4.0 CURRENT CONDITIONS

4.1 Neighbourhood Context

Throughout its history, the Canadian Westinghouse Company had played a major role in Hamilton's industrial growth. In 1912, work began on the Westinghouse foundry and lamp plant on the site of what is now the location of McMaster's Innovation Park. The industrial complex continued operation by Westinghouse and later Camco, an appliance maker, until 2004. The western portion of the site currently maintains a warehouse structure and the eastern portion maintains the administrative office building and annex of the former Westinghouse complex. The structure at 175 Longwood Road has recently been reovated to accommodate leasing opportunities for the Innovation Park.

The present site is approximately 37 acres in size, with varied topography. The western portion forms a plateau elevated above Highway 403. The valley on the adjacent property to the east of the site was formed by the once naturalized Chedoke Creek. The Creek was enclosed in a concrete box culvert in the 1930’s and the adjacent SAMEE Metals building sits over the culvert. A portion of the creek was diverted through the western part of the site and outlets to a channel adjacent to Highway 403 (see Figure 4-1).

The Kirkendall residential neighbourhood and the nearby Chedoke Park and Golf Course are located to the south of the McMaster Innovation Park. The Chedoke golf course is referenced as a Cultural Heritage Landscape, indicating that it is an important open space resource of the City. To the north across Highway 403 is the Westdale neighbourhood. Westdale is predominately a residential area with many local institutions, a commercial area and the McMaster University main campus.

The redevelopment of the former Westinghouse complex presented opportunities for integrating on-site heritage features. The architectural firm of William R. Souter & Associates was responsible for the Office Building of the West Plant on Longwood Road South. This building is an example of International Style architecture - a style only just emerging in Canadian cities at the time it was built in the early 1950's. The Office building is a well maintained structure that is presently being adapted to new uses. The Boiler/Power Plant has been retained in the eastern part of the site. It contains much of its original equipment and would be an interesting artifact and character element. The warehouse on the west side of Longwood will remain in the short term and removed as development proceeds westward as it does not lend itself to conversion to new uses.

Highway 403 provides regional access to and from the McMaster Innovation Park and links the Park to Highway 401, and the QEII which in turn connects to the USA. Highway 403 access is provided at the Aberdeen interchange adjacent to the southwest corner of the site. Highway 403 also provides convenient access to Hamilton's International Airport some 15 km to the west. Longwood Avenue bisects the McMaster Innovation Park and provides connection to Main Street and King Street to the north and Aberdeen Avenue in the south.

Longwood Road is also a pedestrian route across Highway 403, linking residential neighbourhoods on the east side with McMaster University and the residential neighbourhoods of Ainslie Wood and Westdale, home to Westdale Collegiate, Columbia International College, McMaster University Medical Centre (MUMC) and The McMaster University Health Sciences Centre. Local public transit serves the site with one route which links McMaster’s Innovation Park to Downtown and the McMaster campus (with transfer).
The McMaster Innovation Park is part of the West Hamilton Industrial Area, which extends east of the site to Dundurn Street. A variety of businesses operate in the area including steel related companies, manufacturers, warehousing, and storage. In addition there are a growing number of office businesses in the area and recreational uses on Frid Street where more light industrial/office type uses operate, particularly through the redevelopment undertaken by Sandona Corporate Village. The Hamilton Spectator daily newspaper is a prominent landmark visible from Highway 403 at the Main Street overpass. In general, the planning policies of the Region of Hamilton-Wentworth and the City of Hamilton support the redevelopment of industrial areas, such as the Camco site. The preservation and attraction of industry and employment uses is an important objective for the City.

4.2 Planning Policies

There are a number of City policies and planning initiatives which have bearing on the McMaster Innovation Park.

Hamilton is a single-tier municipality; however, the planning policies of the former Regional Municipality of Hamilton-Wentworth have yet to be repealed and are in effect.

The subject property is designated as Urban Area in the Hamilton-Wentworth Official Plan, the former Region's upper-tier policy document. The Urban Area includes the retention and promotion of areas designated for manufacturing.

The Hamilton-Wentworth Official Plan and the City of Hamilton Official Plan designate as Arterial Roads: Aberdeen Avenue, Longwood Road, Dundurn Street and Main Street. The purpose of these roads is to carry higher volumes of traffic in and through the City, and provide limited access to abutting properties. The Aberdeen Avenue interchange provides the most direct and convenient access to and from the McMaster Innovation Park and Longwood Road in the western portion. Chatham and Frid streets are two-lane local roads, providing access to abutting properties for predominately local industrial traffic, but do not presently extend into the MiP site.

The Hamilton Official Plan designates the site as Industrial in the Land Use Concept. As such, the policies in subsection A.2.3 provide for the expansion of existing industry and for the attraction of new firms. Industry is defined as manufacturing, processing, warehousing, repair and servicing. Other related or ancillary uses may also be permitted: retail or wholesale that is subsidiary to the industry; business enterprises such as but not limited to banks, restaurants, garages, material suppliers, etc. which are intended to directly serve the Industries and their personnel; uses which have characteristics or functional requirements similar to industries; residences for maintenance staff; research and development facilities; transportation terminals and highway and road related services such as auto service station; other uses that complement or do not interfere or detract from the primary function of the area (policy A.2.3.1).

This site is further defined through Special Policy Area 11. In addition to the Industrial designations, laboratories, research, communication facilities, printing and publishing plants, and the ancillary uses of clubs or establishments catering to leisure activities are permitted in view of their minimal environmental impacts and good architectural quality in building design.

The City of Hamilton Zoning By-law zones the Camco site as Heavy Industry, "K" District zone that permits a wide range of commercial and industrial uses ranging from light to heavy industry. The City passed an Interim Control By-law 05-041, on February 23, 2005 for the purpose of precluding development not compatible with the proposed new research park until such time as the City has studied and created new Official Plan policies and Zoning By-law regulations to guide development and/or redevelopment in the West Hamilton Industrial Area.

A new By-law is drafted and was approved by Council in 2006 but is presently being appealed to the Ontario Municipal Board by various
parties. To date some of the appeals have been resolved, while some remain outstanding. The lands within the MIP have been dealt with by the Ontario Municipal Board, but planning staff at the City are awaiting a formal Board Order. Proposed development within the MIP can proceed at this time.

The McMaster Innovation Park site is not within the Niagara Escarpment Plan and not subject to the policies of that Plan. The site is not within a Heritage Conservation District and no buildings on site are designated heritage structures.

In addition, the City of Hamilton recently developed an Economic Development Strategy based on ‘cluster development’. The eight clusters being promoted in Hamilton are: advanced manufacturing, agriculture/food and beverage processing, port-related industry/business, aerotropolis, biotechnology and biomedical, film, tourism and arts, and the Downtown. The concept of cluster development provides geographic concentration of competing and co-operating companies, suppliers, service providers and associated institutions, organized to strengthen and diversify the City’s economy, by way of including the City’s inherent and growing strengths. For example, the McMaster Innovation Park will provide a multidisciplinary focus on research and innovation, and will therefore become an important location for services related to research and development. In addition, the Strategy recognizes the importance of attracting business investment, and improving the infrastructure and future development for the West Hamilton Industrial Area to accommodate these new businesses.

4.3 Environmental Features

The McMaster Innovation Park site is a brownfield redevelopment project. The site has been used for industrial purposes for approximately 100 years. It was extensively altered over the years and almost entirely utilized for building, parking and storage purposes. As such, there are no significant natural features on site.

Along the western edge of the site is a steep slope down to Highway 403. The slopes are
grassed but in the future could be planted with trees and shrubs to create a significant new natural feature on site.

To the east of the site on property owned by others is the Chedoke Creek valley. The creek was channelized in a concrete pipe upstream many years ago and now empties into its natural watercourse close to the 403. The treed valley is steeply sloped, running parallel to the northeast portion of the MIP. From the northern edge of the adjacent property the creek continues along the edge of Highway 403 towards Couttes Paradise. Site development should respect the location and character of this open space and future stormwater facilities could be integrated to create new ecosystem components.

Testing has been undertaken to determine whether there is any contamination of the site. As would be expected given the history of the site, there are several areas which will require site remediation prior to development. A site specific risk assessment (SSRA) has been submitted to the Ministry of the Environment for review and approval. This plan outlines how the site remediation work will take place and will address potential noise, dust and other effects on air quality that may arise from excavation, transport or treatment activities.

4.4 Servicing and Utilities

The McMaster Innovation Park development is within an established part of the city and generally services are available to accommodate a redevelopment of the Innovation Park.

4.4.1 Water and Sewer Service

Water supply is fed from the City of Hamilton Hillcrest Reservoir with water mains generally following the local street network. A 150mm and a 300mm water main are found along Aberdeen Avenue to service the MIP from the south end. A 500mm water main follows Aberdeen Avenue and along Longwood Road, across the Highway 403 bridge to Main Street. There are no fire hydrants along the 500mm water main as the former Camco operation had its own fire system on site.

The MIP is within an older neighbourhood which is served by a combined sewer system (both sewage and storm water run-off in a single pipe). The City is in the process of constructing combined sewer overflow (CSO) tanks to address treatment and flooding problems associated with its older combined sewer system. The City’s Official Plan directs that new sanitary sewers and storm drainage facilities be separate and encourages the separation of existing combined systems when appropriate opportunities arise.

A 900mm sanitary trunk sewer is located along the Highway 403 right-of-way from the Longwood Bridge easterly to the Main-King sewer overflow tank at Cathedral Park on the north side of Main Street. A 250mm sanitary sewer connected to the 900mm truck sewer is located at the north end of the site at the former northeast parking lot.

4.4.2 Stormwater System

The MIP and the adjacent West Hamilton Industrial Area is within the Chedoke Creek subwatershed. This watercourse has been significantly altered over the years and large portions of the creek upstream of the site are either enclosed in storm sewers or have been channelized. There is a large concrete box sewer immediately east of the MIP site and under the adjacent SAMEE Metals building. On the west side of Longwood Road, a similar concrete storm sewer runs under the property and outlets at the edge of the site along Highway 403.

At this time, there are no on-site stormwater management facilities. Stormwater simply runs off the site and into the adjacent channels and creek valley.

Redevelopment of the site provides the opportunity to implement water and stormwater management techniques that can control both the quantity and quality of stormwater run-
off from the site. A series of techniques are available to minimize stormwater run-off by collecting and recycling rainwater for use both within the building and for site irrigation, for example. There are other lot level solutions which can provide for infiltration at the source. Lastly, stormwater run-off can be collected and piped to stormwater management ponds where the water is detained, sediments filtered out, and water outletted to the adjacent drainage courses.

These and other techniques have been reviewed and a diverse range of solutions is included in the Master Plan.

4.5 Transportation

The McMaster Innovation Park is well served by the existing transportation system in the west end of Hamilton. The location of the site relative to the adjacent transportation system is illustrated in Figure 1. Highway 403, a Provincial freeway corridor connecting Highway 401 at Woodstock in the west to the Queen Elizabeth Way (QEW) and Highway 407 at Burlington in the east is located immediately adjacent to the site. The site is located directly on existing City of Hamilton arterial roadways (Longwood Road, Aberdeen Avenue) that provide traffic access and mobility. Local public transit services adjacent to the site are operated by the Hamilton Street Railway (HSR). City pedestrian and some cycling facilities are provided in this area. A more detailed assessment of the current transportation facilities and services is provided below.

4.5.1 Roads and Traffic

Several major roadways provide access to the McMaster Innovation Park.

Highway 403 is a Provincial freeway corridor through the City of Hamilton, carrying about 85,000 vehicles per day. This corridor provides connections to Ancaster, Hamilton Mountain via the Lincoln Alexander Parkway, Mount Hope and Caledonia to the south, Brantford and other communities to the southwest. It also provides connections to Waterdown, Burlington, the Greater Toronto (GTA) and other communities to the east and north of Hamilton. For the MIP site, access and egress to Highway 403 is provided by an all movement interchange at Aberdeen Avenue and a partial movement interchange at Main Street West.

Longwood Road functions as a minor north-south arterial roadway connecting with Aberdeen Avenue, Main Street West, King Street West and other local streets in the neighbourhoods to the north. In the immediate area of the MIP site, Longwood Road has a basic four lane cross-section and carries about 23,000 vehicles per day. The intersections of Longwood Road with Aberdeen Avenue and with Main Street West are controlled by traffic signals. It should be noted that Longwood Road is one of only three roadways crossing the Highway 403 corridor within lower Hamilton (the other two roadways are King Street West which is one-way westbound and Main Street West which is one-way eastbound).

Aberdeen Avenue functions as a minor east-west arterial roadway with connection to Highway 403, Longwood Road, Dundurn Street, Queen Street/Beckett Drive and James Mountain Road.

Main Street West functions as a major arterial roadway providing a continuation of the King Street – Main Street one-way corridor through the west areas of Hamilton and connecting to the Dundas area further west. West of Longwood Road, it carries about 35,000 vehicles per day. Main Street West has a signalized intersection with a Highway 403 westbound exit ramp and eastbound entrance ramp about 0.35 km west of the Longwood Road intersection.

The traffic conditions in the area have been assessed based on traffic counts conducted on typical weekdays in 2005. A summary of the weekday traffic volumes is provided in Table 1 below.

The current weekday level of service conditions at the key intersections are summarized in Table 2 on the adjacent page. This data
indicates that the three key intersections are generally operating at reasonable levels of service at the present time. The intersection of the Highway 403 ramps and Main Street West is operating well and has additional spare capacity to accommodate additional traffic. However, the intersections of Main Street West and Longwood Road and Longwood Road and Aberdeen Avenue are currently heavily utilized and have limited spare capacity to accommodate future traffic growth.

Based on experience with similar size facilities, the full development of the MIP site could generate up to 900 to 1,000 vehicular trips during weekday peak hours at full build-out. This is a substantial amount of traffic in an area where the adjacent roadway network is heavily utilized and spare capacity is limited. To reduce the impact of MIP site traffic on the adjacent roadways and also in support of the vision of a sustainable development on this site, it will be important that measures are implemented that will minimize vehicular traffic generated by the site. This may be achieved through a number of strategies, as follows:

- Implementing active, ongoing measures to shift travel away from private vehicles to public transit, walking and cycling modes.
- Implementing measures to increase vehicle occupancy and to reduce the amount of demand during peak hours.
- Provision of services on the site help reduce travel needs of the site occupants.
- Ongoing monitoring and management of travel demands to and from the site to encourage the reduced use of resources for travel activities.

4.5.2 Public Transit Services

Local public transit service in Hamilton is operated by the Hamilton Street Railway (HSR), a department of the City of Hamilton. This area is well served by the following public transit services:
- The 6 Aberdeen bus route operates along Aberdeen Avenue and Longwood Road

<table>
<thead>
<tr>
<th>TABLE 1: EXISTING TRAFFIC VOLUMES</th>
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<tr>
<td><strong>Main West &amp; Hwy 403 Ramp approach volume</strong></td>
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<tr>
<td><strong>Main West &amp; Longwood approach volume</strong></td>
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<tr>
<td><strong>Longwood &amp; Aberdeen approach volume</strong></td>
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<td><strong>403 WB to Main West ramp volume</strong></td>
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<td><strong>403 EB to Aberdeen ramp volume</strong></td>
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<td><strong>Main West to 403 EB ramp volume</strong></td>
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<td><strong>Aberdeen to 403 WB ramp volume</strong></td>
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</table>
through the MIP site. This route provides frequent weekday and weekend service for the Westdale North and Kirkendall neighbourhoods, operating directly to and from downtown Hamilton.

- The 5 Main West/Delaware bus routes operate along Main Street West about 300 to 400 metres walking distance north of the MIP site. These routes provide frequent weekday and weekend service along the Main Street West corridor with direct connections to downtown Hamilton. The services operate past the main McMaster University campus but do not currently enter the campus.

- The 1 King/5 West Hamilton/10 Beeline/51 University bus routes operate along King Street West providing frequent service between downtown Hamilton and the McMaster University campus. These routes enter the main areas of the campus. The walking distance to these bus routes from the MIP site is about 700 to 800 metres.

Public transit services are currently well used by the students, staff and faculty at McMaster University. The McMaster Students Union (MSU) and the Graduate Students Union (GSU) have established a bus pass program through which all students pay an annual fee and receive a pass providing use of the HSR services at all times during the eight month school term. The existing routes provide excellent service to and from downtown Hamilton with connections available to most areas of the City. However, travel between the MIP site and the McMaster University campus currently requires a lengthy walk or transfers between routes.

GO Transit currently operates regional bus service to the McMaster University Campus on weekdays. The McMaster University GO Bus service provides regular weekday service to and from the Burlington GO Station with connections to the Lakeshore West GO Train service. The Hwy 407 West GO Bus service provides connections from the Hamilton GO Centre through McMaster University along the Highway 407 corridor to York University.

### TABLE 2: EXISTING LEVEL OF SERVICE CONDITIONS

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<tr>
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<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
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<tr>
<td><strong>Hwy 403 Ramps &amp; Main St West (SIGNALIZED)</strong></td>
<td><strong>Level-of-Service Summary</strong></td>
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<tr>
<td><strong>Critical Movement</strong></td>
<td><strong>Delay (seconds)</strong></td>
<td><strong>Level of Service</strong></td>
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<tr>
<td>OVERALL</td>
<td>21</td>
<td>C</td>
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</tbody>
</table>

| **Longwood Rd & Main St West (SIGNALIZED)** | **AM Peak Hour** | **PM Peak Hour** |
| **Critical Movement** | **Delay (seconds)** | **Level of Service** | **Volume / Capacity** | **Critical Movement** | **Delay (seconds)** | **Level of Service** | **Volume / Capacity** |
| NB L             | 69                                                 | E                                                  | 0.96                  | NB L                | 43                   | D                    | 0.84                  |
| SB LTR           | 71                                                 | E                                                  | 0.97                  | SB LTR              | 48                   | D                    | 0.89                  |
| OVERALL          | 35                                                 | D                                                  | 0.99 (max)            | OVERALL             | 26                   | C                    | 0.90 (max)            |

| **Longwood Rd & Aberdeen Ave (SIGNALIZED)** | **AM Peak Hour** | **PM Peak Hour** |
| **Critical Movement** | **Delay (seconds)** | **Level of Service** | **Volume / Capacity** | **Critical Movement** | **Delay (seconds)** | **Level of Service** | **Volume / Capacity** |
| EB L             | 35                                                 | D                                                  | 0.95                  | EB L                | 35                   | D                    | 0.95                  |
| SB L             | 79                                                 | E                                                  | 0.91                  | SB L                | 79                   | D                    | 0.91                  |
| SB LY            | 51                                                 | D                                                  | 0.73                  | SB LY               | 51                   | D                    | 0.73                  |
| OVERALL          | 29                                                 | C                                                  | 0.95 (max)            | OVERALL             | 24                   | C                    | 0.94 (max)            |

*Only critical mvmnts shown for stop control and movements over LGS C for signalized intersections*
4.5.3 Pedestrian and Cycling Systems

Pedestrian movement in the general area of the MIP site is accommodated by sidewalks along all the arterial and local roads. The intersection of Main Street West and Longwood Road has a high level of pedestrian activity with almost 400 pedestrian street crossings during the morning peak hour. This relatively high level of pedestrian activity is related to the Westdale Collegiate high school on the northeast corner of the intersection as well as some commercial development along Main Street West and other area activities. As the high school accommodates students living in the residential areas east of the MIP site, there is pedestrian travel along Longwood Road through the MIP site.

Longwood Road currently has a sidewalk only along the east side of the roadway from Aberdeen Avenue to Main Street West. The Longwood Road bridge structure across Highway 403 has one narrow sidewalk on the east side of the structure.

Aberdeen Avenue has a sidewalk along the north side of the street from Longwood Road through the structure under the rail line east of the MIP site. Main Street West has sidewalks along both the north and south side of the street on either side of Longwood Road. The sidewalks on Longwood Road, Main Street West and Aberdeen Avenue are immediately adjacent to the traffic lanes on the roadway.

The current pedestrian accommodation though the MIP site and connection to the north side of Highway 403 provide a basic walking route separated from vehicular traffic. However, the pedestrian environment is not pleasant given the close proximity to vehicular traffic and the narrow sidewalk coupled with the restriction of only a sidewalk on east side of Longwood Road.

The City of Hamilton has been developing a City-wide cycling network of designated bike routes and separate bike lanes for a number of years. McMaster University generates a significant volume of bike traffic and the corridor between McMaster and the central area of Hamilton is heavily used by cyclists.

The City currently has designated bike lanes along King Street across Highway 403 and also along Sterling Street from King Street into the McMaster campus. These designated bike lanes have connections to designated bike routes using mixed traffic lanes along different roads between the University and the central area of Hamilton. However, east of the Highway 403 crossing, the most direct designated bike routes follow King Street and Main Street which are also relatively high volume traffic routes.

In the vicinity of the MIP site the following streets are designated bike routes:

- Longwood Road from Aberdeen Avenue across Highway 403 and continuing north to the Royal Botanical Gardens (RBG) park lands.

- Aberdeen Avenue from Longwood Road to Dundurn Street; at this intersection, the bike routes run north and south along Dundurn Street.

- Marion Avenue South, a local neighbourhood street north of Main Street West, is a designated bike route connecting the Longwood Road route to Westdale Village and the Sterling Street bike route to McMaster.

The Longwood Road bike route provides a critical crossing of the Highway 403 corridor for the Kirkendall neighbourhood as well as other commuting cyclists. Along Longwood Road and the connecting section of Aberdeen Avenue, cyclists are required to travel in mixed traffic lanes in relatively high volumes of vehicular traffic and through intersections with considerable turning traffic. These conditions are demanding for most cyclists and involve exposure to higher safety risks than desired. The City of Hamilton has been investigating possible options for an improved cycling route across the Highway 403 corridor in this general area in response to the poor conditions along the Longwood Aberdeen route.
4.5.4 Travel Demand Management

Travel Demand Management (TDM) is a term used to describe a broad range of measures that are aimed at reducing peak period vehicular traffic demand by shifting demand to other modes, by shifting demand to non-peak time periods, that substitute alternate work patterns that reduce travel activity and that reduce demand by increasing vehicle occupancy. A reduction in auto travel to the site also reduces the demand for parking on site, which can be a significant cost saving for the development and its tenants.

McMaster University is a leader in this area with the Alternative Commuting & Transportation (ACT) Office having been established a number of years ago to help to manage traffic and parking demand on the main campus. The MIP development will support an active TDM program and encourage the participation in this program by all occupants of the site as part of the strategy to ensure the overall sustainability of this development.

4.6 Site Buildings

Most of the former Camco and Westinghouse manufacturing buildings were not suitable for adaptive reuse for research, laboratory, office and academic space in the new McMaster Innovation Park. As such, these former industrial buildings on the east side of Longwood Road have been demolished to provide for redevelopment.

The former Camco office, annex and warehouse building at the north end of the site on Longwood Road has been maintained. This space is being renovated and will be reused for a variety of McMaster University, MIP and other research facilities. The 4 storey building contains over 150,000 square feet of space. Its prominent location, sited at the bend on Longwood Road, fits within the desired urban form being promoted for Longwood Road and should serve as an appropriate multi-purpose first stage of development.

The boiler and power house building is located on the eastern edge of the property. This small brick building contains much of its original equipment and machinery. It is an interesting example of the machinery necessary to power an industrial complex of the last century. The building and its equipment provide an opportunity for retention and possible development as an exhibit of the site history and 20th century industrial operations.

The warehouse building on the west side of Longwood Road will be maintained in the short term for warehouses purposes. It, too, does not lend itself to adaptive reuse and will be demolished to provide for new research facilities.

4.7 Sustainable Development Objectives

The development of McMaster Innovation Park is an exciting opportunity to redevelop a brownfield site into a vibrant new neighbourhood in an environmentally sustainable manner. McMaster University has made a commitment to achieve a high level of environmental stewardship and responsibility through its activities and is guided by its Campus Master Plan. The development of MIP provides an opportunity to further those objectives and become a leader in sustainable design and development within the City of Hamilton.

The area of sustainable design and "green buildings" is an emerging one. McMaster University is following those sustainable design principles in its current buildings projects. The Leadership in Energy and Environmental Design (LEED) suite of tools developed by the Canadian Green Building Council (CaGBC) in association with the United States Green Building Council (USGBC) provides a roadmap for both site and building design. LEED certification of buildings is a demonstration of a site and building commitment to sustainable design. McMaster University is seeking LEED certification on three current building projects and has included it in the project requirements for the proposed Engineering building, currently in preliminary stages.
Green buildings and site design can achieve a number of social, environmental and economic goals well beyond those of conventional buildings. Buildings designed utilizing sustainable design principles can offer a healthier, more comfortable interior environment for occupants and incorporate measures to reduce their ecological footprint. The ecological goals are typically achieved by reducing energy and water use through innovative systems in the buildings and on site. These energy reductions also offer significant economic benefits as well.

The recent report “Building a Case for Green Buildings in Canada”, prepared for Industry Canada summarizes the important benefits of green buildings including:

- Superior occupant comfort and health;
- Ecological benefits that reduce climate change impact;
- Reduced operating costs;
- Productivity gains;
- Property value and absorption rate gains;
- Increased retail sales;
- Improved image; and,
- Risk reduction.

There are two distinct items that require attention from a sustainable perspective. The first relates to the site development itself. The second relates to buildings to be built on the site. The LEED Green Building Rating System provides sufficient guidelines for dealing with the second issue. However, LEED, through the CaGBC has explicitly stated that it “certifies buildings” — that is: Sites are currently not subject to certification under LEED. That said, the USGBC has drafted and released a preliminary version of the LEED-ND (Neighbourhood Development) Rating System. This system is based on both LEED’s underlying principles and a number of the core “smart growth” values.

While there are many features and design elements which can be pursued at both the master plan and building design level, it is necessary to ensure that the recommended measures are both technically appropriate and fiscally responsible for the type of development being proposed in the MIP. Emphasis will be placed on on-going and long term operating costs where payback for energy reducing measures can be achieved in the short run, often in the order of five years. The pursuit of green buildings does carry a premium over conventional construction. The determination of the appropriate level of LEED certification does provide options for the degree of sustainability to match individual building use and tenant requirements.

At the neighbourhood or master plan level, there are a number of considerations identified through LEED including:

- Locational efficiencies through site consideration such as water and stormwater management infrastructure, redevelopment and reuse potential of existing buildings and impact of transportation options;
- Environmental preservation for site ecosystems;
- Compact design and the provision of transit oriented and walkable neighbourhoods which reduce dependence on automobiles; and,
- Resource efficiency with respect to energy addressed through such facilities as a central co-generation plant of water treatment facility.

Building design principles promoted through LEED include:

- Water efficiency through reduction of water use and reuse of grey water, black water and stormwater;
- Energy and atmosphere targets for energy performance of buildings;
- Materials and resources including potential for reusing materials, using locally manufactured materials with a high recycling content;
- Indoor environmental quality through the provision of a healthy, vibrant place to work or play; and
• In other design aspects such as housekeeping programs, cleaning products, public outreach and education and similar efforts.

4.8 Development Program

The McMaster Innovation Park will be a high value research and learning community, a discovery district within the city that is home to research oriented companies and organizations, and learning institutions. It is intended to be a globally recognized centre of expertise in such fields as advanced materials and manufacturing, biotechnology and nanotechnology. As well, McMaster University intends to locate strategic academic facilities on the MIP campus, possibly in conjunction with other academic institutions.

The CANMET research facility will be the first new building constructed on the Innovation Park site. Located directly to the south of the existing 175 Longwood building the CANMET facility will occupy the north-east corner of Longwood Road and the Frid Street extension. Designed to accommodate Natural Resources Canada’s materials technology laboratory, the 140,000 square foot facility will set a benchmark for new building design on the campus. The sustainable building is pursuing LEED Platinum certification and is intended to begin construction in 2009.

The actual composition of other buildings will evolve as tenant interest is secured and academic requirements are known. For planning purposes it is assumed that MIP will contain approximately 1 million to 1.5 million square feet of space and will have approximately 1,500 employees and up to 1,500 students on site.

MIP will be a complete neighbourhood and is intended to contain a variety of support services and community facilities. It is anticipated that MIP may have retail, restaurant, personal services, recreation, professional services, daycare, fitness and other support facilities perhaps in the order of 50-60,000 square feet. There is the possibility that short-term accommodation for visiting scholars and researchers be provided for those working within the Park. The plan will also provide future opportunities for hotel and conference facilities to be located along with opportunities for community use of facilities such as parks and auditorium space.

4.9 Directions for Master Plan

The site analysis and context provided in this section leads to a series of opportunities and constraints for the development of the MIP site.

Key development features and opportunities are noted as follows:
• The extensive Highway 403 frontage and site elevations create prominent views to the site and an opportunity to create landmark buildings in key locations.
• The slopes adjacent to Highway 403 provide opportunities to naturalize and enhance site conditions.
• Entrances to the site at the Longwood Road bridge and the Longwood Road and Aberdeen Avenue intersection create local gateways that can be enhanced through landscape design, signage and built form.
• Longwood Road can be transformed from an auto and truck oriented through route into a vibrant “mainstreet” that will serve as the focal point for a new urban neighbourhood.
• Connections to the adjacent neighbourhood can be made through improvements on Longwood Road and Aberdeen Avenue in order to functionally connect the Kirkendall neighbourhood and the Westdale neighbourhood through MIP.
• Site grading and the adjacent creek channels suggest any required stormwater management facilities will be located in the northeast corner of the site and the west central area of the site west of Longwood Road.