to take over fifteen years.

Some of the lands within the Mid Campus Neighbourhood (west of West Mall) are designated as *future housing reserve* in the OCP and CCP. These lands will be held in reserve for academic or future residential use. The current use of these lands or an appropriate institutional use will be continued until such time as an OCP amendment is approved designating them as suitable for residential development.

1.3 Process Followed in Preparing the Neighbourhood Plan

The preparation of each neighbourhood plan follows a process outlined in the MOU. Technical input is provided through a Technical Advisory Committee. Public participation is assured through an Advisory Planning Committee as well as through public meetings. Adoption of the neighbourhood plan consists of approval in principle by the UBC Board of Governors, followed by review of the plan by the GVRD. Once the GVRD Board of Directors endorses the plan as being consistent with the OCP and fulfilling the requirements for local area planning, the UBC Board of Governors considers the neighbourhood plan for final adoption.

2. DESCRIPTION OF THE PLAN

2.1 Interpretation

In this neighbourhood plan, terms shall have the same meaning as in the Official Community Plan. If any provisions of this neighbourhood plan are found to be at variance with the Official Community Plan, the OCP shall prevail.

2.2 Approach

2.2.1 Planning Objectives

- (a) Support and further the objectives of the OCP, in creating a more complete community on UBC campus, with a strong emphasis on pedestrian and bicycle travel, good access to transit, and a reduced need for commuting.
- (b) Support the objectives of the UBC planning principles, creating places that inspire and enrich the lives of those who learn, work, live and visit here.
- (c) Create a new residential neighbourhood with a distinct “university town” character that combines residential use with academic influences, complements the adjacent core area, and provides a high quality of life for its residents.
- (d) Plan for a community that includes a multi-generational, multi-cultural population, and that accommodates residents in housing with a variety of tenure and affordability options.
- (e) Encourage an emphasis on pedestrian and cycling modes of travel, and provide for future transit service to the neighbourhood.

- (f) Promote neighbourhood interaction in a variety of ways: by providing community gathering places; by providing a variety of park and open spaces offering differing experiences; by promoting linkages to surrounding areas; by creating places which are meaningful and distinctive.
- (g) Establish a sense of arrival. The entry from Marine Drive to West Mall must serve to identify both entry to the campus and arrival at the neighbourhood, and should recognize the adjacent Botanical Garden as an important element of the arrival experience.
- (h) Reinforce the important linear open space that connects this neighbourhood to other areas of campus, along the Main Mall greenway. This greenway is the spine of the campus. Integrate open spaces and the circulation system with this important linear feature.
- (i) Provide parks and open spaces within the neighbourhood to offer a wide range of leisure amenities and recreation opportunities.

2.2.2 Existing Physical Environment and Context

- (a) Mid Campus Neighbourhood is bounded by East Mall to the east, Thunderbird Boulevard to the north, Marine Drive to the west and 16th Avenue to the south.
- (b) Surface parking lots comprise the predominant existing land use in this neighbourhood.
- (c) The neighbourhood includes some existing university-related research buildings including FERIC and Forintek, located on the west side of East Mall north of Stadium Road.
- (d) The area adjoins existing student housing, including Thunderbird Residences and Totem Park Residence.
- (e) The Horse Barn, located at Thunderbird and Main Mall, is a building of historical significance for the area.
- (f) The CCP permits higher densities and higher buildings in the northern and eastern portions of the area, which generally diminish towards the southwest, with the exception of a high rise site located adjacent to the forested area.
- (g) The forested area (Rhododendron Wood) is a valuable asset to the neighbourhood.

- The forest has not had active use and access is overgrown.
- (h) West Mall currently invites high-speed vehicular traffic due to the high-speed right turn lane from SW Marine Drive.

2.2.3 Planning Response

- (a) The OCP and CCP designate the area for predominantly residential uses. As this neighbourhood adjoins the academic core and has strong linkages to the core, an emphasis is placed on housing which directly supports the academic mission.
- (b) Housing types are primarily apartments and townhouses with a strong orientation to the street. This will typically be accomplished through direct entrances from the sidewalk to the ground floor units. This will encourage pedestrian travel, provide more street activity, and improve neighbourhood safety via “eyes on the street”.
- (c) The road system and open space are elements of a “fine grained” development pattern, with many connections to encourage pedestrians and cyclists. Roads are designed to restrict vehicle speeds and enhance the pedestrian realm, and on-street parking also acts as traffic calming.
- (d) The Main Mall greenway extends through the Mid Campus Neighbourhood. It will be the defining linear park feature within the neighbourhood, connecting destinations within the neighbourhood to adjacent areas of campus. Ensure that parks, walkways and the road system are well connected to the Main Mall greenway. Ensure that the greenway is designed with points of interest to define connection points and other nodes, and create a strong sense of place.
- (e) The phasing of the Mid Campus Neighbourhood and the changeover of surface parking lots will reflect the reduction of commuter vehicles as transportation demand policies of the STP are implemented over time. Parking for events at Thunderbird Stadium and Botanical Garden will be affected as “B” lot is developed, and the use of parkades will likely be required in the future. Parkades are within a one kilometer walking distance of both facilities, and shuttles may be possible for events.
- (f) Rhododendron Wood, adjacent to Main Mall, will be improved to enhance its recreation value to the neighbourhood.
- (g) The Horse Barn is a historical feature in the area. Retention of the Horse Barn, if feasible, and addition of a community facility will provide the neighbourhood with a community focal point. These facilities would complement the community

centre proposed for South Campus, which is a requirement of the OCP.

- (h) The entry from SW Marine Drive traveling east into the neighbourhood will both define a campus entry and convey a sense of arrival into the residential neighbourhood. Entry design details must reflect this dual function, and should recognize the role that the Botanical Garden can play in defining and enhancing this entry.
- (i) The road connection from SW Marine Drive should be realigned to calm traffic while allowing for the future possibility of transit. West Mall and Thunderbird Boulevard should be reduced in width to become neighbourhood collector roads, with a cross-section as per Diagram ID-3 (with transit).
- (j) Lands west of West Mall are designated as *future housing reserve*. These lands will be held in reserve for academic or future residential use. The current use of these lands or an appropriate institutional use will be continued until such time as an OCP amendment is approved designating them as suitable for residential development. These lands are not discussed in this Neighbourhood Plan, except where utility corridors through them are necessary to ensure efficient servicing of the Mid Campus lands to the east.

2.3 Land Uses and Densities

2.3.1 Overview

The majority of Mid Campus Neighbourhood is designated for residential use. University related research use, as designated in the OCP and CCP, is located along Stadium Road and East Mall.

A summary of land uses, densities and unit types appears in Table 'A'. The configuration of parcels and spaces is shown on Plan P-7, the Land Use Plan.

2.3.2 Residential Use

The CCP identifies 58,113 m² of land area for residential use within the neighbourhood, and projects that 709 dwelling units will be provided. Of the 709 units, it is projected that a minimum of 30% will be rental units (approximately 213 units) and the remaining 70% (approximately 496 units) will be available for purchase. The CCP also calls for at least 213 of the units to be ground-oriented.

Up to 85,062 m² of gross buildable floor area will be accommodated in the residential areas. This works out to an average FSR of 1.46 for this neighbourhood, not including the

future housing reserve.

The CCP indicates how the land use statistics for this neighbourhood fit with the overall totals for all CCP areas. (See CCP Tables 1 and 2). This neighbourhood has the following characteristics in relation to overall CCP totals:

- Density is higher than average (FSR = 1.46 compared to 1.2 average, and units/net hectare is 122 compared to 100 average)
- Rental unit percentage is higher than average (30% rather than 20%)
- Ground-oriented percentage is lower than average (30% rather than 40%)

These residential statistics reflect the particular characteristics of this neighbourhood – close to the academic core and to transit, with a strong emphasis on housing for UBC faculty and staff, and with smaller units sizes to promote affordability. Where building form is suitable (e.g. townhouses), dwellings are permitted to contain secondary suites.

2.3.3 Research Use

Two sites lying to the west of East Mall, on either side of Stadium Road, are designated in the OCP and CCP for university-related Research. The site at the northeast corner of Stadium Road and West Mall is also designated for university-related Research, for a total of 99,184 m² of land area. The sites are indicated on Plan P-7.

2.3.4 Ancillary Uses

The following ancillary uses are allowed within all land use designations:

- day care
- local commercial – e.g. corner store or coffee shop
- live/work (home occupations consistent with a residential area)
- community buildings.

2.4 Parks & Open Space

2.4.1 Provision of Parks and Leisure Services

The UBC Management Plan for Parks and Leisure Services indicates that the following facilities should be provided to serve the eventual population of Mid Campus (including the Future Housing Reserve, when developed):

- playground facilities within the neighbourhood (typically within 400m of most residences);
- access to tennis courts at Thunderbird Park (access equivalent to one court);
- access to playing field at Thunderbird Park (access equivalent to one playing field)

- for 15 hours of use per week);
- access to baseball diamond (access equivalent to one ball diamond for 10 hours per week);
- trails and greenways – both within the neighbourhood and connecting through the community as per the CCP;
- natural parks areas – including Rhododendron Wood and access to Pacific Spirit Park; and
- “aesthetic” areas – those areas where visual enjoyment is the predominant benefit, located at entries and selected locations through the neighbourhood.

UBC will provide facilities within Mid Campus neighbourhood and Thunderbird Park as per the Parks & Leisure Services Management Plan. With the provision of these facilities as the neighbourhood is developed, residents will have a high standard of neighbourhood recreation amenities. In fact, open space within the neighbourhood is provided at a ratio of 0.98 hectares per thousand residents, which far exceeds the 0.54 hectares per thousand residents which is recommended in the Management Plan.

Other facilities such as the Aquatic Centre and Thunderbird Winter Sports Centre will also have access provisions for residents.

2.4.2 Neighbourhood Parks & Open Space

Mid Campus Neighbourhood parks and open spaces will provide both active and passive recreational experiences. These spaces will also provide linkages for cyclists and pedestrians, accommodating the diagonal desire-lines of travel. The OCP contains a requirement for “useable neighbourhood open space”, based on anticipated population. The useable neighbourhood open space provision for this neighbourhood is 13,984 m², as identified in the CCP.

The plaza to be created in the vicinity of the Horse Barn, at Thunderbird Boulevard and the Main Mall greenway, will be a significant focal point for the neighbourhood. A space of similar size exists across Thunderbird Boulevard, in the academic core. These spaces should be designed to complement each other and reflect their importance as a campus focal point.

A concept plan for the open spaces within the neighbourhood will be developed, to identify locations for children’s play areas for various age groups, community gardens, “rough” habitat areas and other elements of landscape and recreation.

The forested area (Rhododendron Wood), which is a significant open space feature for the campus, is located within the Mid Campus Neighbourhood. The forest offers a different recreation experience than the surrounding parks and open space. Access will be

improved and the forest rehabilitated to enhance its recreation value while respecting its ecological attributes. Its rigid edges will be softened by encouraging conifer planting on adjacent sites.

2.4.3 Greenways

A greenway is designated in the OCP along Main Mall. The Main Mall greenway through the Mid Campus Neighbourhood will be a designated non-vehicular landscaped route for pedestrians and cyclists. The greenway will be a “linear” park, linking the academic area to the neighbourhood and leading to the South Campus area and the elementary school.

Immediately south of Thunderbird, the Main Mall greenway will be adjacent to the community facilities of the Horse Barn and a park space. The greenway will feature a plaza in the vicinity of the Horse Barn. From this area walkways both southeast and southwest will link into others areas of the neighbourhood. Main Mall greenway will travel past the Rhododendron Wood and offer an entry point into the Forest. The greenway will offer a variety of experiences; focal points, gateways and connections; formal and informal; urban and natural.

2.5 Circulation and Transportation

2.5.1 Transportation Objectives

- (a) Support the OCP objectives of reducing single occupant vehicle commuting, increasing the use of transit, and creating a fine grained pattern of development and circulation that will encourage pedestrian and bicycle travel.
- (b) Establish a road system that integrates with the University grid, provides a residential character with slow travel speeds, and provides a sense of entry and easy way-finding.
- (c) Ensure that transit can be accommodated along Thunderbird Boulevard and West Mall in a manner that provides convenient access for transit users, efficient operation for buses and safety for all users of the street.
- (d) Encourage cycling by providing vehicular travel lanes of sufficient width to safely accommodate cyclists along with vehicular traffic, and by providing bicycle markings where appropriate. Design greenways and walkways to also accommodate safe cycling.
- (e) Provide mechanisms for traffic calming. Pedestrian safety and priority should be emphasized at pedestrian crossings through the use of curb extensions, textured

paving, wheelchair ramps and raised crosswalks.

- (f) Highlight the pedestrian and cycling emphasis of the neighbourhood by establishing routes that relate to desire lines and are easy to follow. Provide pedestrian connections through the area, both within the Mid Campus Neighbourhood and into other adjacent campus areas.
- (g) Utilize the road standards described in the CCP for internal local roads, and ensure that design details such as paving, streetlights and street furniture match or complement those used on roads in the academic core. Ensure that street design considers the following performance criteria: safety, ecology, community building, aesthetics and long term investment in high quality materials.
- (h) Through these neighbourhood-based initiatives to reduce dependence on automobiles, help to minimize the volume of single occupant vehicles travelling to and from the UBC campus.

2.5.2 Relationship to Other Plans

This neighbourhood plan is consistent with and provides additional detail to support other transportation related documents including the Official Community Plan, the Strategic Transportation Plan, the Comprehensive Community Plan and the Memorandum of Understanding, as detailed below.

- (a) The Official Community Plan (OCP) contains a variety of provisions relating to transportation demand management (TDM), illustrates an overall access plan for UBC, and provides details of road classifications and potential transit routings. This neighbourhood plan maintains the road classifications and reinforces the transit routing described in the OCP, and contains provisions to support TDM targets in the OCP.
- (b) The Strategic Transportation Plan (STP) lays out a comprehensive and integrated transportation demand management strategy. Policies in the STP include reduction of 24-hour single occupant vehicle commuter traffic volumes to and from UBC. The Mid Campus Neighbourhood Plan complies with and reinforces this strategy by emphasizing cycling and pedestrian access, and by providing housing on campus.
- (c) The Comprehensive Community Plan (CCP) builds upon the policies contained within the OCP and STP. The CCP provides five key transportation principles:
 - principles for orientation;
 - principles for safety and convenience;

- principles for sustainable neighbourhood circulation;
- principles for transit; and
- principles for parking.

Circulation and access within the Mid Campus local area are based upon these key principles.

- (d) The GVRD/UBC Memorandum of Understanding (MOU) establishes further targets and actions to build on Transportation Demand Management success to date, in pursuit of the GVRD's goal of reducing SOV's by 20% and increasing transit ridership. This neighbourhood plan will support the MOU objectives.

2.5.3 Description of Road Network

The OCP, STP and CCP designate Thunderbird Boulevard, East Mall and West Mall as collector roads. These roads will continue to function in these capacities. Thunderbird Boulevard and West Mall will be reduced in width to be consistent with the "Collector road with transit" cross-section in the CCP and in Diagram ID-3 of this plan. Stadium Road and all other roads in the neighbourhood are designated as local roads, and will utilize the local road cross-section established in the CCP, and shown in Diagram ID-4 of this plan.

2.5.4 Pedestrian and Cyclists

Pedestrian routes and pathways throughout the neighbourhood will provide access to parks, open spaces and buildings. The Main Mall greenway is the spine of the neighbourhood, and linkages are provided to this spine in accordance with the diagonal desire lines of travel.

Provision for cyclists on Thunderbird Boulevard and West Mall is by way of a sufficiently wide travel lane to accommodate vehicles and cyclists side by side. The travel lane will be marked along its outer edge with bicycle symbols. All local roads also accommodate cyclists. Due to low traffic volumes and speeds, no separation or bicycle markings are needed on local roads.

2.5.5 Transit

Thunderbird Boulevard west to West Mall, and West Mall from Thunderbird to SW Marine Drive are designated in the OCP as transit routes.

UBC also proposes that future transit or shuttle services be provided along East Mall.

2.6 Sustainable Community Strategies

2.6.1 Diversity

This neighbourhood will be an inter-generational and multi-cultural community. Various housing types and forms of tenure will be provided, to accommodate those affiliated with the university as well as other residents. Both market and non-market housing is to be provided.

2.6.2 Compact and Complete Community

A fundamental aspect of a sustainable community is to use land efficiently and to create an urban form that encourages residents to walk, cycle and use transit. As a neighbourhood within the campus, Mid-Campus will be part of a complete community, where recreation, education, culture, services, shopping, transit and even work are within easy walking distance.

The housing densities within this neighbourhood will promote efficient use of land. Many types of multi-family dwellings are proposed, with no single-family houses on individual lots. In addition to using land more efficiently, multi-family housing is also more energy-efficient, as there are fewer exterior walls. Smaller units, as proposed, also use less energy.

2.6.3 Transportation Choice

The urban fabric of the neighbourhood will encourage alternate transport modes to the automobile. A well-connected pedestrian and cycling network is integral to the plan, as is easy access to transit.

Housing for those who work or attend classes on campus will significantly reduce the need for commuting. Those campus residents who commute to jobs off campus will have easy access to transit, in one of the best-served areas of the region.

2.6.4 Landscape

The landscape of the public realm areas within the neighbourhood will focus on creating spaces and places that foster a sense of community and social interaction. Even the roads are designed to be social spaces. All landscape elements, including plant material and hard elements and surfaces, will be designed to balance the various aspects of sustainability, while maximizing the enjoyment of these facilities by residents.

The surrounding landscape offers abundant recreation opportunities, which will encourage

people to walk or bike rather than using cars to access recreation. In addition to UBC's parks and open spaces, the forests and beaches of Pacific Spirit Park are within easy walking distance.

Stormwater management will be based on techniques which best support the objectives for groundwater. In areas where groundwater recharge is beneficial, and where the ground conditions allow, pervious surfaces will be encouraged. In areas where ground conditions are impermeable or where reduction of groundwater may be desirable, runoff will be handled via swales and underground pipes rather than encouraging infiltration. The results of a detailed aquifer analysis and ongoing groundwater monitoring will ensure that sustainable strategies for stormwater management are implemented.

Areas of the public realm will also be made available for community gardens to be administered by a neighbourhood association. In this way, the landscape can contribute to sustainable food production.

3. DESIGN GUIDELINES

3.1 Supporting UBC Planning Principles

All new development shall support the UBC principles for physical planning contained in "A Legacy and a Promise". Designs for all buildings and spaces will be evaluated to ensure that the objectives stated in the eight planning principles are satisfied.

3.2 Design Guidelines for Streets

3.2.1 General Character and Intent

Thunderbird Boulevard, East Mall and West Mall are collector streets that service broader areas of campus. The remaining streets within the neighbourhood will be local roads to service the residents of Mid Campus Neighbourhood. Road cross-sections, as per the CCP, are included in this plan as Diagrams ID-3 and ID-4.

3.2.2 Roadway and On-Street Parking

The following roads are categorized as collector roads, with provisions for transit, as shown in Diagram ID-3:

- Thunderbird Boulevard east of West Mall
- West Mall to SW Marine Drive
- East Mall

A travel lane of 4.3m is proposed in each direction, to provide adequate width for both transit and automobile vehicles adjacent to cyclists. Bicycle markings will be painted on the outer edge of the 4.3m travel lane. Parallel parking will be provided on one side adjacent to the curb, broken occasionally by curb extensions at key crossings. Parallel parking will be restricted to residents of the Mid Campus Neighbourhood and their guests.

The remaining streets within the Mid Campus Neighbourhood will be consistent with the local street standard as indicated in Diagram ID-4. A travel surface of 6.0m is proposed which will ensure adequate width for vehicular traffic and cyclists. Parallel parking of 1.85m will be provided on at least one side adjacent to the 6.0 metre roadway. Parallel parking will be restricted to residents of the Mid Campus Neighbourhood and their guests.

In order to diminish the perceived width of local roadways, driving aisle surfaces will be asphalt and parking surfaces a patterned concrete or pavers. Curb extensions and extensive landscaping will be used in order to create “pockets” of parking.

3.2.3 Sidewalks and Pedestrian Crossings

On the east side of West Mall, the west side of East Mall and the south side of Thunderbird Boulevard, a 1.8m landscaped boulevard adjacent the curb and a 1.8m sidewalk adjacent the boulevard will be provided. The sidewalk treatment will use UBC sidewalk standards. The west side of West Mall will eventually be reconstructed to this standard. Along the north side of Thunderbird Boulevard and the east side of East Mall, the current sidewalk and boulevard will remain.

Pedestrian crossings of Thunderbird Boulevard, East Mall and West Mall will be highlighted by curb extensions without street parking to ensure maximum visibility of pedestrians. Pavement markings to indicate pedestrian crossings will be incorporated, to match UBC standards used elsewhere on campus. Mid block crossings will be raised to slow traffic and indicate pedestrian priority.

On the remainder of the streets within the neighbourhood, a 1.8m boulevard adjacent to the curb and a 1.65m sidewalk adjacent to the boulevard will be provided on both sides of the street.

3.2.4 Street Landscape

Street trees planted in the 1.8m boulevard will be provided along both sides of all streets within the Mid Campus Neighbourhood. Tree selection will allow sun in winter and provide shade in summer, to be consistent with goals for passive heating and cooling.

Along East Mall, existing street trees in the median will be retained. Existing and new plantings will be provided along the west side of the street.

Significant trees along the Main Mall greenway will be retained as much as possible and incorporated into the green spaces, along with additional plantings.

Streets and lanes should be considered and landscaped as an extension of the park system and the linear greenway connection. Landscape treatment, lighting and street furniture should be provided to reinforce the strong pedestrian orientation of streets and evoke a park-like setting.

3.2.5 Street Lighting

Street lighting will be provided along streets within the Mid Campus Neighbourhood. Pedestrian lighting will be provided along the Main Mall greenway. UBC light standards will be utilized.

3.3 Design Guidelines for Other Pedestrian / Bicycle Corridors

3.3.1 Greenways

Access to the greenway and open space system should be provided within 250m of all buildings in the Mid Campus area.

The juncture of the Main Mall greenway at Thunderbird Road will be a plaza - a focal point to reflect the transition between the academic core and the Mid Campus neighbourhood. This will also involve the plaza space to the north of Thunderbird Boulevard. This combined plaza space will be the most important open space component of the neighbourhood. At its south end, this plaza will form the gateway to the neighbourhood, and at its north end, the gateway to the academic core.

The intersection of the Main Mall greenway at Stadium Road should mark the transition of the greenway from a more urban character into a more natural, forested setting. The linear aspect of the Main Mall greenway will change at Stadium Road to a non-linear and less urban form. A small plaza at Stadium Road should mark this transition.

3.4 Design Guidelines for Buildings

3.4.1 General Character and Intent

- a) Mid Campus presents a unique opportunity to create a “university town” neighbourhood, providing a diversity of housing and integrating with the academic,

residential and recreational fabric of the campus.

- b) The neighbourhood will have a distinctive urban character, as the context and scale of the neighbourhood are unique within the region. Although residential, Mid-Campus will feel connected to both the site and the mission of the university. The campus setting is a strong element in creating a sense of place; building design will respond to this distinctive environment. A vibrant community will be supported by its natural and built environment.
- c) Mid Campus Neighbourhood lies adjacent to substantial student housing complexes and sports facilities. Building form should facilitate social interaction and community building amongst the residents of the neighbourhood and surrounding areas.

3.4.2 Siting and Orientation

- (a) Building design should fit with the sloping natural topography of the land, and to the extent possible, should accommodate retention of existing significant trees.
- (b) Buildings should be designed, through setbacks and orientation, to optimize sunlight exposure wherever possible.
- (c) The relationship of the buildings to the streets and to the pedestrian and cyclist paths is a primary consideration in the design of the buildings. The design should ensure that as many ground-oriented units as feasible have direct access from the street in order to contribute to an animated streetscape.

3.4.3 Massing

- (a) General building massing and heights have been determined in this plan, in order to take advantage of the view potential from the site. Higher densities and higher buildings are generally located on the higher elevations in the neighbourhood, in order to provide views over the lower buildings. The high-rise site, while not at the higher elevation, has been located to maximize views from the tower suites, while minimizing the obstruction of other view corridors.
- (b) Building design will consider neighbouring buildings, such as Thunderbird student housing, with regard to height, privacy and overlook concerns.
- (c) Within the overall building envelope, consideration should be given to setbacks, orientation, and other techniques to minimize overshadowing onto neighbouring site and developments.

- (d) Buildings will be massed and articulated to incorporate a strong base. Taller buildings may utilize setbacks at the upper floors to reduce visual impact and shadowing. Use of dormers and stepped rooflines will be encouraged, to reduce apparent building mass at the upper stories.

3.4.4 Building Style and Architecture

- (a) No specific design theme is envisioned for the neighbourhood, however building style and architecture must evoke a sense of permanence, durability, high quality and should incorporate elements of style which complement the west coast setting and climate.
- (b) Buildings will be designed to address the potential technical and physical issues particular to west coast climatic conditions, in order to ensure durable structures.
- (c) Consideration should be given to incorporating appropriate flexibility and adaptability to facilitate future changes in use and technology. An example of a space where flexibility may be appropriate would be ground floor residences in areas where future commercial use might be contemplated. With regard to changing technology, the wiring for buildings could be designed to accommodate retrofits as technological innovations occur.

3.4.5 Materials

- (a) Exterior finishes and detailing on all buildings will be of durable quality suitable to our west coast climatic conditions.
- (b) Building materials with low environmental impacts should be considered if economically feasible. This could include recyclable materials, locally sourced products, materials with recycled content and materials with low embodied energy (i.e. materials with low requirements for energy use in their manufacture and transport). Sections 3.4.12 and 3.4.13 provide further guidelines for “green” buildings.

3.4.6 Parking Access

- (a) All parking garage access doors and ramps should be incorporated within the profile of the building and their impact on the streetscape softened through the use of screening, trellises, planters or other landscape elements. Where possible, garage access should be at the rear, or the least visible elevation of the building, but should nonetheless be as well designed as other building facades.

- (b) Access to any off-street surface parking should incorporate landscaping to minimize the visual impact of hard surface and to screen parking areas. [Note: off-street surface parking is only likely to occur where visitor parking is being accommodated on townhouse sites.]

3.4.7 Recycling and Garbage Facilities

Recycling and garbage holding must be provided within the building envelope of new buildings, except for townhouse buildings where a screened exterior location may be permitted.

3.4.8 Building Signage

Building signage must be properly integrated within the building design or landscape design. For the provisions of emergency safety services, signage should be easily viewable by pedestrians and motorists. Signage illumination should be front-mounted, warm lamp sources projected onto the sign face.

3.4.9 On-Site Landscape

- (a) The landscape character of new developments should respect and be responsive to existing adjacent landscape.
- (b) The area is adjacent to the Botanical Garden and the Rhododendron Wood and should respond to and incorporate elements of these natural neighbours. For example, the landscape near Rhododendron Wood should incorporate plantings of native conifers, and landscape near the Botanical Garden could incorporate an arboretum theme.
- (c) Landscape design should consider view management. Low level planting adjacent to public pedestrian areas in conjunction with proper lighting will enhance a comfortable, and safe public environment. (See also Section 3.4.11)
- (d) Landscape features should mark entry points and special places.
- (e) The landscape should be suited for west coast climatic conditions and designed for low requirements for watering, maintenance, and herbicide and pesticide use.
- (f) Existing healthy tree specimens should be retained wherever possible. Fences should be minimized and when used, should be in small sections to provide privacy and screening. The use of hedges and shrubs to define pathways and edges should be considered.

3.4.10 Lighting

For safety reasons, an adequate light level on public streets and walkways should be maintained. Where possible, pedestrian level lighting along pedestrian routes should be installed and lighting should be predominately low-level, energy efficient fixtures.

3.4.11 Safety and Security

The design of each development should use Crime Prevention Through Environmental Design (CPTED) principles when designing buildings and landscapes:

- residential buildings should be designed to overlook the streets, parks, walkways and private open spaces;
- lobbies and entries should be visible as they are approached;
- indoor common areas should be placed adjacent to outside common areas or overlooking the street to improve overall surveillance;
- fences and walls adjacent to the sidewalk should be designed to ensure some view of the building from the sidewalk, without sacrificing unit privacy, to promote casual neighbourhood surveillance; and
- landscaping should be designed and located to enhance security.

3.4.12 Green Building Guidelines

- (a) A goal of this Neighbourhood Plan is to encourage and promote innovation in the design and construction of buildings, in order to achieve the following objectives:
 - reduce energy consumption
 - ensure long life for buildings
 - ensure high indoor air quality
 - use resource efficient materials
 - conserve water
 - reduce waste
- (b) This neighbourhood plan does not prescribe specific measures to be used. Green building design is an evolving science, and new technologies and materials are regularly introduced. Programs to promote green buildings should also be flexible and evolve over time, in order to implement the sustainability objectives of this plan.

- (c) This neighbourhood is part of a campus community that is committed to effective and practical sustainability initiatives. The OCP and CCP call for a community where the urban form, transportation choices and social fabric are inherently sustainable. This foundation of a sustainable community provides unique opportunities for green building initiatives:
- The university location fosters research and innovation. Academic and industry research conducted on campus has long been a source of new technology. The university will continue to encourage technological innovation and promote the use of sustainable building practices in the development industry.
 - Housing built by the university will demonstrate economically feasible new technologies and help promote market acceptance. Longer term monitoring of energy use, costs and consumer acceptance is possible in housing owned by UBC.
 - The overall marketing strategy for campus neighbourhoods will emphasize the sustainable benefits of campus living, and foster an awareness and a desire for homes which are designed and built to be “green”.
 - Consumers moving to campus neighbourhoods will likely have a greater propensity to demand buildings with enhanced sustainability. Builders and developers will be encouraged to meet this demand, since buildings that accommodate consumer preferences have a natural market advantage.
 - The university will establish a form of certification to promote sustainable building practices.

3.4.13 Green Building Rating System

- (a) A green building rating system will be implemented for application within the neighbourhood. This rating system will be voluntary and market driven, to accelerate the acceptance and adoption of green building practices. Building developers will be expected to respond to green “best practices” that have demonstrated feasibility and applicability, and will also be encouraged to incorporate new techniques and innovations.
- (b) Other local jurisdictions are considering adopting a green building rating system such as “LEED” (Leadership in Energy and Environmental Design). The LEED rating system or a similar system modified for local conditions will offer a choice

from a wide variety of sustainability measures. Appendix A provides a preliminary list of “green building initiatives”.

- (c) Details of the green building rating system will be included in the tender package for each site offered for lease. At the development permit stage for each building, a submission shall be made to indicate the proposed level of building performance under the rating system.

3.4.14 Design Guidelines for Research Buildings

Research facilities must respect in their design, orientation and site planning, the immediate proximity of residential uses in the Mid Campus Neighbourhood. This relates specifically to the impact of visual, acoustic and olfactory properties in their operation. Specific requirements for the design of research buildings and their related site improvements fall within the development permit approval process for institutional buildings. That approval process must evaluate any potential impacts of the research use.

4. DEVELOPMENT CONTROLS

4.1 Overview

As described in Section 1.2.1, the Neighbourhood Plan establishes a detailed plan for the Mid Campus Neighbourhood and contains criteria for evaluating development proposals. The development controls described in this section provide an overall view of the general controls determined for this neighbourhood.

4.2 Definitions

Building Area means the floor area within the exterior stud face of a building as indicated below.

The following shall be included in the calculation of **Building Area**:

- (a) where the distance from a floor to the floor above or where there is no floor above to the bottom of the roof joists exceeds 3.7 m, an amount equal to the area of the floor below the excess height if, in the opinion of the Development Permit Board, the excess height is likely to be used to create additional living space

The following shall be excluded in the calculation of **Building Area**:

- (a) open residential balconies or sun decks;
- (b) patios and roof gardens;

- (c) where floors are used for off-street parking and loading, the taking on or discharging of passengers, bicycle storage, heating and mechanical equipment which are below grade;
- (d) habitable areas which are more than 4 feet below grade;
- (e) amenity areas, including day care facilities, recreation facilities, and meeting rooms to a maximum total of 10% of the total permitted floor area;
- (f) up to 3.7 m² (40 ft²) of in-suite storage space per residential unit;
- (g) areas of undeveloped floors which are located:
 - (i) above the highest storey or half-storey and to which there is no permanent means of access other than a hatch; and
 - (ii) adjacent to a storey or half-storey with a ceiling height of less than 1.5m.

Building Envelope means the area of a lot and/or prescribed theoretical volume which is within the lines formed by all required setbacks, and within which all buildings, except permitted projections, must be contained.

Building Grade is the existing grade or as indicated on an approved grading plan.

Floor Space Ratio means the quotient achieved by dividing the **Building Area** by the **Site Area**.

Height means the vertical distance that the building extends above the **Building Grade** or as indicated on a grading plan, as approved in a development permit.

Setback means the horizontal distance required between a lot line and the exterior face of a building or structure.

Site Area means the area of a building site, including easements and tree preservation areas, that fall within the boundaries of that site. (This corresponds to the Net Site Area definition in the OCP, used to determine Floor Space Ratio).

Site Coverage means the area of a lot covered by all buildings above the ground surface, measured to the outermost edge of the exterior walls.

4.3 Building Envelopes

Site boundaries and the maximum extent of building envelope are indicated on Plan P-7. Buildings can be situated within these sites based on the provisions of this neighbourhood plan. Actual building siting will be determined at the Development Permit stage.

4.4 Height

Within the overall height framework determined for the Mid Campus Neighbourhood, height limits for each parcel have been outlined. The height maximums for each lot are

indicated on Plan P-7.

4.5 Setbacks

Minimum setbacks are indicated in general form on the land use plan (Plan P-7). Specific setbacks for each site will be established in tender documents, and enforced through the Development Permit process.

Relaxations for elements such as fireplaces and bay windows may be permitted within setbacks up to a maximum of 24 inches.

Overhang roofs and pitched roofs are permitted to extend into setback areas in order to encourage their use without penalty.

4.6 Site Coverage

Site coverage will be specified for each site by development permit. No site shall exceed 50% coverage, in order to provide appropriate open space and landscaping within the neighbourhood.

4.7 Vehicular Parking

Underground or covered off-street parking is generally required for new buildings within this neighbourhood. On street parking is also available for resident and visitor use by means of a permit. The extent to which on-street parking may be used as part of the parking allocation for each site will be determined by the Development Permit, and will depend on the extent of adjacent street frontage and other factors.

A primary element of this neighbourhood will be its reduced reliance on automobile use. Vehicular parking standards will comply with the CCP and the Strategic Transportation Plan, and shall not exceed the maximum standards in those documents. The standards for market residential units are further reduced in this neighbourhood, to reflect the smaller unit sizes which are likely to be provided, and to ensure that parking ratios are related to unit size.

a) Market Residential:

- (i) Townhouses [see also clauses (iii) and (iv)]:
 - Maximum of 2.0 spaces per unit
 - 0.1 for visitor
 - 0.1 for handicap, relaxed for handicap units
- (ii) Apartment Units [see also clause (iii)]:

- Maximum of 1.0 space for each 70m² (753 ft²) of gross floor area, or 1.8 stalls per unit, whichever is less.
 - 0.1 spaces per unit for visitor
 - 0.1 spaces per unit for handicap, relaxed for handicap units
- (iii) For all buildings where resident parking is provided in a common parking garage or area:
- one parking space per unit may be included within the base purchase or rental price for a dwelling unit; and
 - a second parking space may be made available to building residents for an additional payment or fee. A second space shall not be included in the base purchase or rental price.
- (iv) For buildings where parking is provided by means of individual at-grade garages attached to dwelling units, second parking spaces may be provided in the garage for each unit and included in the price of the dwelling. No more than 5% of dwelling units within the neighbourhood will have this building form. In Mid-Campus, this building form may occur only on Parcel 16B, as shown on Plan P-7.
- b) Non-market Residential:
- Faculty/staff – 1.0 stall per unit, a portion of which may be on the street
- Single student – 0.25 stalls per bed (maximum)
- Family student – 0.8 stalls per unit, plus up to 0.2 stalls shared if needed (maximum)
- Visitors – 0.1 stalls per unit (maximum)
- minimum 1 parking stall per 50 units for a cooperative auto network/shared vehicle parking stall
 - Neighbourhood Electric Vehicle (NEV) and Natural Gas Vehicle (NGV) recharging outlets at each building
- c) Research:
- On-site parking requirements for research uses to be determined at time of Development Permit
- d) Community Centre
- On street parking spaces in the vicinity of the Community Centre / Horse Barn facility will be metered for use by patrons of those facilities. Additional parking for events will be elsewhere on campus, at other pay parking locations.

4.8 Bicycle Facilities

Bike facilities will be provided in accordance with policies of the UBC Strategic Transportation Plan, as follows:

- Apartments:
 - 1-16 stall bike rack per 20 residents
- Townhouses:
 - Secure parking for 2 bikes per 3 people (may be parked in garages of individual units)
- CORA type rack or equivalent, colour to suit building finish
- In residences, bike racks must be in heated, secure space
- Bike racks at the Community Centre / Horse Barn plaza shall be provided at a ratio of one - 16 stall bike rack per 100 people expected to use the building on a normal day, or two - 16 stall bike racks, whichever is greater.

5. INFRASTRUCTURE AND SERVICING

5.1 Overview

All services for Mid Campus Neighbourhood are being designed in accordance with a campus-wide Master Servicing Plan (MSP), prepared in conjunction with UBC Utilities. The goal of the servicing plan is not only to service newly developing areas, but to rectify deficiencies and limitations of the current systems.

5.2 Drainage

Mid Campus stormwater drains west to the low point in the neighbourhood and south along Marine Drive. There is a current outfall south of the Botanical Garden, through Pacific Spirit Park to a surface channel leading to the Fraser River. However, this outfall is experiencing significant erosion problems. Possible solutions include mitigation measures at this outfall, or redirection of stormwater to the south.

The recommended option for Mid Campus storm water is to divert all or part of the flow to a new biofiltration ditch proposed for the east flank of SW Marine Drive, leading to a proposed new outfall to the Fraser River. This outfall would be a conduit down the slope through Pacific Spirit Park. The conduit could be a combination of vertical spiral drain and tunnel. This outfall would be situated at the south end of the campus, and could replace three outfalls which currently drain over the cliffs and cause erosion.

With regard to onsite drainage works in Mid Campus, analysis has indicated that the following principles should be followed:

- Generally, stormwater will be collected through intakes, lawn basins and roof drains and conveyed in pipes to the low point in the neighbourhood.
- Typically, infiltration will not be appropriate due to the impermeability of the glacial till comprising the upper soil layer. In some locations where the till layer is thinner, it may be possible to implement groundwater infiltration. This could reduce the amount of water entering the piped system, but would not likely reduce the peak flows or allow for reduced pipe sizes.
- Infiltration would not be particularly beneficial nor harmful to the subsurface aquifer, so there is no hydrological basis to either encourage or discourage groundwater recharge.

The onsite system within Mid Campus will be designed for the 10-year storm, with 100-year flow routing by way of roads, swales or pipe. The downstream system along SW Marine Drive, including pipes, biofiltration ditch and outfalls, would be designed to accommodate the 200 year peak storm event.

Any works proposed within Pacific Spirit Park will be reviewed by GVRD Parks and works affecting the Fraser River shoreline will be reviewed by FREMP.

5.3 Sanitary Sewer

Sanitary sewers in Mid Campus flow to the west and south to a main which runs parallel to SW Marine Drive, and ultimately to the GVS&DD sewer interceptor running along Marine Drive.

A comprehensive strategy for upgrading of sanitary sewer mains has been prepared by consultants in conjunction with UBC Utilities, and is included in the MSP. Upgrades are required as development of CCP areas proceed, but the Mid Campus area will not trigger these upgrades.

The onsite sewer system within Mid Campus is being designed in the context of the overall servicing strategy, and will flow to an existing 250mm main at West Mall and SW Marine Drive. A future upgrading to 450mm is proposed for that main in approximately 2012.

The proposed development in the Mid Campus Neighbourhood Plan is not anticipated to

trigger any upgrade requirements to the GVS&DD interceptor sewer along SW Marine Drive, or within the City of Vancouver.

5.4 Water

The water distribution system for Mid Campus is being designed within the context of a campus-wide strategy for water distribution, included in the MSP. Water demands for all uses on the campus have been projected and a computer model analysis performed. A comprehensive program of water network improvements is being implemented, but no particular upgrading is triggered by development of the Mid Campus Neighbourhood.

The newly installed 500mm water main, along Agronomy road, will serve as the primary source for Mid Campus. New water pipes proposed within Mid Campus will tie in to existing 250mm pipes on West Mall, Thunderbird Boulevard, East Mall and Stadium Road.

6. COMMUNITY FACILITIES

6.1 Community Facilities

The Official Community Plan contains a requirement to provide a community centre in South Campus. The OCP specifies a size requirement and timing for construction of that facility.

UBC has proposed that an additional community centre building be provided in Mid Campus Neighbourhood, as part of the “Horse Barn Plaza” at Main Mall and Thunderbird Boulevard. The intention would be to provide neighbourhood oriented facilities that would cater mainly to residents of Mid Campus Neighbourhood as well as residents in adjacent student housing.

The preferred option is to provide a new building near the existing Horse Barn, which would have the following characteristics:

- a multi-purpose activity room;
- several rooms suitable as meeting rooms or small classrooms; and
- outdoor amenity space.

It may be desirable to accommodate temporary school facilities in the form of a K-3 annex, to provide expansion of the University Hill Elementary School programs on a short term basis, until the future school in South Campus can be built. Discussions with the School Board will determine whether this annex is provided.

Rehabilitation of the Horse Barn, if feasible, will provide additional space that may accommodate neighbourhood commercial uses or community facilities. A program for this space will be devised among the stakeholders having an interest in the Barn.

6.2 University Neighbourhood Association

A new organization referred to as the “University Neighbourhood Association” consisting of elected residents and university representatives is proposed for new residential neighbourhoods on the campus, including the Mid Campus Neighbourhood.

A contribution from the service levy for new residential development is intended to be managed by the Association, to pay for those community services to be undertaken by the Association. This concept will be refined through a process parallel to enactment of this neighbourhood plan. The University Neighbourhood Association is intended to be functional as new residents move into the neighbourhood.

6.3 Community Services

6.3.1 Health, Safety and Education

The UBC campus is currently served by a variety of services related to health, safety and security, fire protection, education, and other essential services. These are generally provided by other parties (e.g. R.C.M.P., Vancouver School Board, etc.) UBC will work with the providers of these services, and new services as required, to ensure that additional capacity is provided at appropriate times to match increases in the campus population.

6.3.2 Social Services

Some social services such as day care are provided on campus by the University. Other services are provided by volunteer associations and other service providers. UBC will continue to work with the various parties to ensure that appropriate additional social services are provided, in order to meet residents needs as growth occurs.

LIST OF PLANS

Cover	Oblique Aerial Photo UBC. Campus – Mid Campus Neighbourhood Location
P-1	UBC Campus Plan showing eight local areas for neighbourhood planning
P-2	Mid Campus Neighbourhood – Aerial Photo Campus Context
P-3	Roads Context for Mid Campus Neighbourhood
P-4	Transit Context for Mid Campus Neighbourhood
P-5	Open Space Context for Mid Campus Neighbourhood
P-6	Aerial Photo of the Mid Campus Neighbourhood
P-7	Land Use Plan
P-8	Neighbourhood Open Space and Connections
P-9	Illustrative Plan

LIST OF ILLUSTRATIONS AND DIAGRAMS

- ID-1 Rendering of Horse Barn Plaza, looking south along Main Mall Greenway
- ID-2 Rendering of Proposed Development along West Mall
- ID-3 Collector Road Cross-Sections
- ID-4 Local Road Cross-Sections

TABLE A**OVERALL LAND USE, DENSITY CALCULATIONS
AND TYPE OF UNITS****FOR THE MID CAMPUS NEIGHBOURHOOD LOCAL AREA****PHASES I & II (LYING BETWEEN WEST MALL AND EAST MALL)**

Residential Land sq.m. (net)	Floor Space Ratio ¹ (Residential Average)	Gross Buildable Area (sq.m.) ² (Residential)	# of Units ³
58,113	1.46	85,062	709

Useable Neighbourhood Open Space ⁴	# of Rental Units (Minimum)	# of Units for Purchase (Maximum)	Ground Oriented Units (Minimum)	Estimated Population
13,984	213 (30%)	496 (70%)	213 (30%)	1,418

Research sq.m. (net)
99,184

PHASE III – FUTURE HOUSING RESERVE (LYING WEST OF WEST MALL)

(density and land use information to be added when OCP, CCP and this plan are amended to permit residential development)

NOTES FOR TABLE A:

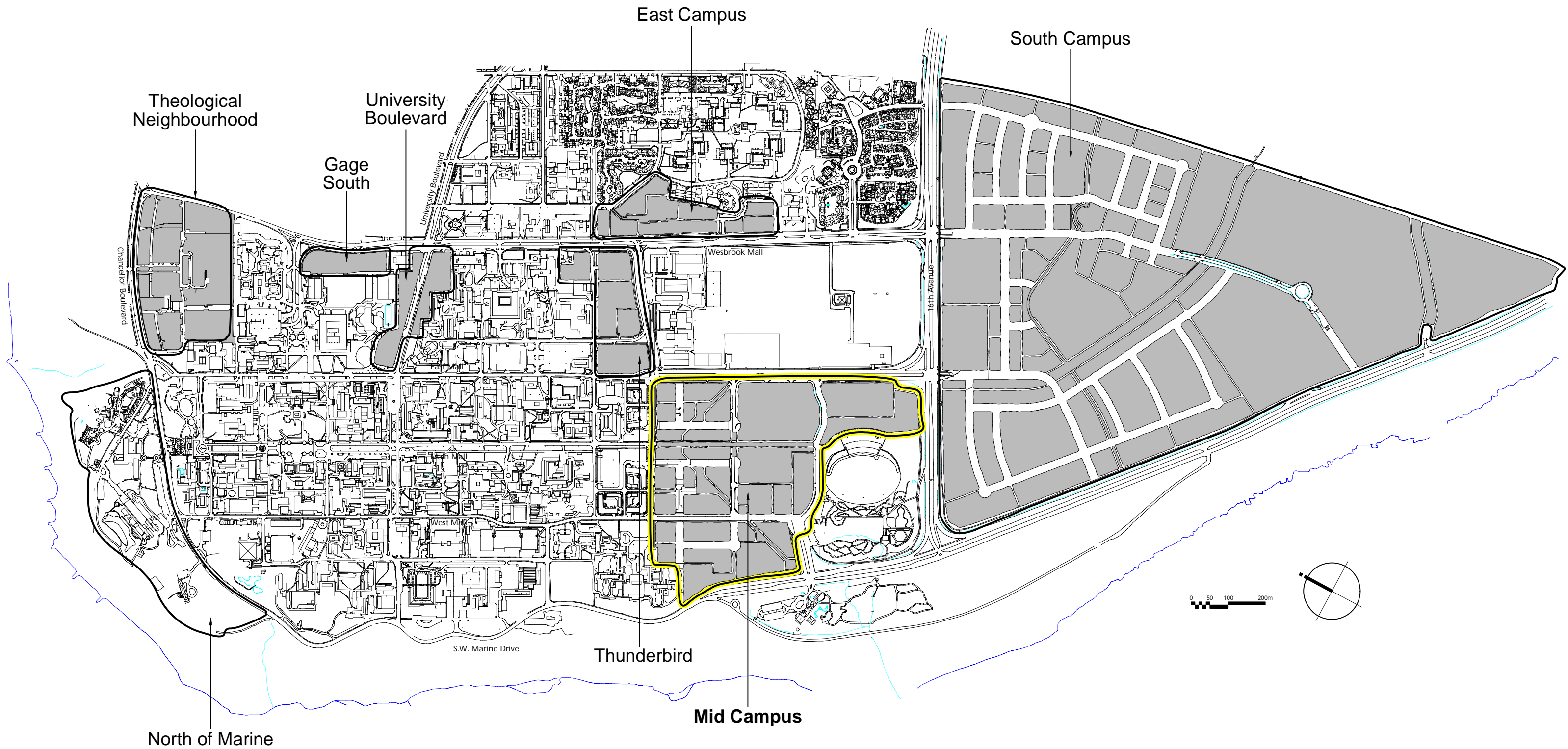
1. Floor space ratio (FSR) is the ratio of building floor area to the area of the building site. All FSR calculations are based on net site area as defined in the OCP
2. Gross buildable area (GBA) is the net site area multiplied by the permitted FSR.
3. Number of units includes all units within the neighbourhood, including those completed at the time of adoption of this Neighbourhood Plan (i.e. Hawthorn Lane faculty and staff housing).
4. For details of Open Space, see Land Use Plan P-8.

APPENDIX A: PRELIMINARY LIST OF “GREEN BUILDING INITIATIVES”

- **Sustainable Sites**
 - Erosion & Sedimentation Control
 - Site Selection
 - Urban Redevelopment
 - Brownfield Redevelopment
 - Alternative Transportation, Public Transportation Access
 - Alternative Transportation, Bicycle Storage & Changing Rooms
 - Alternative Transportation, Parking Capacity
 - Reduced Site Disturbance, Protect or Restore Open Space
 - Reduced Site Disturbance, Development Footprint
 - Stormwater Management, Rate or Quantity
 - Stormwater Management, Treatment
 - Landscape & Exterior Design to Reduce Heat Islands
 - Light Pollution Reduction
- **Water Efficiency**
 - Water Efficient Landscaping
 - Innovative Wastewater Technologies
 - Water Use Reduction
- **Energy & Atmosphere**
 - Fundamental Building Systems Commissioning
 - Minimum Energy Performance
 - CFC Reduction in HVAC&R Equipment
 - Optimize Energy Performance
 - Renewable Energy
 - Additional Commissioning
 - Ozone Depletion
 - Measurement & Verification
 - Green Power
- **Materials & Resources**
 - Storage & Collection of Recyclables
 - Building Reuse
 - Construction Waste Management
 - Recycled Content
 - Local/Regional Materials
 - Rapidly Renewable Materials
 - Certified Wood

APPENDIX A: PRELIMINARY LIST OF “GREEN BUILDING INITIATIVES” (cont’d)

- **Indoor Environmental Quality**
 - Minimum IAQ Performance
 - Environmental Tobacco Smoke (ETS) Control
 - Carbon Dioxide (CO₂) Monitoring
 - Increase Ventilation Effectiveness
 - Construction IAQ Management Plan
 - Low-Emitting Materials
 - Indoor Chemical & Pollutant Source Control
 - Controllability of Systems
 - Thermal Comfort
 - Daylight & Views
- **Innovation & Design Process**
 - Innovation in Design








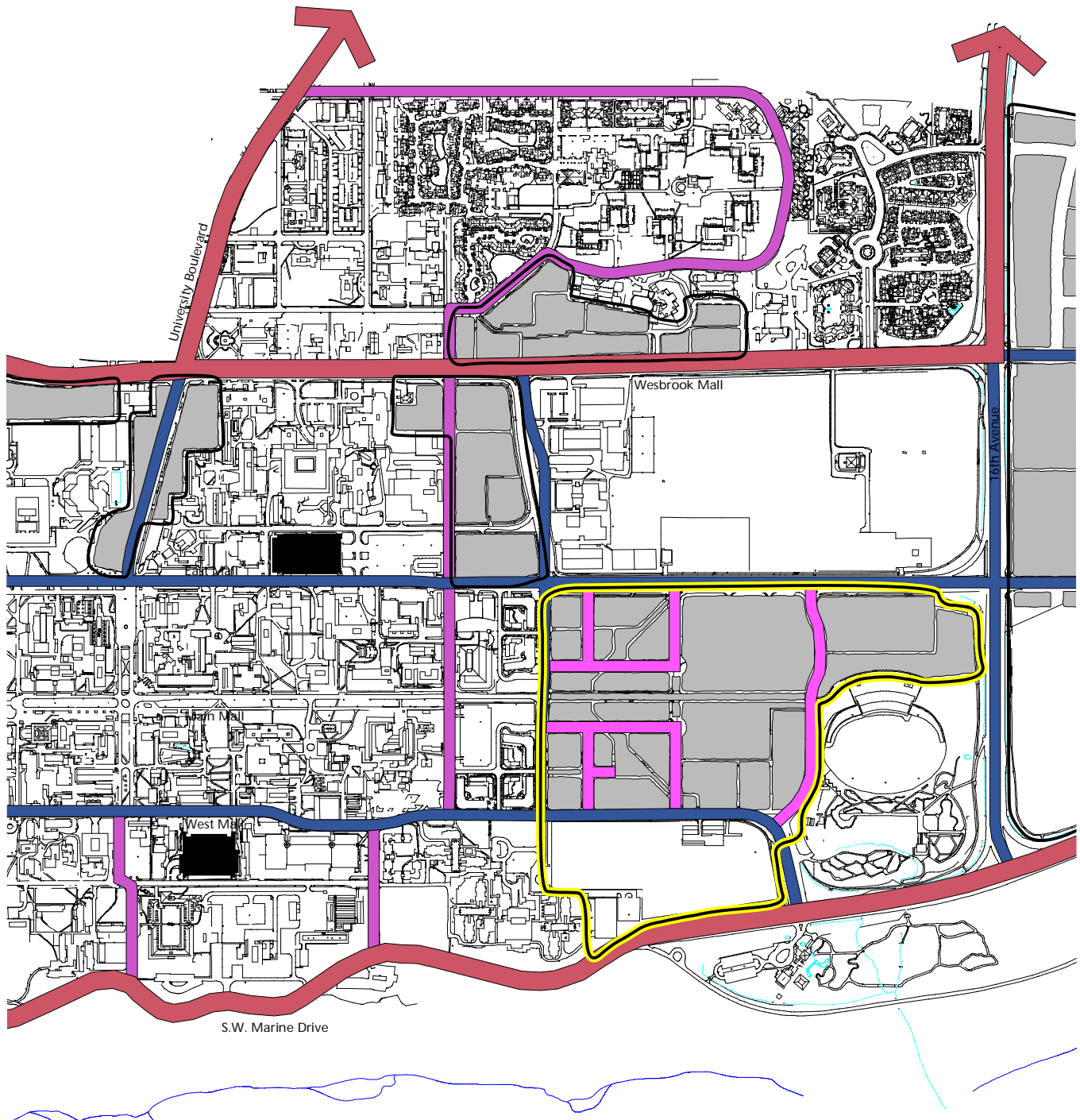
UBC Campus Plan Showing
Eight Local Areas For
Neighbourhood Planning



Oblique Aerial Photograph P-2

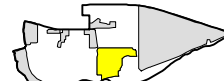
Legend

- | | | | |
|---|--------------------|---|------------|
|  | Arterial Road |  | Local Road |
|  | Collector Road |  | Parkade |
|  | Neighbourhood Road | | |



Mid Campus Roads Context

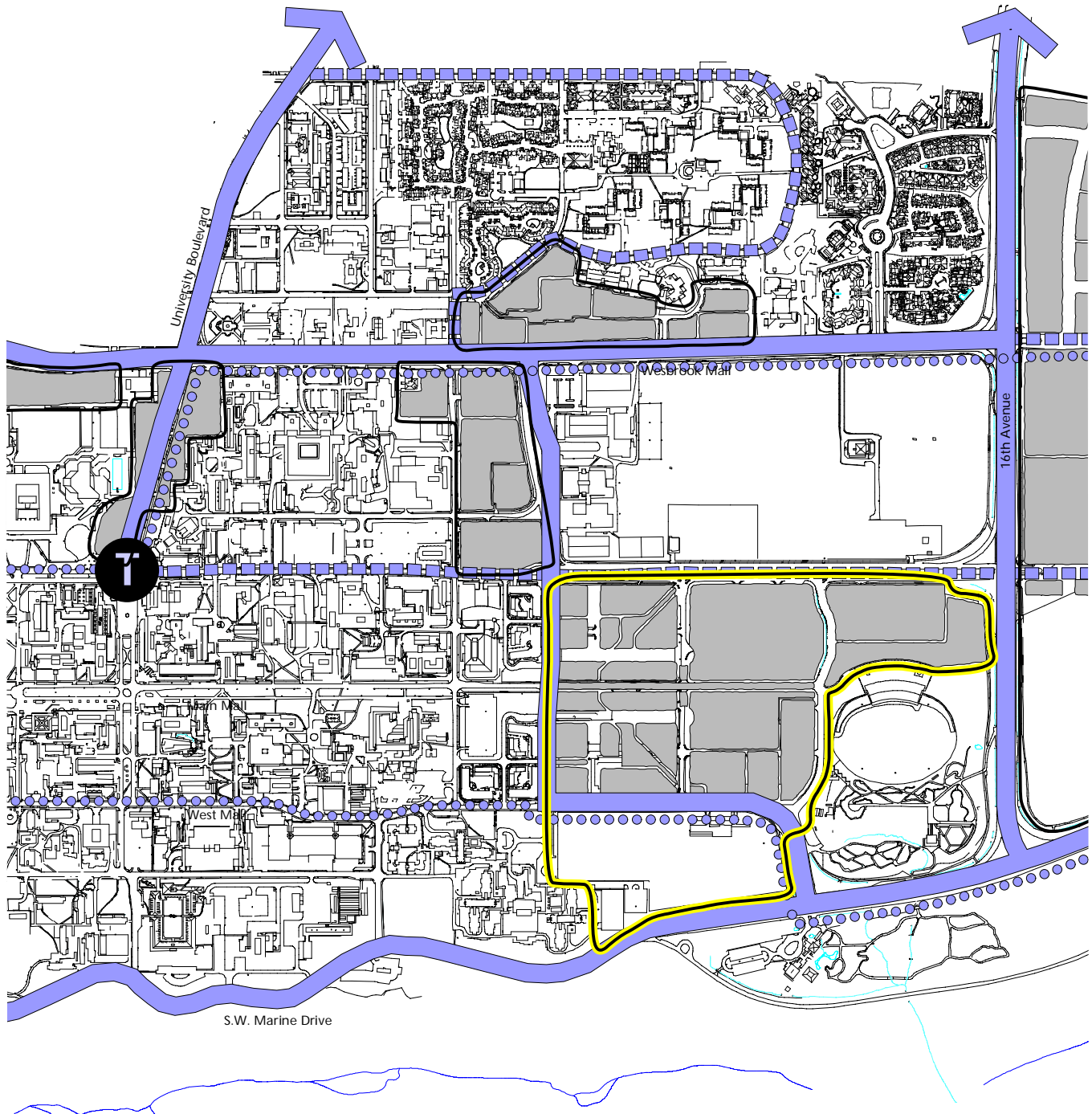
0 50 100m



P-3

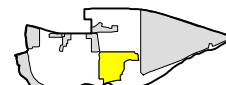
Legend

- Transit Routes
- Additional Transit Routes Proposed By UBC
- Primary Shuttle Service Routes
- Primary Exchange



Mid Campus
Transit Context

0 50 100m



P-4

Legend

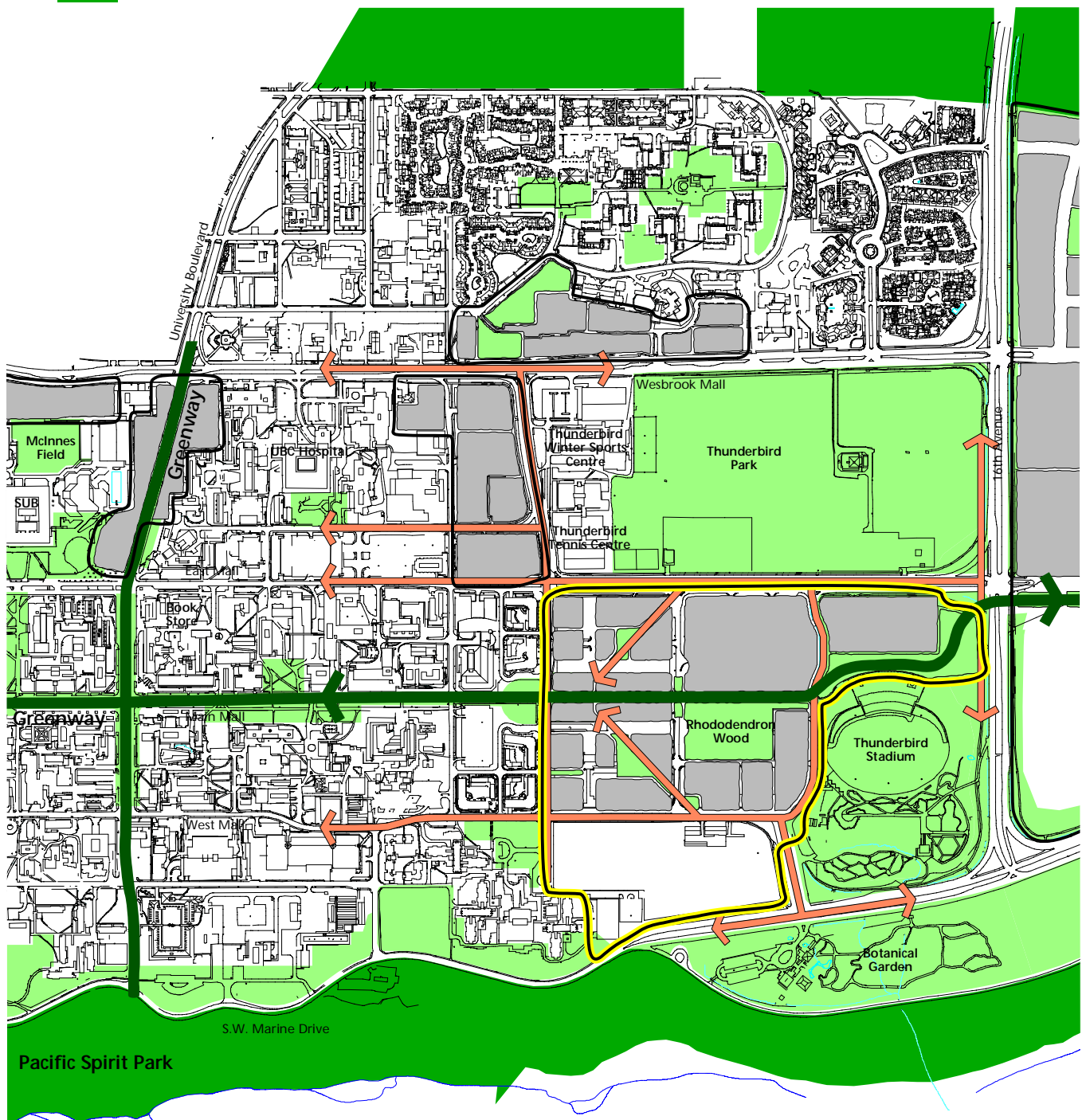
Parks, Open Space,
School Site, Green
Edges, Greenways,
Fields, Stadium And
Botanical Gardens

Greenway



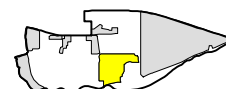
Primary Pedestrian And
Bicycle Linkages

Pacific Spirit Park



Mid Campus
Open Space Context

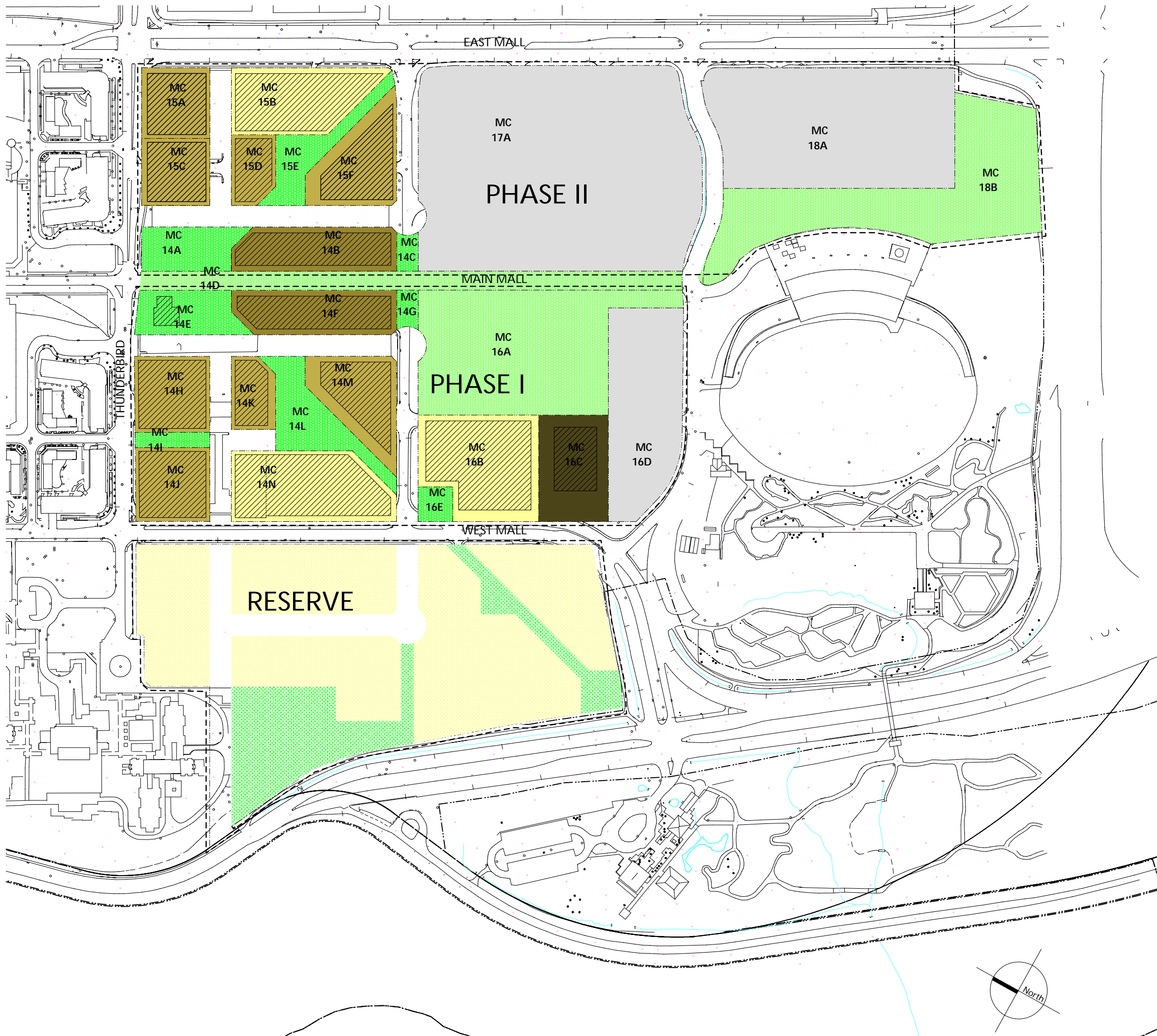
0 50 100m



P-5



Aerial Photograph P-6



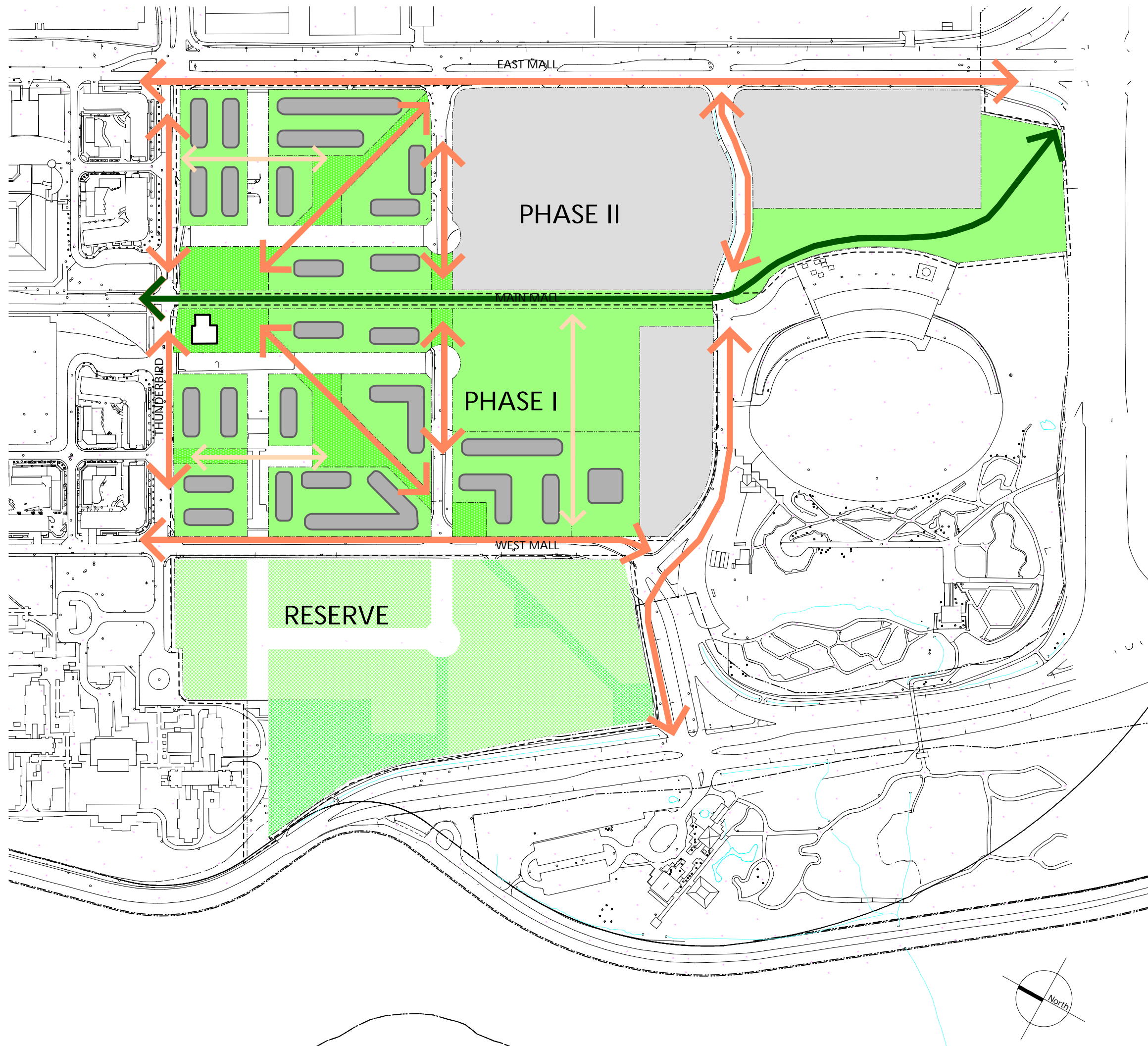
LEGEND

- AVERAGE FSR 2.4 MAX. 18 STOREYS
- AVERAGE FSR 1.6 MAX. 5 STOREYS
- AVERAGE FSR 1.6 MAX. 4 STOREYS
- AVERAGE FSR 1.0 MAX. 3 STOREYS
- NEIGHBOURHOOD OPEN SPACE
- CAMPUS OPEN SPACE
- RESEARCH
- MAXIMUM BUILDING ENVELOPE
- PROPERTY LINES
- PHASE BOUNDARY LINES
Phases indicate sequence of servicing
- SITE NUMBERS
Site numbers are for site identification purposes
(e.g. MC 14J means Mid Campus - Block 14 - Parcel J)

Land Use Plan

Issued: June, 2001
Scale: 1:1500 for 24" x 36" sheet
Scale: 1:3000 for 11" x 17" sheet

0m 50m 100m 150m



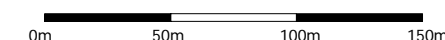
LEGEND

- GREENWAY
- PRIMARY SHARED CIRCULATION ROUTES
- SECONDARY ROUTES
- USEABLE NEIGHBOURHOOD OPEN SPACE (U.N.O.S.)
- OPEN SPACE
- APPROXIMATE NEW BUILDING VOLUMES
- EXISTING BUILDINGS
- PROPERTY LINES
- CAMPUS LINKS

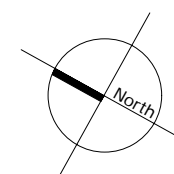
Neighbourhood Open Space and Connections

Issued: January, 2001

Scale: 1:1500 for 24" x 36" sheet
Scale: 1:3000 for 11" x 17" sheet



P 8



DIAGONAL PEDESTRIAN ROUTE TO INCLUDE A VARIETY OF ACTIVITIES AND POINTS OF INTEREST

THUNDERBIRD BORDER TO PROVIDE SITE DEFINITION THROUGH THE INTRODUCTION OF LOW WALL ELEMENT AND PLANTINGS.

LOW "WOOD RAIL" TYPE FENCING TO ALLOW VIEWS INTO THE COMMON GREEN SPACE

EXISTING BARN RENOVATED FOR COMMUNITY USE. THE BARN ANCHORS THE ADJACENT OPEN SPACE WHICH WOULD INCLUDE ACTIVE AND PASSIVE ACTIVITY AREAS.

DIAGONAL PEDESTRIAN ROUTE TO INCLUDE A VARIETY OF ACTIVITIES AND POINTS OF INTEREST.

LOCAL NEIGHBOURHOOD GATHERING OPEN SPACE

WEST MALL BORDER TO PROVIDE SITE DEFINITION THROUGH THE INTRODUCTION OF LOW WALL ELEMENTS AND PLANTINGS

IMPORTANT PEDESTRIAN CONNECTION

FOCAL POINT AND PLAZA AT MAIN MALL VIEW TERMINUS

MAIN MALL GREENWAY CONNECTION THROUGH TO CORNER AND SOUTH CAMPUS

FORESTED SITE TO BE RETAINED AS FOREST

MAIN MALL TO PROVIDE A VARIETY OF PEDESTRIAN AND CYCLIST EXPERIENCES

RHODODENDRON WOOD TO BE ENHANCED THROUGH EXTENSION OF CONIFER PLANTINGS IN SURROUNDING ZONES. TRAILS TO BE INTRODUCED TO FACILITATE PEDESTRIAN LINKAGES

NEIGHBOURHOOD ENTRY AND IDENTIFICATION

WEST MALL EXTENSION TO BE FORMALIZED WITH ELIMINATION OF RIGHT TURN LANE OFF SW MARINE DRIVE

NOTE:

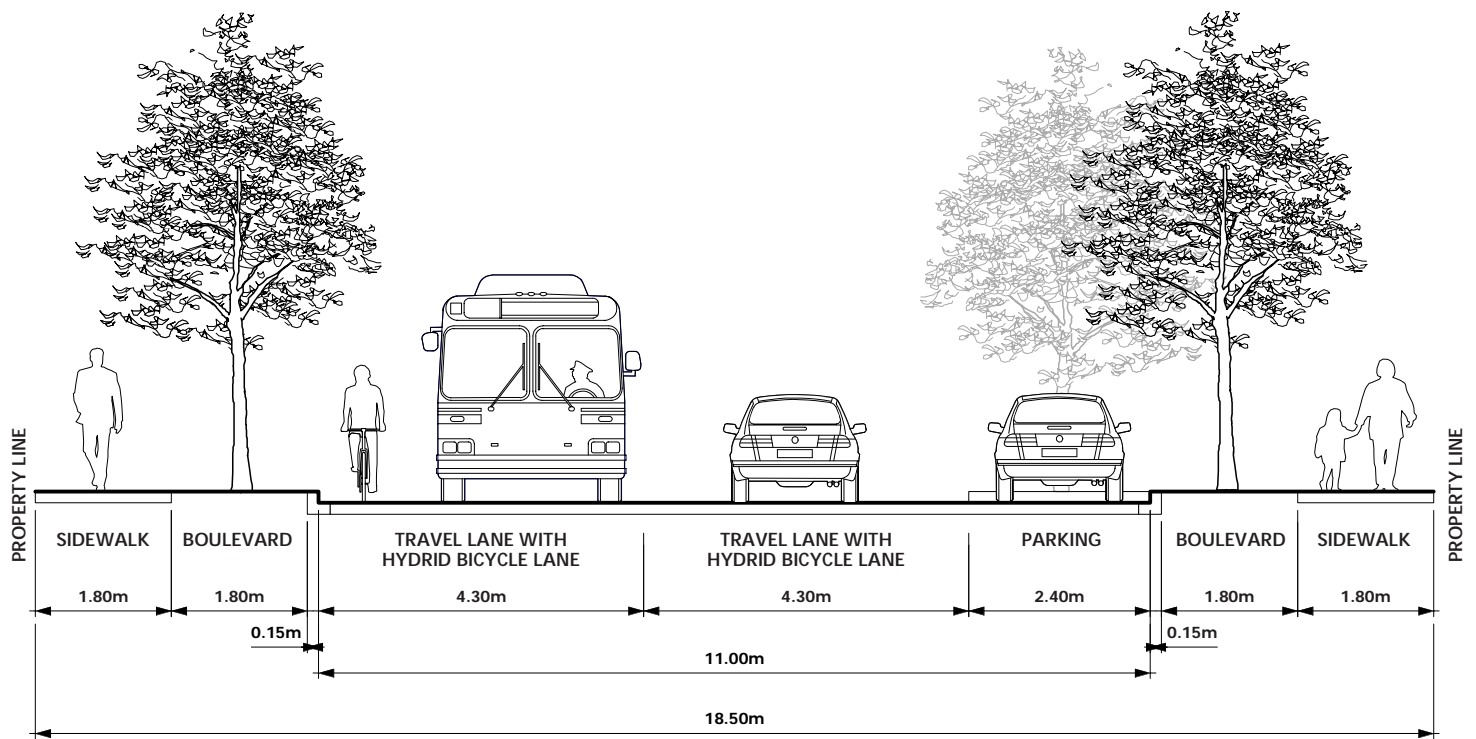
NEW BUILDINGS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY.

ILLUSTRATIVE PLAN

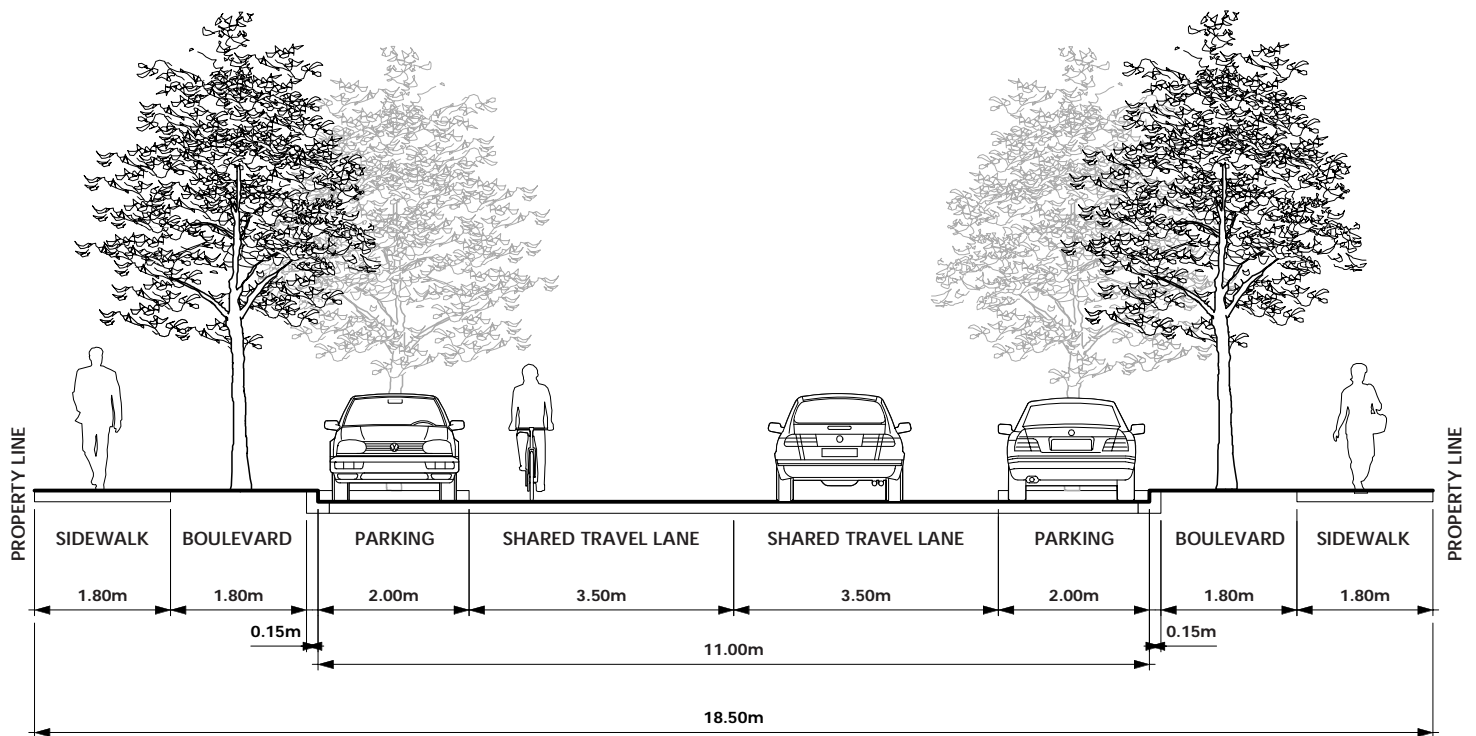
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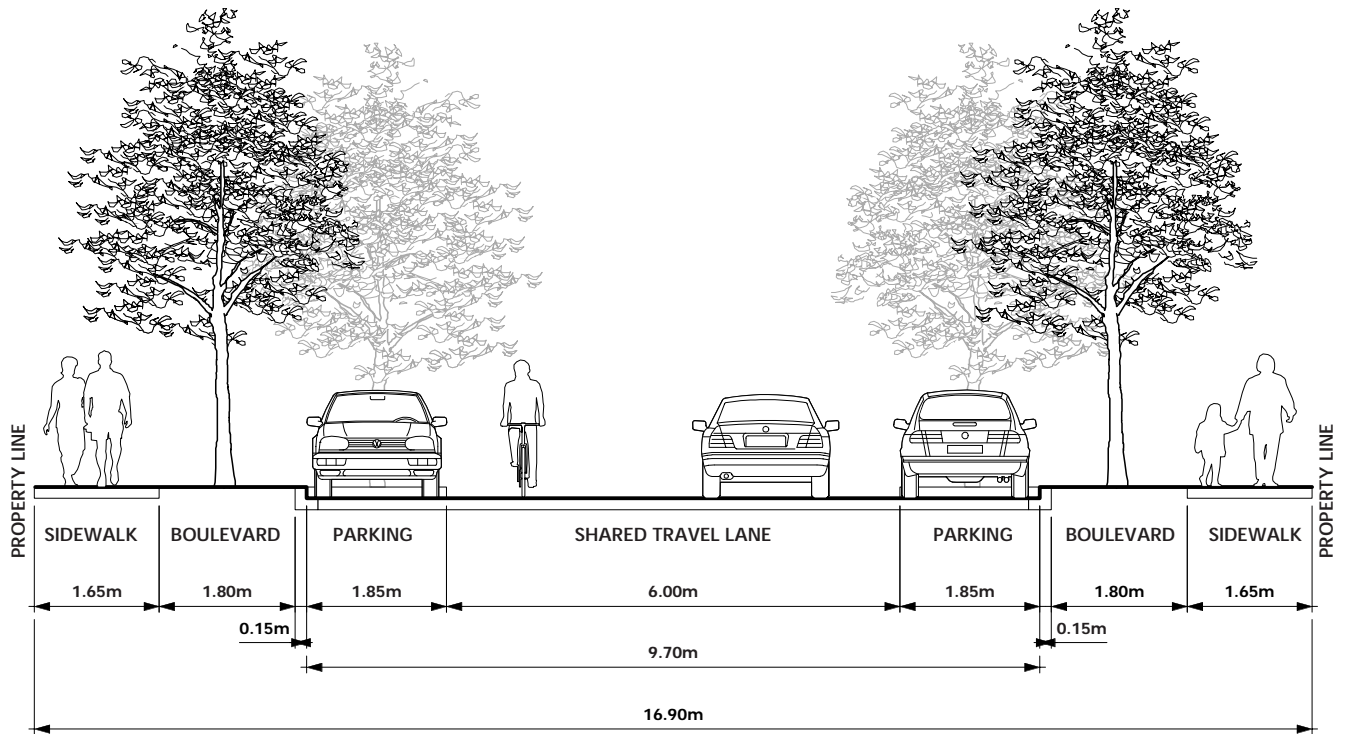


NEIGHBOURHOOD COLLECTOR WITH TRANSIT

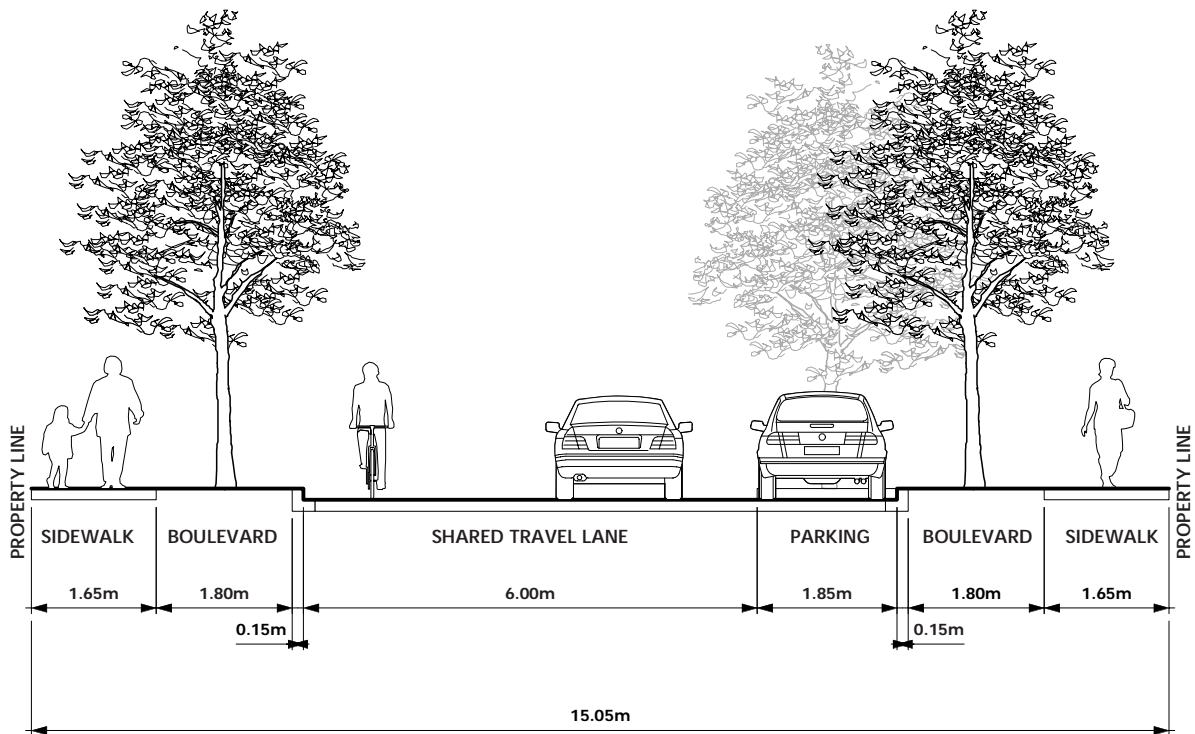


NEIGHBOURHOOD COLLECTOR

ID 3



LOCAL STREET TWO SIDE PARKING



LOCAL STREET ONE SIDE PARKING