CITY OF KINGSTON ACQUISITION
OF FEDERAL SURPLUS LANDS:
BARRIEFIELD VILLAGE

PHASE 1 **FEASIBILITY STUDY**

AUGUST 31st, 2010 / 09152 A

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1.0 EXECUTIVE SUMMARY

The Feasibility Study on the potential acquisition of federal surplus land in Barriefield must determine whether it is feasible to develop affordable housing on land potentially available from the Federal Government. The three parcels of land along Highway 15 have been appraised by the Federal Government for more than $1 million and could be acquired by the City of Kingston for $1 under the SRPFHI (Surplus Real Property for Homelessness Initiative) program, should a positive response to this question be determined. The three parcels of land are located within the boundaries of the Barriefield Heritage Conservation District.

The response to this question requires careful consideration of a number of key decision making criteria with respect to any affordable housing development concept considered for these lands. The affordable housing concept must:

- Be compatible and consistent with the existing character of Barriefield Village and respect the requirements of the Barriefield Heritage Conservation District Plan.
- Meet the City’s vision for development in the area, as set out in the recently approved City of Kingston Official Plan (January 27, 2010).
- Help to address affordable housing needs in the City of Kingston and comply with the City’s definition of affordable housing, as set out in the City’s Official Plan, in order to meet the requirements of the SRPFHI and qualify for the available funding.
- Be financially feasible from the outset and create new housing which is livable and sustainable.
- Be able to meet the timeframes for planning approval and construction set out in the SRPFHI in order to qualify for the available funding, which requires zoning to be approved for the development by the end of March 2011 and construction to be largely completed within two years after that date.

In order to address these criteria, the Feasibility Study included the preparation and review of preliminary technical studies necessary to identify any constraints on the surplus lands. The technical studies yielded the following results and conclusions:

- Municipal services (storm, sanitary and watermain) of sufficient capacity are available to service the surplus lands.
Based on the predicted noise impacts, development is feasible on the surplus lands if outdoor amenity areas are shielded from Highway 2 and Highway 15 through building orientation and architectural design.

The intersection of Wellington Street and Highway 15 is operating at a good level of service and with additional development, traffic control signals are not required.

Low-density residential development was contemplated on the three parcels of land in the 1980 Barriefield Heritage Conservation District Plan & Study. The 1992 update to the Barriefield Heritage Conservation District Plan encourages new development only where it respects or otherwise complements the low profile and built character of Barriefield. Building heights of new structures must maintain the building height of adjacent properties and the immediate streetscape and should be neither excessively higher nor lower. Views of the landmark St. Mark’s Anglican Church and the landscape character of the village are also to be considered.

The City of Kingston Official Plan permits single family dwellings, limited semi-detached dwellings and a senior citizens home on the subject lands.

Consideration was given to a previous development concept considered by the City proposing eight 4-plexes (32 units) spread across Parcel 3. It was found that this form of development was not compatible or consistent with the form and character of Barriefield Village and therefore would contravene the heritage guidelines of the Barriefield Heritage Conservation District Plan and Official Plan. Therefore, this concept was rejected as being unsuitable.

There are a wide range of affordable housing needs facing the City of Kingston, including a lack of affordable housing supply east of the Great Cataraqui River in the former Township of Pittsburgh.

The affordability that can be achieved is directly linked to the investment of required funding by the City of Kingston, as there are currently no funding programs available from senior levels of government to help meet required costs.

The financial feasibility assessment accounted for the full range of development costs. As set out in Appendix E, these included both soft costs (e.g. building design and planning services; site, technical studies, surveys) and hard costs (e.g. construction and finishing costs, including site servicing). Annual operating costs were also considered.

During the course of the Feasibility Study, the study team consulted with a wide range of potential development partners. Town Homes Kingston, Kingston Frontenac Housing Corporation, Habitat for Humanity, Options for Homes, and a number of active local private development firms, expressed an interest in participating in the development of affordable housing in some fashion.

Based on the results of the technical studies in Phase 1, the input received from the public and stakeholders, and the examination of several development concepts, the project team has developed a preferred development concept. The preferred development concept includes a 2-storey 32-unit seniors apartment building on Parcel 2 adjacent to the existing school, and 16 single-detached units.
and 2 semi-detached units on Parcel 3 east of George Street. Parcel 1, north of St. Mark’s Church, is proposed to be retained as public parkland/open space.

The preferred development concept meets the following criteria:

- It is compatible with adjacent lands and is subordinate to and distinguishable from the original heritage fabric of Barriefield.
- It is consistent with the Provincial Policy Statement and conforms with the existing designation of the subject lands in the City of Kingston Official Plan and also with the specific Official Plan policies related to Barriefield.
- It is financially feasible from the outset of the project and sustainable over the long term provided that City Council invests the specified required funding.
- It helps address affordable housing needs in the City of Kingston, and the units can be developed within the affordability definition in the Official Plan.
- It provides walkable public spaces with direct access to transit, connections to nearby neighbourhoods and communities, and architectural components that contribute to the urban sustainability of the project.

Accordingly, it is recommended that the City of Kingston carry out the following steps:

- Make application under the SRPFHI to acquire the subject lands before the October federal deadline;
- That City Council, at a minimum, consider committing the following funding in support of the proposed affordable housing development, and confirm the availability of this funding in the recommended SRPFHI application:
  - A capital grant of $3,840,000 ($120,000 per unit) towards the development of 32 affordable seniors rental housing units on Parcel 2;
  - A capital grant of $500,000 ($10,000 per unit) to help offset municipal fees and charges for the development of Parcels 2 and 3;
  - Rent supplement assistance for a minimum of 12 rent-g geared-to-income units on Parcel 2.
- Complete additional technical analysis in Phase 2 as outlined in the City’s staff report;
- Complete a Stage 2 & 3 Archaeological Assessment to further assess the potential archaeological resources on the subject lands as part of Phase 2 of the study;
- Complete a Geotechnical Study to assess the bedrock conditions on the subject lands and an Environmental Impact Study to assess the woodlands on Parcels 2 and 3;
- Complete an update to the Phase 1 Environmental Site Assessment as part of their standard due diligence prior to acquiring the subject lands; and
- Consider options that may deepen affordability while still addressing a broad mix of income levels and household types within the development area.
2.0 INTRODUCTION

In May 2009, the City of Kingston (‘City’) became aware of an opportunity to purchase surplus lands from the Federal Government located within the Barriefield Heritage Conservation District. The surplus lands are currently owned by the Department of National Defence (‘DND’) and are comprised of three parcels of land (see Figure 1).

The Federal Government is offering the surplus lands to the City for one dollar, provided a feasible affordable housing project is approved for the lands. This grant program is available through SRPFHI (Surplus Real Property for Homelessness Initiative), through which municipalities can apply to acquire federal surplus lands at nominal cost provided the lands are developed for affordable housing.

In response to this offer, the City issued a Request for Proposals (RFP) to study the surplus lands and assess the feasibility of developing the lands for affordable housing through a two-phase study. Phase 1 consists of the Feasibility Study. Phase 2 would address the implementation of the recommendations from Phase 1.

On May 25th, 2010, the City of Kingston retained MHBC Planning and a team of consultants (‘the study team’) with expertise in heritage, architecture, affordable housing, planning, traffic, noise, civil engineering (servicing), and public consultation to conduct the Phase 1 investigations and prepare a Feasibility Study. This Feasibility Study represents the findings from Phase 1.

2.1 Project Overview

“The Phase 1 objective is to create a feasibility analysis that reflects the most appropriate and widely accepted form of affordable housing development on federal surplus land in Barriefield Village” (page 12, RFP No. #F31-CDS-CFS-2010-01).

The Feasibility Study includes the preparation and review of technical studies necessary to identify any constraints on the surplus lands. The technical studies and assessments that were undertaken as part of this study include:

- Planning Assessment (MHBC Planning – MHBC)
- Servicing Brief (MTE Consultants Inc. - MTE)
- Noise Analysis (Aercoustics Engineering Ltd. - AEL)
- Traffic Analysis (Paradigm Transportation Solutions Ltd. - PTSL)
Figure 1
LOCATION PLAN
& Surrounding Land Use

Part of Lots 19, 20 and 21
Concession East of the Great
Cataraqui River
Parts 1, 2 & 3, Plan 13R-18296

LEGEND

Subject Lands
Banfield Heritage Conservation District

Source: www.maps.google.com,
geometry-imagery @ 2010 digital globe

DATE: August 2010

SCALE

25 0 25 50 100
metres

CITY OF KINGSTON

Council Meeting 20 September 7, 2010
• Built and Cultural Heritage Analysis (Wendy Shearer Landscape Architect – a division of MHBC Planning; and Mark Thompson Brandt Architect & Associates - MTBA)
• Viewshed Analysis (MHBC)
• Affordable Housing Financial Analysis (SHS Consulting - SHS)
• Community Issues Identification Report (Williamson Consulting Inc. - WCI)
• Concept Plans for Development (Mark Thompson Brandt Architect & Associates - MTBA).

These technical studies and analyses, together with the community and City staff input, were considered in the preparation of the Phase 1 Feasibility Study.

2.2 Site Context

Subject Lands

The federal surplus lands are located along the eastern perimeter of the Barriefield Heritage Conservation District in the former Township of Pittsburgh. The surplus lands are described as Parcel 3, Parts 1, 2 and 3 on Plan 13R-18296. For ease of reference, the surplus lands are referred to as ‘Parcel 1’ in the north, ‘Parcel 2’ in the middle, and ‘Parcel 3’ in the south (see Figure 1).

The surplus lands are currently owned by the Department of National Defence (DND) and form part of Canadian Forces Base (CFB) Kingston. The lands are separated from the base by Highway 15, which forms the north and east boundary of the surplus lands. The surplus lands are located within the Barriefield Heritage Conservation District boundary.

Parcel 1 is a triangular piece of land bounded by Highway 15 to the east, Main Street to the west and the St. Mark’s Anglican Church property to the south. Parcel 1 is 0.63 hectares (1.56 acres) in area. The property ascends in elevation from Main Street towards the church. Parcel 1 is a vacant, grassed open field with a few individual trees. Fencerows of vegetation line the north and south boundaries. An access utility structure is located on the southeast corner of the parcel adjacent to Highway 15.
Parcel 2 is a relatively long piece of land located north of Wellington Street, west of Highway 15 and east of J.E. Horton Public School and the church. Parcel 2 is 1.35 hectares (3.34 acres) in area. The property is vacant and consists of flat open areas, scrub land and thickets of dense brush. A gravel parking lot located on the southwest corner of the parcel is currently used for parking at the school. The parking lot is accessed by a driveway from Wellington Street.

![Photo 3: View south from middle of the site to the parking lot.](image1)

![Photo 4: Bedrock outcroppings are located at the northern end of Parcel 2.](image2)

Parcel 3 is a rectangular piece of land west of Highway 15, south of Wellington Street and east of George Street. The Barriefield Rock Garden is located to the south. Parcel 3 is 1.61 hectares (3.98 acres) in area. An informal driveway access is located off Wellington Street opposite the driveway to the school parking lot. Parcel 3 is partially vegetated notably along George Street and in patches of dense brush on the southern half of the parcel. Parcel 3 is relatively level but drops in grade at the southern boundary limit towards Highway 2. Parcel 3 contains two utility structures along Highway 15 that provide access to underground services used by DND.

![Photo 5: View from driveway entrance southeast across Parcel 3.](image3)

![Photo 6: View east across Parcel 3 to DND facilities across Highway 15.](image4)

All three of the parcels have wire boundary fences around the sites with ‘No Trespassing’ signs attached to the fences. The surplus lands are not considered publicly accessible land, given this existing signage.

**Surrounding Area**

The surplus lands are located within the Barriefield Heritage Conservation District (HCD). The HCD is bounded by Highway 15 to the east, Highway 2 to the south and the Great Cataraqui River to the west (see Figure 1). Barriefield sits on a hillside, which rises from the river to
Highway 15. There are approximately 90 residences in Barriefield, including those units that are approved for construction.

St. Mark’s Anglican Church, located between Parcels 1 and 2, is the most prominent building in Barriefield and is highly visible from a distance. Built in 1844, the church faces the river with a driveway stretching from Main Street. The property is partially enclosed by a dry stone fence and driveway entrance framed by stone pillars. An ancillary building to the church is located directly south of the church.

J.E. Horton Public School is adjacent to (west of) Parcel 2. The school is a 2-storey building with 5 ancillary buildings (portables). According to the Limestone District School Board, the school is scheduled to close within the next couple of years.

Other non-residential uses within the HCD include the Frontenac County Museum and an antiques store.

The surrounding area is predominantly defined by institutional uses related to the military. CFB Kingston is located immediately south and east of Barriefield. The Kingston Military Community Sports Centre (KMCSC) is located approximately 400 metres from the intersection of James Street and Main Street. The KMCSC facility is available to residents living in the Kingston area.

The Royal Military College of Canada and Fort Henry are located south of Highway 2 towards the St. Lawrence River. Directly south of Barriefield across Highway 2 is a large block of residences along Assoro Crescent. A retail plaza (CANEX) is located approximately 500 metres from the intersection of Wellington Street and Highway 15. The retail plaza includes a household products store, convenience store, bank, barber shop, beauty salon, a dentist and fast food outlets.

CFB Kingston contains a number of large buildings adjacent to Highway 15 including the Central Heating Plant and Thompson Drill Hall. The Central Heating Plant is approximately 3-4 storeys in height. There are 6 large solar panels immediately east of the Wellington Street terminus at Highway 15.

Heading north on Highway 15 towards the gateway to the City at Highway 401, the area contains a number of subdivisions in various stages of development, a large school, a library, a business park, and commercial uses.
The strong presence of Highway 2 and Highway 15 is a key element of the site context. The highways isolate the community from the south and east, in terms of the visual, physical and acoustic presence, and by the visual isolation. Views into and out of the core of the village from/to these highways are largely concealed by the grade change and the vegetation at the Barriefield Rock Garden to the south of James Street and by a large grouping of plantings along the east side of George Street.

Photo 9: View looking north from Highway 2 towards the Barriefield Rock Garden (Source: Google, 2010).

Photo 10: View looking northwest from Highway 15 towards Parcel 3 (Source: Google, 2010).

Photo 11: View looking southwest from Highway 15 across Parcel 2 to the school (Source: Google, 2010).

Photo 12: View looking west from Highway 15 across Parcel 3 to George Street (Source: Google, 2010).
3.0 SITE DEVELOPMENT CONCEPTS

3.1 Overview of Site Options

Various development options were considered and assessed in terms of compatibility with Barriefield Village and compliance with the Barriefield Heritage Conservation District Plan. This occurred together with the identification of preliminary site constraints and considering the range of uses permitted under the City of Kingston Official Plan. Parcel 1 was identified as having no development potential for new housing due to the prominent location of the parcel and the potential to negatively impact the views to St. Mark’s Church. The parcel would, however, be appropriate as parkland for the enjoyment of the residents of Barriefield and surrounding communities. The three main concepts investigated by the study team for Parcels 2 and 3 were as follows:

**Site Development Option 1**

This concept involved the proposed construction of single-detached and semi-detached homes across Parcels 2 and 3. This option would have provided approximately 15 dwelling units on Parcel 3, and approximately 7 units on Parcel 2 (due to the desirability to remain on the southern portion of the site to retain the significant views to St. Mark’s Church from Highway 15). The study team ultimately chose not to pursue this option on Parcel 2 because it did not provide for a feasible scale of development, due to the low unit yield and related affordability concerns. In addition, this development concept would miss the opportunity to optimally develop Parcel 2, reflecting the character of the abutting lands, which contain a two-storey institutional building.

**Site Development Option 2**

This concept involved the construction of multiple dwellings (townhouses and apartments) across Parcels 2 and 3. This option would have generated a relatively high unit count, but was not supported by the study team as appropriate given the scale of development compared to the heritage character values of the village, and non-conformity to the Official Plan.
**Site Development Option 3**

The third concept considered was a balance of the first two options, providing for single-detached and semi-detached dwellings on Parcel 3, as well as a small-scale seniors apartment building on Parcel 2, with open space to its north side. The study team felt this provided for an appropriate scale and type of development on each parcel, with building form complementing the adjacent built pattern and landscape opportunities. This is the development concept that was subsequently investigated in greater detail by the study team, and which formed the basis of the design explored and reviewed with the public and stakeholder groups.

### 3.2 Preferred Site Development Concept

The preferred option (Site Development Option 3) for the development of the subject lands is a mix of housing forms, providing for 16 single-detached and 2 semi-detached dwellings (a mix of 1-storey, 1½-storey, and 2-storey dwellings) on Parcel 3, as well as a 2-storey, 32-unit seniors apartment building on the southern portion of Parcel 2 (Figures 2a, 2b and 2c). No development is proposed for Parcel 1 which is recommended to be retained as public parkland/open space.

The work completed during Phase 1 shows that it is feasible to develop a portion of the subject lands for affordable housing as single-detached / semi-detached, and seniors apartment dwelling units. The study team has worked to ensure that the preferred concept identified for the site meets the overall design considerations identified through the Phase 1 study. The proposal provides for a form of development that is both feasible and viable for the site, is compatible with the existing Barriefield area, and one that respects the surrounding built and cultural heritage. The preferred site development concept conforms with the policies of the City of Kingston Official Plan, and is consistent with the Provincial Policy Statement.

Consideration was given to a previous development concept considered by the City proposing eight 4-plexes (32 units) spread across Parcel 3. It was found that this form of development was not compatible or consistent with the form and character of Barriefield Village and therefore would contravene the heritage guidelines of the Barriefield Heritage Conservation District Plan and Official Plan. Therefore, this concept was rejected as being unsuitable.

The affordability analysis demonstrates that the proposed development can play an important role in meeting current and future affordable housing needs of the City of Kingston and can meet the affordability definition required to be eligible for the Federal SRPFHI Program. The analysis finds that the proposed development can be developed in a manner which is financially feasible from the outset and sustainable in the long run, providing the City of Kingston invests the required level of capital funding and rent supplement assistance and can be developed within the timeframes required by the Federal SRPFHI Program.

During the public consultation sessions, some concerns were expressed that the 2-storey apartment form of development proposed for Parcel 2 may not be compatible with the existing form of development within Barriefield Village. A review of the guidelines of the
PROPOSED
32 Units:
NEW SENIORS
APARTMENTS

PROPOSED
18 Units:
NEW SINGLES
AND SEMIS

Legend:
- NEW SIDEWALKS
  AND PATIOS
- NEW ROAD
  AND DRIVEWAYS
- NEW LANDSCAPE
  OPPORTUNITY
- BUILT FORM

Figure 2a
PREFERRED PARTIAL
SITE CONCEPT
Parcel 2 & 3

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SCALE: ± 1:1250
DATE: August 2010

Council Meeting 20 September 7, 2010
Figure 2b
PREFERRED PARTIAL SITE CONCEPT
Parcel 2

 Scale: ± 1:750
Date: August 2010

Barriefield Village
FEASIBILITY STUDY

Exhibit "A" Report 10-281
Council Meeting 20   September 7, 2010
Figure 2c
PREFERRED PARTIAL
SITE CONCEPT
Parcel 3
Barriefield Heritage Conservation District Plan notes that new development is to be compatible with and respect adjacent uses. The use adjacent to Parcel 2 is a two-storey institutional building (J.E. Horton Public School) with five ancillary buildings (portables). The proposed two-storey seniors apartment is compatible with this adjacent use and the other buildings in Barriefield and, therefore, meets the guidelines of the Barriefield Heritage Conservation District Plan (see Section 5.0).

While the proposed development will be distinguishable from the original heritage fabric from a design perspective (as recommended in the Parks Canada Standards & Guidelines), it will be integrated with Barriefield by way of pedestrian and vehicular connections, scale (compatibility with adjacent properties), retention of key vegetation and views, and visually in terms of built form. The Barriefield Heritage District Plans (Section 5.0) do not state that new development must replicate the existing built form. The Plans state that new development must be compatible with the special character of the area.

Accordingly, it was determined that this development concept would be compatible with the character of Barriefield Village and consistent with the policies of the Barriefield Heritage Conservation District Plan. The study team considers it a suitable development concept for consideration from a heritage conservation standpoint.

3.3 **Design Considerations**

The design considerations and key decision-making criteria related to the development of the three land parcels are generally derived from the following:

- Having a clear and comprehensive understanding of the site and surrounding area, a significant cultural landscape;
- Having a clear and comprehensive understanding of national and international heritage conservation principles and the Barriefield HCD Study and Plan, including the need for respectful compatibility with the existing village;
- Harmonizing heritage goals with affordable housing needs and functional program goals;
- Deriving built form where possible from traditional Barriefield vernacular, such as the use of primary/secondary complementary form, incremental and additive form, asymmetrically clustered groupings of simple forms and varied but generally low-scale proportions;
- Working with the physical site constraints; and
- Enhancing natural evolution of the Barriefield historic place through careful study of three-dimensional modeling of design options within the existing context.

The following design considerations were incorporated into the development of concepts for Parcels 2 and 3.

The design considerations related to Parcel 2 include:
• Keep building form to the south of the site as much as possible in order to optimize views to and open space around the historic church;
• Maintain a low profile for development (2-storeys maximum) similar to the adjacent school building and other Barriefield structures;
• Optimize the use of the infrastructure easement for access to the site, landscaped areas and parking;
• Provide a pedestrian connection with Parcels 1 and 2;
• Cross-connect vehicular access from Parcel 2 to Parcel 3;
• Use ‘pocket’ spaces derived from a varied building form;
• Reduce the impact of the parking area with landscaping;
• Use soft landscaping to buffer the built form and Highway 15 and to create a landscaped entrance to the village;
• ‘Break down’ the visual scale and consider irregular massing of the building to ensure a residential identity compatible with the Barriefield HCD;
• Ensure compatibility with existing built form, scale and massing of the adjacent buildings (i.e. school and church) and built form principles of other Barriefield buildings;
• Not include basements in the development due to shallow depth to bedrock, but instead use outbuildings to provide additional storage space; and
• Locate outside amenity areas to the west of the building in order to mitigate noise from Highway 15.

Design considerations related to development for Parcel 3 include:

• Maintain a low profile for development (maximum 2-storeys) based on the adjacent built form of other Barriefield structures;
• Provide a variety of building heights and footprints;
• Optimize the use of the infrastructure easement for public walkways, open spaces, and landscaped areas;
• Use soft landscaping to buffer the built form from Highway 15 and Highway 2 and to provide a landscaped entrance to the village;
• Maintain and enhance the existing dense vegetation along George Street to retain the streetscape of George Street;
• Orient buildings to front onto Highway 15 in order to mitigate noise relative to the rear yard amenity areas;
• Provide low density, lane-oriented housing forms;
• Provide improved public access and connectivity for pedestrians between Parcel 3, the village, Rock Garden, and adjacent lands;
• Emulate the use of the village’s outbuildings where possible;
• Use simple geometric forms and roof slopes;
• Harmonize porches and other architectural features with the principal building forms;
• Provide for ‘random’ occurrence in the design and setbacks of buildings to avoid repetition;
• Not include basements in the development due to shallow depth to bedrock, but instead use outbuildings to provide additional storage space; and
• Incorporate a lane to avoid the typical suburban road cross-section.

3.4 Built Form Analysis Process

After reviewing the previous documentation provided (regarding Barriefield, its historical significance, Heritage Conservation District Plans, previous proposals, objectives of the project and related information), the study team undertook extensive on-site analysis, including mapping, detailed landscape and built form photography, review of varied components of the District and the heritage character-defining elements.

With the aid of topographic and other maps provided, as well as on-line applications and the team’s measurements and photographic recording, the team constructed a three-dimensional model of the site using commercially-available concept modeling software, focusing on Parcels 2 and 3 and their immediate surroundings (Images 1-4 on the following pages). This included close approximations of the existing built forms, to scale into the model. The built form prime characteristics were then reviewed, identified and analyzed with the model and photographic records. This analysis was compared and partnered with the heritage character-defining elements identified by the team and the Heritage Conservation District Plan. Some of the results of this analysis were presented to the public at the second Public Information Centre.

This analysis formed the basis of the criteria for design of new built form which was explored and maintained or rejected through a series of “test-patterns” using the modeling software. This series of “trial and error” explorations allowed the study team to ascertain compatibility with the Barriefield vernacular. The three-dimensional model is created in a way where real-time “fly-through” of the site has been executed, including existing and proposed new subject portions. This “video” provides a somewhat realistic serial experience of the site and gives the viewer a clear enough understanding of the actualities of the concept, that confident comprehension of the compatibility between new and existing urban form is achieved.
Image 1: View looking southeast towards Parcel 2 and 3. The image shows built form concepts with all vegetation removed. A portion of existing Barriefield streets and buildings are shown together with the development concepts.

Image 2: View of the entry of the multi-form senior citizens apartment building, showing separation into smaller building forms, and front porches.
**Image 3:** View northeast towards the single-detached houses fronting onto the open landscaped area east of George Street. The new public walkway is located in the foreground.

**Image 4:** Looking southwest from the intersection of Highway 15 and Wellington Street to Parcel 3. The semi-detached unit is on the right.

**Image 5:** Looking southeast from Wellington Street and the new internal road to Parcel 3.
4.0 PLANNING POLICY OVERVIEW

4.1 Provincial Policy Statement

The Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest related to land use planning and development, and sets the policy foundation for regulating the development and use of land. The PPS provides for the appropriate development of land, and is intended to be read in its entirety with the relevant policies applied in each situation.

Section 1.4 provides policies related to housing. Section 1.4.1 indicates that it is provincial policy to “… provide for an appropriate range of housing types and densities required to meet projected requirements of current and future residents…”. The policy goes on to state that residential growth is to be provided through residential intensification and redevelopment on lands that are designated and available for residential development. The subject lands are so designated.

One of the ways in which to provide for an appropriate range of housing types and densities is to provide housing that is affordable to low and moderate income households (Section 1.4.3). Low to moderate income households are defined as being in the lowest 60% of the income distribution for the regional market area. Affordable is defined in the PPS as:

a) in the case of ownership housing, the least expensive of:
   1. housing for which the purchase price results in annual accommodation costs which do not exceed 30 percent of gross annual household income for low and moderate income households; or
   2. housing for which the purchase price is at least 10 percent below the average purchase price of a resale unit in the regional market area;

b) in the case of rental housing, the least expensive of:
   1. a unit for which the rent does not exceed 30 percent of gross annual household income for low and moderate income households; or
   2. a unit for which the rent is at or below the average market rent of a unit in the regional market area.
The above definitions of affordability are repeated in the City of Kingston Official Plan, with details added related to calculating annual costs.

Other sections of the PPS are also relevant to this project as follows:

- **Section 1.6** (Infrastructure and Public Service Facilities), supports the optimization of existing infrastructure and supports municipal sewage services and municipal water services as the preferred form of servicing for settlement areas.

  In this respect the subject lands are serviceable by means of municipal sewage services and water services (for details see Appendix A).

- **Section 1.6.5** (Transportation Systems) promotes connectivity within and among transportation systems and modes and supports land use patterns that promote public transit.

  An existing bus service is available, given an existing bus stop is located on Highway 15 near the intersection with Wellington Street. In addition, the subject lands are well served by a local street pattern.

- **Section 2.0** (Wise Use and Management of Resources, subsection 2.1 Natural Heritage), is intended to protect significant natural features, from development or site alteration.

  Our review of available natural heritage mapping would indicate that there are no “significant” natural heritage features on the subject lands. If the City chooses to proceed with Phase 2, an Environmental Impact Study will be prepared.

- **Section 2.6** (Cultural Heritage and Archaeology) indicates development and site alteration may be permitted on adjacent lands to protected heritage property where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.

  The subject lands are presently vacant but within the Barriefield HCD. Other sections of this report address this consideration and conclude that the preliminary concepts prepared are in keeping with the HCD Plan, which anticipated additional new development on these lands. If the City chooses to proceed with Phase 2, a full Heritage Impact Assessment will be prepared as well as an Archaeological Assessment.

It is concluded that the development concept discussed in Section 3.1 of this report is consistent with the PPS.
4.2 City of Kingston Official Plan

A new Official Plan for the amalgamated City of Kingston was adopted by Council in July 2009, and approved by the Province in January 2010. This Official Plan replaced the former City of Kingston, Township of Kingston, and Township of Pittsburgh Official Plans. The Official Plan for the City of Kingston “…sets out its land use planning goals and policies that guide physical development and redevelopment, protection of natural and cultural heritage, resource management, and necessary supporting infrastructure” (page 1).

The policies of the Official Plan generally encourage infill and redevelopment provided that it is compatible and complementary, and is adequately serviced (e.g. Section 2.3.2, and 3.3.7).

Section 3.3.10 outlines policies related to affordable housing, and notes that “…the use of surplus lands owned by the municipality and other governmental agencies be considered for ‘Housing First’ as promoted in Section 9.9.4 of this Plan…”. Section 9.9.4 indicates that land deemed surplus will be considered first for affordable housing if the location, size and site characteristics are appropriate for residential development, and the site is in a residential area where supporting facilities and amenities are available.

The subject lands (Parcels 1, 2, and 3) are designated Residential in the current City of Kingston Official Plan (see Figure 3). As a note, the subject lands were designated Low Density Residential in the previous Township of Pittsburgh Official Plan. There were also specific policies related to Barriefield that directed development to be in accordance with the Heritage Conservation District Plan, and that provided population projections (total of 180 units, or 550 people within the village).

Section 3.3.D provides policies for special residential uses including senior citizen buildings:

“The City encourages medium and high density buildings design for senior citizens or other groups with special needs in locations that are close to supporting commercial, community facilities and transit facilities” (Section 3.3.D.1).

The surplus lands are located close to supporting commercial facilities including the CANEX retail plaza located approximately 500 metres southeast of the lands. Downtown Kingston which includes a wide range of commercial uses, community facilities and transit facilities, is approximately 2 km southwest of the lands. The Kingston Military Community Sports Centre, which would be available for use to the new residents on these lands, is approximately 850 metres southwest of the lands. An existing bus route (Route #12) is located along Highway 15 and provides a connection to Downtown Kingston. An existing bus stop is located near the intersection of Wellington Street and Highway 15.

The Official Plan recognizes that “designation under Part V of the Ontario Heritage Act enables the protection of a heritage district while at the same time allowing for compatible new development” (Section 7.3.C). The policies in Section 7.3.C also provide policy direction for new development in heritage conservation districts:
Figure 3
OFFICIAL PLAN
City of Kingston

Part of Lots 19, 20 and 21
Concession East of the Great
Cataraqui River
Parts 1, 2 & 3, Plan 13R-18296

City of Kingston

LEGEND

Source: City of Kingston
Official Plan Schedule 3-A Land Use
Consolidated - February 2010

DATE: August 2010

SCALE

metres

Barriefield Village
FEASIBILITY STUDY
“Any private or public work or development that is proposed within or adjacent to a designated heritage conservation district must demonstrate that it respects and complements the identified heritage character of the district or area” (Section 7.3.C.4).

Policies specific to Barriefield are included in Section 7.3.C.7 of the Official Plan. The preamble to Section 7.3.C.7 indicates that “new development or any alteration must follow the Barriefield Heritage Conservation District Plan and must maintain the heritage buildings, features, and landscapes, the topography, and archaeological sites and resources.” Section 5.0 of this study addresses the Heritage Conservation District Plan.

The specific policies of Section 7.3.C.7 are reviewed as follows in the context of the preferred development concept:

a. land uses must be limited to detached dwellings and limited numbers of semi-detached dwellings (being 10% or less of the total);

COMMENT: The preferred site development concept for Parcel 3 provides for a total of 18 dwellings, 16 of which are single-detached and 1 of which is semi-detached (2 units). The proposed development is a mix of 1-storey, 1½-storey, and 2-storey dwellings.

b. a church, publicly-funded school, or other community facility, and a senior citizens home may be permitted subject to a rezoning;

COMMENT: The preferred site development concept for Parcel 2 provides for a seniors apartment building with a total of 32 units in order to conform with the Official Plan and the Heritage Conservation District Plan guidelines. The term ‘senior citizens home’ is not defined in the Official Plan or the Township of Pittsburgh Zoning By-law. A ‘nursing home’ is defined in the Zoning By-law. The proposed use on Parcel 2 would not be considered a nursing home as the proposed use will not be an assisted-living care facility. The project team is of the opinion that the proposed use meets the intent of a ‘senior citizens home’ as permitted in the Official Plan.

c. permitted commercial uses must be small in scale, convenience oriented, supportive of the heritage setting, will not increase traffic volumes, and may have a maximum of three residential units as an accessory use above the main floor use;

COMMENT: No commercial uses are proposed as part of this development.

d. new lots must have full street frontage and be similar to the lot pattern and grid road structure of the heritage area;

COMMENT: As Parcel 2 is to remain as one lot, the only new lots created are located on Parcel 3. The new lots would have street frontage on a new street. The proposed street on Parcel 3 is aligned generally in a north-south parallel to George Street and linked to James Street.

e. new residential and institutional units must be low profile and compatible with adjacent properties;
COMMENT: The new residences proposed on Parcels 2 and 3 are low profile and are in keeping with the scale of the surrounding properties. The dwellings on Parcel 3 are a mix of 1-storey, 1 1/2-storey, and 2-storey buildings of a style that is compatible with houses located on adjacent properties and the immediate surrounding area. The properties adjacent to Parcel 2 and 3 each have a different character. Parcel 3 is bordered by residences 1 to 2 storeys in height while Parcel 2 is adjacent to the school site with a 2-storey building and 1-storey portables.

The proposed homes will have varied frontages and setbacks, and will feature outbuildings that are in keeping with the character of Barriefield. The seniors apartment building proposed for Parcel 2 is 2 storeys in height, and designed such that the massing is varied to reduce the building's overall scale.

The overall building heights proposed on Parcel 2 and 3 are compatible and are neither excessively higher nor lower than existing Barriefield structures.

f. a landscaped buffer along Highway 15 must be maintained and no new structure will be permitted to impede the view of St. Mark’s Church from either Main Street or Highway 15; and,

COMMENT: All of Parcel 1 and the north half of Parcel 2 are not proposed for development, in order to maintain views of St. Mark’s Church. A pre-development viewshed analysis was undertaken to assist in the placement of buildings (Section 5.3).

Further, the proposed buildings have been appropriately set back from Highway 15 to allow landscaping along Highway 15.

g. no new lots will be severed from the Barriefield House property except one with frontage on Regent Street with a depth of 30 metres.

COMMENT: This policy is not applicable to the preferred site development concept.

In our opinion, the preferred site development concept conforms with the existing City of Kingston Official Plan designation for the subject lands, and also with the specific policies related to Barriefield, should Council wish to proceed with a seniors apartment building on Parcel 2 and single-detached and semi-detached dwellings on Parcel 3. As such, an Official Plan Amendment would not be required.
4.3 Township of Pittsburgh Zoning By-law

The City of Kingston is currently in the process of preparing a new Zoning By-law for the entire City, but the process is not yet complete and as such the By-law for the former Township of Pittsburgh remains in effect for the Barriefield area.

The subject lands (Parcel 1, 2, and 3) are presently zoned Institutional (I) in the Township of Pittsburgh Zoning By-law (see Figure 4). This zone permits the following uses:

- an accessory dwelling house;
- an animal hospital;
- an auditorium;
- a cemetery;
- a church;
- a clinic;
- a hospital;
- a nursing home;
- a private club;
- a public house; and
- a school.

A maximum building height of 12 metres (39.4 feet) is permitted. The maximum building height in the zoning by-law would exceed the height of development on the proposed concept plan.

Section 5(18) of the Zoning By-law references setbacks from roads, and a setback of 18 metres is required from the centerline of a Provincial Highway (plus the minimum front yard depth required for such use in the zone where it is located). This setback regulation will apply to Parcels 2 and 3.

In summary, the existing zoning would permit a range of potentially large scale recreation and institutional type uses with a permitted height greater than contemplated by the Heritage Conservation District Plan or the preferred site development concept. The preferred site development would require an amendment to the Zoning By-law to permit residential uses.
Figure 4
ZONING BY-LAW
Township of Pittsburgh

Part of Lots 19, 20 and 21
Concession East of the Great
Cataraqui River
Parts 1, 2 & 3, Plan 13R-18296

Source: Township of Pittsburgh Zoning
By-Law No. 32-74

LEGEND
(ER) - Estate Residential Zone
(R6) - Rural Residential Zone
(R1) - Residential Type 1
(R2) - Residential Type 2
(R3) - Residential Type 3
(R4) - Residential Type 4
(R5) - Residential Type 5
(R6) - Residential Type 6
(R7) - Residential Type 7
(R8) - Residential Type 8
(R9) - Residential Type 9
(R10) - Residential Type 10
(R11) - Residential Type 11
(RSR) - Limited Service Residential Zone
(I) - Institutional Zone
(CL) - Local Commercial Zone
(C) - General Commercial Zone
(CH) - Highway Commercial Zone
(C1) - Tourist Commercial Zone
(MVC) - Mixed Village Centre Zone
(M1) - Restricted Industrial Zone
(M2) - General Industrial Zone
(MX) - Extractive Industrial Zone
(MD) - Disposal Industrial Zone
(BP) - Business Park Zone
(OS) - Open Space Zone
(FF) - Flood Plain Zone
(A1) - Restricted Rural Zone
(A2) - General Rural Zone

DATE: August 2010

SCALE

Source: Township of Pittsburgh Zoning
By-Law No. 32-74

DATE: August 2010

SCALE

Council Meeting 20 September 2010
5.0

BARRIEFIELD HERITAGE CONSERVATION DISTRICT PLAN ANALYSIS

5.1 Context

*Barriefield Heritage Conservation District Plan & Study, 1980*

Barriefield is one of the earliest Heritage Conservation Districts in Ontario. The Ministry of Culture and Recreation approved the Barriefield Village Heritage Conservation District Plan in January 1980. This document implemented the designation of the area under Part V of the *Ontario Heritage Act*, and contained policies and guidelines related to new development and alterations to existing heritage resources within Barriefield.

The aim of the Heritage Conservation District Study and Heritage Conservation District Plan was to preserve and enhance the 19th Century character of the village through the use of guidelines. The Plan recommended that new development generally continue the existing traditional building pattern of Barriefield regarding its type, density and location. Low density single family dwellings were preferred for new residential development, while medium density or semi-detached or row housing was contemplated in locations along Main Street. New construction was to reinforce the visual character of Barriefield, while ensuring compatibility with the Village. The maximum height for new development was identified as 2½ storeys.

Parcels 1, 2, and 3 are identified in the Study’s plan as “Future Low Density Residential – see Appendix” (see Figure 5). The appendix contains the following special motion of Council pertaining to the lands subject of this study:

“Moved by Hans Westenberg, seconded by V. Maloney that Council advises D.N.D and M.T.C. that it is its intention to zone the sections of severed National Defence property, which will be situated between the Village of Barriefield as it exists now and the new so called ‘Barriefield By-pass’, as part of Barriefield Village, suitable for residential development under the provisions of the Ontario Heritage Act for designated heritage conservation district” – March 9, 1978
Figure 5
HERITAGE DISTRICT PLAN
& Development Ideas for Barriefield Village

Source: Barriefield Heritage Conservation District Study, 1978

DATE: August 2010

Part of Lots 19, 20 and 21
Concession East of the Great Cataraqui River
Parts 1, 2 & 3, Plan 13R-18286

CITY OF KINGSTON

Barriefield Village
FEASIBILITY STUDY

Council Meeting 20 September 7, 2010
Barriefield Heritage Conservation District Plan & Study, 1992

The 1980 Heritage Conservation District Plan was updated and amended in 1992. It is stated that “the intention of the Barriefield Heritage Conservation District Plan is to ensure the wise management of physical change and development in order to conserve the unique character of the district and its component buildings and spaces” (Page 2-1). The rationale for the updated District Plan indicates that:

“…this plan recognizes that Barriefield and its residents are not static entities. The plan is founded upon the basis that change in Barriefield’s unique built heritage and natural environment is to be expected. Of critical importance is that the changes in Barriefield’s heritage environment must be managed in a manner that recognizes and respects that special character derived from its heritage building stock” (Section 1.2).

The objective of new development is “to encourage it only where it respects or otherwise complements the prevailing low profile and built character of existing buildings and structures within Barriefield” (Section 2.2.6). It is noted in the updated Plan that new buildings are to be of compatible design with respect to location, size, height, setback, orientation, materials, colour, roof and roofline, fenestration, scale and proportion. The key direction for this guideline is that new development is not to replicate existing built form but be compatible or complementary to it.

Parcels 1, 2 and 3 are identified in the amended Heritage Conservation District Plan as “Landscape Unit 4: Grassed Open Space” (see Figure 6). In the specific recommendations for improvement, it is noted that it may be possible to allow low profile development to the south of the church, adjacent to Highway 15 and still retain major views.

The three parcels of land subject to this study were not part of the village of Barriefield until the Highway 15 by-pass was completed in the late 1970’s and the lands were severed from the Department of National Defence base. The subject lands were not part of the original lotting pattern of the village.

The special character of Barriefield is a result of the variety in its buildings and the scale of its streetscape enriched with landscape features.

5.2 Built Heritage and Cultural Heritage Landscapes

Barriefield’s historic evolution is rooted in ship-building and shipping; military and commercial interests. The built heritage of Barriefield has a unique character created by its topography, lot patterns, lot sizes, and modest building collection, dating primarily from the nineteenth century, of simple forms and materials. These include wood siding and limestone, wood and asphalt shingles, with smaller amounts of brick and metal roofing. Most buildings have simple vertically-proportioned punched windows.
Figure 6
HERITAGE CONSERVATION DISTRICT PLAN
Landscape Units

Source: Barriefield Heritage Conservation District Plan, 1992

DATE: August 2010

CITY OF KINGSTON
Barriefield Village
FEASIBILITY STUDY

Council Meeting 20 September 7, 2010

Part of Lots 19, 20 and 21
Concession East of the Great Cataraqui River
Parts 1, 2 & 3, Plan 13R-18298

SCALE

metres

K29102A-BARRFIELDREPORT FIGURE 1922-102.DWG
The predominant building height in Barriefield is 1½ to 2-storeys and the roofs are configured as medium-pitch, simple slopes. Built forms are often incrementally added to by secondary forms, gables, dormers and porches. They are often located so as to create small assemblages and “pocket” spaces. The small-scale buildings have much-varied configurations, compositions and setbacks. Some of the streets are characterized by zero-setback residences. The topography, street and lane alignments and landscape spaces are all varied throughout the village, giving it a pleasant informal feel. There are numerous outbuildings, usually for utilitarian purposes, and decorative wood fencing and low stone walls. Streetscapes are characterized by narrow asphalt streets, with or without adjacent narrow concrete sidewalks, wooden hydro and street lighting poles, and a variety of trees, hedgerows and other vegetation, open views into side and back yards, and narrow driveway accesses.

Further, there is a combination of natural and cultural landscape features which contribute to an intimate scale to the streetscape of the village. There is variety in the buildings, which are primarily residences with a limited number of larger institutional buildings (the school, and church adjacent to Parcels 1 and 2).

Planning for the Barriefield Heritage Conservation District since its early beginning has anticipated that change is an inevitable part of the ongoing evolution of the Village. As the Village stands today it contains evidence of human activities dating back centuries. Since the 1992 Conservation District Plan update was completed there has continued to be further changes within the Village as anticipated.

The changes that have occurred include the construction of new residential buildings and the extension of the lower road along the edge of the waterfront to accommodate new lots. Additionally some of the lots along Main Street have been subdivided, creating opportunities for new infill development. There are currently several properties for sale or under construction.

The original District Plan and the updated Plan recognized that new development would occur within the Village:

“New construction within the district may be anticipated as occurring through the process of infilling in accord with Official Plan policies…” (Section 4.5, Construction of new buildings)

The updated Plan describes an approach for the design of new development suggesting that it is appropriate for it to be designed in a way that is sympathetic to and compatible with the existing built resources.

Within the heritage conservation field, the federal Standards and Guidelines for the Conservation of Historic Places in Canada contain best practices to be used for conservation work. The relevant sections that assist in planning of new development include three key words to describe the relationship between new development and existing heritage resources. The Standards state that the new development should be compatible with, subordinate to and distinguishable from the original heritage fabric. These three principles have been used by the design team as a foundation on which to design the plans for the currently vacant subject lands within the Heritage District.
The team has acknowledged that each of the three parcels has its own unique characteristics created in part by their own locations, size, shape, adjacencies and vegetation cover. In addition to their unique characteristics, the lands adjacent to each of the parcels vary significantly. As a result, the planning for each of the parcels moved forward on the understanding that each of the parcels would have its own solution in terms of layout, built form, density and landscaping to specifically address the site context of the parcel.

The end result of the planning for the housing development on Parcels 2 and 3 is based on the detailed understanding of the existing characteristics of the Heritage District in order to ensure that the proposed changes are an appropriate level of alteration to the vacant land.

**Streetscape**

Barriefield contains a variety of building types in various configurations and arrangements. The Heritage Conservation District Plan recognizes this characteristic:

“There is no one predominant building line or setback – except for the zero setback of buildings on Wellington, George, Drummond and Regent Streets – that distinguishes the whole district. The varied topography, road alignments and landscape units argue for the consideration of each individual development proposal on its own merits.” (Section 4.5.2, Building location)

The streets in Barriefield are narrower than current suburban cross sections and generally do not have sidewalks, curbs and gutters. The edges of many of the streets are lined with a variety of hedges, stone walls and decorative wood fencing. The scale of the pedestrian environment is comfortable and the majority of the properties contain colourful gardens which further enhances the streetscape.

**Landscape**

The landscape setting of Barriefield is founded in the topography of the area. The village has three distinct areas created by the slope from the river. The areas are the waterfront, the significant slope of almost 30 metres from the river to the school site and the upper plateau which extends to Highway 15. In each of these areas there is a mix of cultural and natural landscape features. The natural landscape consists of mixed deciduous trees, naturalized on the slope with dense under-story shrubs and herbaceous plant materials except where residential development and its accompanying domestic gardens have been developed.

The cultural landscape features include dense trees, fencelines and individual large specimen shade trees in lawn areas which add to the special character of the village. This landscape has been deliberately created over time since early photos of the village show little vegetation around the buildings.

Most of the open space is at the perimeter of the village – the open lawn on the Highway 2 frontage and the Community Rock Garden at the south end. The school grounds are located in the centre of the village.
**Building Height**

The Heritage Conservation District Plan provides guidelines for the construction of new buildings.

“The district is typified by low profile development with a predominance of one to one-and-a-half storey buildings. In this case a one-and-a-half storey building may include a kneewall. It is important that this low profile form of development is encouraged. In particular:

- **Building height of new structures must maintain the building height of adjacent properties and the immediate streetscape and should be neither excessively higher nor lower.** (Section 4.5.1, Building height and floor area)

A maximum building height of 1½ storeys is not a requirement in the Barriefield Heritage Conservation District Plan but rather a description of existing conditions.

An inventory of existing building heights was undertaken for Barriefield. Table 1 identifies the range of building heights (residences) in Barriefield:

<table>
<thead>
<tr>
<th>Table 1, Inventory of Building Heights in Barriefield</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Including Lilac Row</strong>*</td>
</tr>
<tr>
<td>Height</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>1-storey</td>
</tr>
<tr>
<td>1½-storey</td>
</tr>
<tr>
<td>2-storey</td>
</tr>
</tbody>
</table>

*Lilac row refers to a group of recently constructed single-detached dwellings on the east side of Main Street, north of Wellington Street.

Based on this analysis, the proposed development containing a mix of 1, 1½ and 2-storey buildings is compatible with the existing village pattern of building heights.

Parcel 2 is adjacent to J.E. Horton Public School on the southern end of the parcel and St. Mark’s Anglican Church on the northern end of the parcel. The public school is a 2-storey building with five 1-storey ancillary buildings (portables). On the south side of Wellington Street and diagonal to Parcel 2, there are two 1½-storey single detached dwellings and one 2-storey single detached dwelling.

The proposed concept for Parcel 2 contains a 2-storey seniors apartment building. Building heights of adjacent properties and the immediate streetscape are similar and compatible with the proposal on Parcel 2. In the context of the proposal and Barriefield, a difference of 1½-storeys to 2-storeys is
not considered excessively higher. The 2-storey seniors apartment is compatible with the low profile character of Barriefield.

Parcel 3 contains two 1-storey single detached dwellings, two 1½-storey single detached dwellings, one 2-storey semi detached dwelling, and 12 2-storey single detached dwellings. These proposed building heights are compatible with existing building heights along the west side of George Street which include six 1½-storey single-detached dwellings and one 1-storey semi-detached dwelling. It is our opinion that a difference of 1½-sto reys to 2-storeys is not considered excessively higher than the adjacent properties and immediate streetscape from Parcel 3.

The proposed development containing a mix of 1, 1½ and 2-storey buildings on Parcels 2 and 3 is compatible with existing buildings in Barriefield and conforms with the guidelines in the Barriefield Heritage Conservation District Plan.

5.3 Viewshed Analysis

A predevelopment viewshed analysis was undertaken to determine significant views into and from the sites. This work consisted of a review of City of Kingston planning documents (Official Plan and Barriefield Heritage Conservation District Plan / Study) in order to assess the significant views noted in these documents.

One of the aspects examined in the updated 1992 Heritage Conservation District Plan was the identification of “views to be retained”. Three significant views were identified in the vicinity of the subject lands (see Figure 9). One of the views is from the intersection of Main Street and James Street looking north towards the village. Development of Parcel 2 and 3 will not impact this view.

The second view is of St. Mark’s Church from Highway 15 looking south across Parcel 1. This view will not be impacted by development on Parcel 2 and 3. The third view is from the intersection of Wellington Street and Highway 15 looking towards St. Mark’s Church.

Over the last two decades, this view has become increasingly obstructed by vegetation and as a result, the available view of the church is further north along Highway 15. The proposed development on Parcel 2 has been located in the southern half of the site to retain the views of the church.

The 2010 City of Kingston Official Plan also includes information on significant views (identified as “protected views”) within the City. The view towards Barriefield along Highway 15 from the north is the only protected view in the area of the subject lands as identified in the recently approved Official Plan (see Figure 9). The Official Plan does not recognize all of the “views to be retained”
that were identified in the Heritage Conservation District Plan in 1992. Today, the most significant view continues to be the view of the church from the north.

As part of the Phase 1 work, a preliminary viewshed analysis was undertaken in order to determine locations where the steeple of St. Mark’s Church is visible. A Geographic Information Systems program was utilized in order to undertake the viewshed analysis. The software uses topographic information to identify portions of a structure that are visible from a specified location and elevation. The church’s steeple was chosen as the significant viewpoint given its identity as a prominent landmark.

Figure 7 illustrates where the top of the church’s steeple is visible in Barriefield and the surrounding area (areas shaded green). Areas that are not shaded green have an obstructed view of the top of the church’s steeple (these views may be blocked by existing vegetation, changes in topography, existing structures, etc.). Areas to the north, south and east of the church have unobstructed views of the top of the steeple including all three parcels. A large portion of Parcel 2 (southwestern area) does not have a clear view to the top of the steeple. The eastern half of Parcel 3 allows for views of the top of the steeple.

Figure 8 illustrates where the base of the church’s steeple is visible in Barriefield and the surrounding area (areas shaded green), and understandably this feature is visible from a smaller area. Areas that are not shaded green do not have a direct view of the entire steeple and roof-line of the church. The majority of Parcel 2 and about half of Parcel 3 have obstructed views of the base of the steeple, while nearly all of Parcel 1 and areas further north along Highway 15 have unobstructed views.

The Official Plan recognizes the view along Highway 15 looking south towards Barriefield as a “protected view”. The viewshed analysis demonstrates that areas to the north of St. Mark’s Church have unobstructed views of the entire steeple and roof-line. Views to the church’s steeple from Highway 15 adjacent to Parcels 2 and 3 are obstructed except for scattered sections adjacent to Parcel 3. The Official Plan does not recognize the “view to be retained” at the intersection of Wellington Street and Highway 15.

The site design for the proposed development was developed so that the proposed buildings would not negatively impact views to St. Mark’s Church. The site placement of the seniors apartment building on Parcel 2 is located close to Wellington Street and Highway 15 so that views from Highway 15 to the church are not significantly affected. A detailed analysis of the visual impacts from the proposed development will be required in Phase 2.

Photo 15: Looking south towards St. Mark’s Church across Parcel 1 from Main Street.
Figure 7
VIEWSHED ANALYSIS
Top of Steeple

Source: Manifold 8 GIS Surface Tools using topographic base information provided by City of Kingston

DATE: August 2010

Part of Lots 19, 20 and 21
Concession East of the Great Cataract River
Parts 1, 2 & 3, Plan 13R-18296

CITY OF KINGSTON

Barriefield Village
FEASIBILITY STUDY
**Figure 8**

**VIEWSHED ANALYSIS**

**Base of Steeple**

Part of Lots 19, 20 and 21
Concession East of the Great Cataract River
Parts 1, 2 & 3, Plan 13R-18296

Source: Manifold 8 GIS Surface Tools using topographic base information provided by City of Kingston

**DATE:** August 2010

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Exhibit "A" Report 10-281

Council Meeting 20   September 7, 2010
Figure 9
PRELIMINARY SITE CONSTRAINTS

Part of Lots 19, 20 and 21
Concession East of the Great Cataraca River
Parts 1, 2 & 3, Plan 13R-18296

LEGEND

Subject Lands

Potential Development Areas

Constrained Areas

Views to be Retained (1992) *

 Protected Views (Official Plan 2010)

Noise Constraints (Hwy. No. 15)

Existing Servicing (as labelled)

Source: City of Kingston, Geographic Information Systems (GIS) Department
DATE: August 2010
SCALE

20 0 20 40

metres

CITY OF KINGSTON

Barriefield Village FEASIBILITY STUDY

* Barriefield Heritage Conservation District Plan, 1992

Council Meeting 20 September 7, 2010
6.0 AFFORDABLE HOUSING ANALYSIS

6.1 Meeting Affordable Housing Needs

The City of Kingston faces a number of challenges as it seeks to ensure the availability of affordable housing required to meet the full range of needs of current and future residents. There is widespread evidence of the gaps that exist today and expected growth in a number of needs in future. Any affordable housing developed within Barriefield must play a role in meeting these needs. Evidence of the need for affordable housing includes:

- The centralized social housing waiting list currently contains more than 1,000 applicant households seeking affordable rental housing, most of whom are seeking rental housing geared to 30% of household income. Eligibility for rent-gearred-to-income forms of affordable housing requires household incomes at or below $21,000 for bachelor units, $26,500 for one bedroom units, $32,000 for two bedroom units, $35,000 for three bedroom units and $41,000 for four bedroom units. The waiting list is comprised of: single persons under the age of 65; senior citizens age 65 and over; families with children (many of whom contain single parents of low and moderate income and their children); childless couples; victims of domestic violence; and others in need. Low income singles comprise the largest category of need on the social housing waiting list, followed by families and seniors. Where possible, any affordable housing provided in Barriefield should help meet the needs of applicants on the social housing waiting list.

- Kingston currently has the lowest rental vacancy rate of any Ontario city, leaving low and moderate income households in need of rental housing with few choices in the housing market. Any rental housing that could be provided within Barriefield, especially, if it could be provided at a cost affordable by low and moderate income households, would help improve this situation.

- The population of Kingston is aging rapidly. Many elderly residents live on fixed incomes that leave them vulnerable to inflation in rents and utility costs and make it difficult to maintain existing dwellings. Senior citizens in Kingston currently represent approximately 16% of the population and are projected to double their portion of the population over the next 20 years, thereby significantly increasing the need for a range of housing options for the City’s aging population. Many of these seniors are unable to compete in the housing market with fixed incomes, and are in need of
affordable rental housing. Any affordable seniors housing that could be provided within Barriefield would make an important contribution to meeting the needs of this vulnerable and growing segment of the population.

- Rapid escalations in the cost of home ownership units in recent years have made it increasingly difficult for first time home buyers to enter the ownership market. While interest rates are currently low, it is projected that these will increase significantly over the next two years. When coupled with sharp increases occurring in utility costs, these factors will place home ownership farther out of reach for many households. Recent changes to mortgage eligibility regulations have also reduced access to home ownership for many. Given the benefits of home ownership to individual households and to the city as a whole, any efforts to increase the supply of affordable home ownership units would make a key contribution to meeting the City’s affordable housing needs. Enabling households of modest income to become first time homebuyers would also free up rental housing units, thereby helping improve the availability of rental housing as well.

- There is a lack of affordable housing supply east of the Cataraqui River. Few units of affordable housing have been developed in this area, notwithstanding the rapid residential growth in this part of the City. The “Kingston Model”, as well as many of the comments received during the consultation sessions, note the importance of ensuring the supply of affordable housing is spread across the City, rather than concentrated within a relatively narrow area. Developing affordable housing units within Barriefield would help address this gap and ensure the supply of affordable accommodation through the City.

What is ‘Affordable’ Housing?

In order to comply with the requirements of the SRPFHI, the proposed housing must not only provide opportunities to meet the affordable housing needs of the City of Kingston; it must also meet the City’s definition of affordable housing. As noted earlier, affordability is defined in Section 1.4 of the City of Kingston’s Official Plan. Below we summarize the Official Plan definition and translate this into current affordability levels for rental and ownership housing.

The basic definition is as follows: “where a household’s accommodation costs are not more than 30% of their gross income, having regard for the household income profile of the regional market area”.
**Affordable**

a. in the case of ownership housing*, the least expensive of:
- housing for which the purchase price results in annual accommodation costs which do not exceed 30 percent of gross annual household income for low and moderate income households; or,
- housing for which the purchase price is at least 10 percent below the average purchase price of a resale unit in the regional market area.

b. in the case of rental housing, for which the total monthly shelter cost is the gross monthly rent that includes utilities, heat, hydro and hot water, but excludes parking and cable television, the least expensive of:
- a unit for which the rent does not exceed 30 percent of gross annual household income for low and moderate income households; or,
- a unit for which the rent is at or below the average market rent of a unit in the regional market area.

**Low and Moderate Income Households**

a. In the case of ownership housing, households with incomes in the lowest 60 percent of the income distribution for the regional market area; or,

b. In the case of rental housing, households with incomes in the lowest 60 percent of the income distribution for renter households for the regional market area.

*Note: Unless otherwise stipulated in an upper tier government program which may define accommodation costs differently, affordable ownership housing is priced at or below an amount where the total monthly shelter cost includes the mortgage, principal, and interest (based on a 25-year amortization, 10 per cent down payment and the chartered bank administered mortgage rate for a conventional 5 year mortgage as reported by the Bank of Canada at the time of application) plus property taxes, calculated on a monthly basis, equals the average City of Kingston rent by unit type, as reported annually by the Canada Mortgage and Housing Corporation. Affordable ownership prices also include GST and any other mandatory costs associated with purchasing the units.

As noted earlier, the proposed development concept recommends 32 units of affordable rental housing for low and moderate income seniors on Parcel 2 and 18 affordable home ownership units on Parcel 3. Section 6.2 below discusses the mechanisms available to ensure affordability of these units, including:

- Rent supplement subsidies available from the City of Kingston can ensure long term rent-geared-to-income rent levels to enable some of the units to be occupied by low income households eligible for the social housing waiting list.
- Capital grants, through the former Delivering Opportunities for Ontario Renters (DOOR) Program that mirror the recent Canada-Ontario Affordable Housing Program.
(AHP) and can ensure the provision of permanent rental housing at 80% of average market rent.

- As per the “Kingston Model”, down payment assistance mirrored after the recent AHP can assist purchasers of affordable homeownership units.
- As per the “Kingston Model”, grants in lieu to help cover the cost of municipal Development Charges and other permit fees can improve affordability of all proposed units.
- The use of Parcel 2 for seniors-only housing can ensure compliance with the Official Plan and help to meet the growing need for housing for seniors of low and moderate income.
- Site specific zoning can ensure the development of modest single and semi-detached units on Parcel 3, that would be consistent and compatible with the character of existing units within Barriefield Village, and that would be built within the affordable home ownership definition and that would have controls designed to ensure these units remain affordable.

These forms of housing would clearly meet important affordable housing needs in the City of Kingston. The proposed housing would provide rent-geared-to-income units for applicants currently on the social housing waiting list; would add to the supply of permanent affordable rental housing; would expand the supply of affordable seniors housing; would increase the supply of affordable home ownership units; and would expand the supply of affordable housing east of the Cataraqui River, while also ensuring compliance with the heritage guidelines of the Barriefield Heritage Conservation District Plan and with the provisions and policies of the recently approved City of Kingston Official Plan.

The analysis of the financial feasibility of the proposed development concept (see Section 6.2 below) finds that these units can be developed within the Official Plan affordability definition. Accordingly, it was determined that this development concept would fully satisfy criteria three, specifically, that it meets affordable housing needs and complies with affordable housing definition.

6.2 Financial Feasibility and Sustainability

Based on the development concepts adopted for Parcels 2 and 3, financial testing was conducted to understand the financial feasibility of the potential concepts. This feasibility was tested using a detailed financial pro forma modeling tool, both from a capital perspective and from an operating perspective (as applicable), in order to assess the long term sustainability of the proposed concept. This same pro forma tool has been used extensively throughout the province to test the viability of many other affordable housing projects.

It should be noted that, as with any financial analysis, results are subject to inputs used and assumptions made. Estimated costs have been developed using comparable rates and typical development information to test affordability with a high degree of rigour. Where possible, Kingston specific development data was procured and incorporated into the model. However, given the preliminary nature of the design work and its sole purpose to determine feasibility, estimated costs should be considered preliminary and subject to refinement based on further
technical investigation. In particular, where information arises out of future technical work that influences current cost estimates (i.e. Phase 2 study work), there would need to be further financial testing to validate viability.

Key assumptions used in this financial analysis include:

- Unit affordability, as defined in the City’s Official Plan, meets the basic obligations of the SRPFHI;
- Where SRPFHI approvals are secured, land could be transferred to the City under the program for $1 (having a market value of about $1.037 M);
- Assistance of $120,000 per unit capital grants and $10,000 per unit development fee offsets were used in the Parcel 2 financial analysis;
- Assistance of $10,000 per unit development fee offset was used in the Parcel 3 financial analysis;
- The affordability that can be achieved is directly linked to the investment of required funding by the City of Kingston, as there are currently no funding programs available from senior levels of government to help meet required costs;
- The form and character of the development should be designed to be consistent with, compatible to and complementary to the heritage elements of Barriefield Village;
- To ensure housing affordability, units should be of a modest nature, both in terms of size and finish; and
- Full costing for project development – from concept through construction – is built into the pro forma models.

Parcel 2

Based on the development analysis, the form and tenure of this parcel was established as a low rise seniors rental apartment building. The concept developed for testing envisioned 32 units of which 26 are one bedroom and six are two bedroom. This unit mix is consistent with typical affordable seniors rental projects. From the developed concept, statistics were inserted into the pro forma model including development and financial metrics. On the basis of the model, total project costs (land, hard costs, soft cost and taxes) would be in the order of approximately $7.2M. The variables and the results of the analysis are summarized in Appendix E.

Recognizing the proportional value of the land donation (approximately $660,000, representing 32 of the proposed total of 50 units), preliminary testing showed that the basic Official Plan affordability (i.e. project rents equivalent to average market rents or below) can be achieved for the concept. An analysis was undertaken to test affordability that could be achieved using typical affordable housing program infusions. Under local delivery of the Canada-Ontario Affordable Housing Program and the DOOR Program in Kingston, assistance of up to $120,000 per unit capital grants and $10,000 per unit development fee offsets has been identified. These same assumptions were applied to the testing model for Parcel 2, resulting in a total injection of $4.16M in capital funding, including the $10,000 per unit development fee offsets. Like other affordable housing projects, the balance of capital costs would traditionally be covered under conventional mortgage financing.
Discussions with officials at the Ministry of Municipal Affairs and Housing indicate that the funding previously available under the Canada-Ontario Affordable Housing Program has been fully expended and there has been no firm commitment to renew the Program in the foreseeable future, likely for at least 1-2 years. Accordingly, in order for affordable housing of this nature to proceed on Parcel 2, the required funding would have to come from local municipal funding sources. It is our understanding that the City previously set aside $2.46 million from its available $3.2 million in DOOR funds for a potential affordable housing project in Barriefield. Applying this $2.46 million to the identified funding requirement would leave a gap of approximately $1.7 million that would have to be met by local funds, should Council wish to proceed with this form of affordable housing development. It is likely that these funds would be required from the City, although discussions with local housing providers found that there may be modest amounts of equity that they could also contribute towards meeting these requirements.

This equity injection would enable the reduction of all unit rents to a level that is 80% of the average market rent on an on-going basis. To achieve even greater affordability, the model also assumed rent supplement funding could be added for 12 units, thereby enabling access to the project for low income rent-g geared-to-income (RGI) households. Funding for these supplements is finite and falls within current program envelopes available from the City of Kingston. By using this tiered approach to affordability, injected equity could provide new rental housing that is affordable to both low and moderate income households. In exchange for accepting this municipal funding contribution, the housing provider (it could be either a non-profit, co-operative or private sector housing provider) would be expected to provide long term affordability for the project, ensuring rents remain affordable for 20-35 years.

It should be noted that deeper levels of affordability could be achieved for the project, although these would require a commensurate increase in infused equity from the City of Kingston or other community partners involved. Deeper affordability would also shift the mix of household incomes for the project and alter the tiered approach that has been established in the concept plan.

For a project of this type, procurement would typically be through a public Request for Proposals (RFP). This process would help garner maximum public benefit for any resources or inducements that were being offered through a competitive process. It would also enable the City to set out obligations under the RFP to address items such as housing design, heritage compatibility and long term affordability. This approach has been used to develop other projects in the City and, as such, is consistent with how project development could proceed if the federal lands were acquired.

**Parcel 3**

Based on the development analysis, the form and tenure of this parcel was established as affordable freehold ownership single and semi-detached homes. While testing was developed in this format, it does not preclude the ability to develop similar housing forms in a condominium or other ownership structure. However, capital cost impacts are not anticipated to be markedly different under these ownership scenarios. The concept developed for testing envisioned 18 units of which 16 are single detached and 2 are semi-detached. In terms of concept mix, 9 units are two bedroom and 9 units are 3 bedroom with all units falling in the 1,000-1,200 square foot range. Servicing costs were assumed using subdivision development parameters and based on the design concept, statistics were inserted into the pro forma
model including development and financial metrics. On the basis of the model, total project costs (land, hard costs, soft cost and taxes) would be in the order of approximately $5.3M. The variables and the results of the analysis are summarized in Appendix E.

The proportional value of the land donation for this parcel would equate to approximately $373,000. When blended with a $10,000 per unit contribution to offset development fees (similar to the project concept on Parcel 2), financial testing shows that basic Official Plan affordability for ownership housing can be achieved with a total investment of $180,000 by the City of Kingston. In today’s market, that means that house costs would be equal to or less than $236,000 (i.e. 10% below average resale price for the area). By way of example, under freehold tenure this means that a household with an income of approximately $54,000 could carry this home affordably for approximately $1,350 per month in principal, interest and taxes under this concept. As such, units would be affordable to households with moderate incomes and well below the City’s affordable home ownership definition.

On this basis, the project could be financially feasible and provide new affordable ownership units for the community at below market prices while meeting SRPFHI affordability obligations. While this would assist in expanding the local affordable housing stock and balancing the housing mix for the tested concept, there may be opportunities to further enhance affordability to reach a greater number of households.

There are a number of avenues for deepening affordability of ownership units. The most straight-forward of these would be to engage community partners to leverage equity. Engaging local organizations like Habitat for Humanity or not-for-profit housing developers to take on some of the units could reduce construction costs or lower carrying costs, thereby making certain units in the development more affordable to lower income households. The City could also make available down payment assistance to eligible first time homebuyers in accordance with the terms of the recent AHP (the City program sets these at 5% of the purchase price to a maximum of $7,500).

Alternatively, it may be possible to enable some of the units to be developed by a non-profit organization that would rent them out on an RGI basis to low income families currently on the social housing waiting list whose rents could be subsidized through the rent supplement program of the City of Kingston. A further plausible option would be to consider condominium-style or co-operative development for the whole parcel, which could provide modest cost savings or support deeper household affordability. Given the single and semi detached form of development recommended for Parcel 3, it could also be possible to develop one or more of these units as rental group homes for persons with special needs, providing the required capital and operating funding were available from the City of Kingston and any community partners involved.

In any of these scenarios, the deepening of affordability would be largely reliant on additional equity injections from the City of Kingston beyond the base amount of $180,000 noted above. Where these injections are public in nature, the primary consideration would be the security of public investment and ensuring long term affordability for households on site. There are numerous precedents across Ontario, including the Habitat for Humanity program that set in place long term control mechanisms on such ownership units to ensure there is no speculative capital gain by the purchaser by “flipping” their homes and to ensure that the units remain permanently affordable.
Procurement for a project like this could be handled through a public RFP process. This process would enable the City to set out obligations under the RFP to address elements such as housing design, heritage compatibility and long term affordability. To ensure public benefit for any resources or inducements are maximized, the RFP could also establish core principles that provide flexibility for proponents. In this way, the RFP would allow for a range of possible affordability solutions while still obliging housing forms that are consistent with the concept design.

**Overall Site Development**

In light of the above analysis, we have found that the proposed development concept can be developed in a manner that is financially feasible from the outset and sustainable over the long run, provided the City of Kingston invests the required funding from local municipal resources. The cost to the City of Kingston of moving forward with the base case presented above would be:

- $3,840,000 in capital grants ($120,000 per unit) towards the 32 affordable rental seniors apartments on Parcel 2. This grant structure mirrors the most recent affordable rental housing developments carried out in the City under the AHP. Most of this capital funding can be accessed through the remaining DOOR funds, previously provided to the City by the Ministry of Municipal Affairs and Housing.

- $500,000 in capital grants ($10,000 per unit) to offset municipal development fees and charges for Parcels 2 and 3 (as per the “Kingston Model”). This offset has been utilized for all recent affordable housing developments in the City.

- Rent supplement assistance for a minimum of 12 seniors rental units on Parcel 2 (this funding is already in place through the City’s existing rent supplement program). This would not only assist low income seniors, but would also help the City ensure compliance with the RGI performance standards required under the *Social Housing Reform Act*.

Other potential investments could include:

- Increasing the number of rent supplement units through additional annual contributions from the City, including potentially providing rent supplements to enable some of the singles and/or semis in Parcel 3 to be occupied on a rent-geared-to-income basis.

- Providing down payment grants to first time home buyers as per the City’s existing policy to assist in purchasing affordable home ownership units on Parcel 3.

- Providing additional levels of capital grants to deepen the affordability of units being developed on Parcel 2 and/or Parcel 3.

Accordingly, it was determined that this development concept would fully meet criteria four, namely: be financially feasible from the outset and sustainable over the long run, provided City Council is prepared to invest the required funding as outlined above. Should the project proceed to the next phase, further analysis can be conducted to identify levels of public investment required to achieve various levels of affordability and determine the most suitable options.
6.3 **Timeframe**

As noted earlier, the SRPFHI requires that zoning for the proposed development be approved by March 31, 2011 and that the units be largely constructed within two years after that date.

The planning analysis conducted in this report notes that the proposed development concept conforms with the Official Plan. This would greatly assist the City in meeting the Program timeframe requirements.

The planning analysis also indicates that the existing Zoning By-law designates these parcels for Institutional use, meaning that any residential development on the parcels would require an Amendment.

Should Council proceed with an application to the Federal government to acquire the lands under the SRPFHI, the application would have to be filed in early October and the response would be received from the Federal government shortly thereafter (likely by late October). Much of the work that is required to apply for an Amendment to the Zoning By-law has been carried out during the course of this Phase 1 feasibility study; therefore, the remaining work could be completed and the application filed shortly thereafter. By giving municipal priority to the application, circulation and review of the application could be completed by December of 2010, the required public meeting held and the matter brought before Committee and Council as early as January, 2011. Following the decision of Council on the amendment, there would be a 20 day appeal period, bringing the matter to early February.

Should approval be secured, the project could move into the development stage. Given that the funding would be locally based and not rely on senior government programs, the RFP development process could commence without any further delay. This would enable the developments to meet the construction timeframes of the Federal Program.

In light of the above analysis, we believe the proposed development concept can be developed within the timeframes required to qualify for the SRPFHI. Accordingly, it was determined that this development concept would fully meet criteria five, specifically meet the timeframes required under the SRPFHI.

6.4 **Potential Development Partners**

The City of Kingston is not in the business of residential development. In order to bring the proposed development to fruition, it will be important to work with potential development partners.

During the course of the feasibility study, the study team consulted with a wide range of potential development partners, including such non-profit housing providers as Town Homes Kingston, Kingston Frontenac Housing Corporation, Habitat for Humanity and Options for Homes, as well as a number of active local private development firms. In all cases, an interest was expressed in participating in the development in some fashion. These potential development partners were confident that they could play a role in bringing the proposed development concept to reality. Many suggested innovative approaches to bringing the
proposed housing onto the market. Each possesses varying levels of financial and human resources to add to the funding potentially available from the City of Kingston to meet the affordability requirements of the proposed development. Each brings considerable experience in developing and operating the proposed forms of residential development.

Earlier sections of this report suggest that an appropriate approach to selecting development partners would be to launch RFPs inviting submissions from interested parties either in the private or non-profit sectors in undertaking the proposed development projects outlined in this report. This approach follows closely the process already in place for the development of affordable housing under the Kingston Model as recently carried out for funding allocations available under the Canada-Ontario Affordable Housing Program.

In moving forward, the City would want to ensure that any proposed development on the subject lands will meet or exceed design expectations while maximizing public benefit. Given the range of potential partners in the community, using an RFP process for both parcels would be an ideal way to determine best fit. In this regard, selection of a development partner (or partners) should consider the following criteria for evaluation purposes:

- does the proponent have experience in housing development, a demonstrated capacity to undertake a project of this scale and are they financially stable;
- will the development partner’s actions be consistent with the approved detailed development concept (as established by Council for each parcel);
- does the proposal demonstrate how the City’s minimum affordability expectations will be met or exceeded, recognizing that more affordability is highly desirable;
- does the proponent accommodate identified household types, including those requiring rent-geared-to-income assistance;
- will the proponent guarantee affordability for 20 years or more, recognizing that long term affordability is highly desirable;
- does the proposed concept demonstrate long term financial sustainability;
- to meet development obligations, will the proponent require the full incentive package being offered by the City or some lesser amount; and
- is the proponent contributing equity to the project to help deepen affordability (preferred but not mandatory).

Using these criteria would assist the City in determining the comparative value of benefits to be received (i.e. sustained affordability) versus the incentives that are being offered (i.e. land, grants, etc.). To promote high quality submissions from experienced proponents, the City would want to clearly communicate these expectations within RFP documentation. As noted earlier, proposal calls should be open to housing partners whether public, not-for-profit or private in order to encourage the submission of a broad range of innovative proposals that met City criteria.
6.5 **Affordable Housing Conclusions**

One of the most critical success factors in the provision of affordable housing is the availability of suitable residential lands at a cost that enhances affordability. The City of Kingston has a unique opportunity to acquire surplus Federal property at a nominal cost within the Barriefield area, which would enable it to make an important addition to the local supply of such lands.

Our analysis finds that the project satisfies the criteria required to respond positively to the question of whether it is feasible to develop affordable housing on these lands. The heritage analysis demonstrates that housing can be built on these lands in a manner that is consistent with the character and scale of the existing Barriefield Village and which complies with the guidelines of the Barriefield Heritage Conservation District Plan and with the Official Plan designation. The proposed development concept would contribute to meeting a range of local affordable housing needs and can be developed within the definition of affordable housing contained in the City’s Official Plan.

The preferred development concept provides for a mixed form of housing in terms of income, age, household type, unit type, rent level and tenure while conforming with the Official Plan and meeting the guidelines of the Barriefield Heritage Conservation District Plan.

On the basis of the financial analysis undertaken, it has been demonstrated that affordable housing on the Barriefield lands - if developed per the tested concepts - is financially feasible where the surplus lands are acquired under the SRPFHI and the City of Kingston invests the required amount of funding from local municipal resources. As noted previously, a minimum of approximately $1.7 million in local funding would be required and would have to come primarily from the City of Kingston with the possibility of modest contributions from other housing providers. A tiered affordability model has been presented, which balances income mix and supports the healthy community principles of the overall development concept. It has been shown that the timeframes required under the SRPFHI can be met. As such, the concept provides a sound basis for a funding application under SRPFHI in order to pursue acquisition of the surplus property. Given the timing and limitations associated with SRPFHI funding, there are clear benefits to advancing such an application promptly. While additional technical and preparatory work is still required for the property, these could be conducted concurrently during Phase 2 work.

In moving the development concept forward, there are opportunities to deepen affordability beyond the base concept as tested. However, these options require additional equity injections from local municipal financial resources which can be sizable, depending on the level of affordability targeted. This additional equity would need to be sourced through public, not-for-profit or private avenues.
7.0

KEY FINDINGS FROM PHASE 1 SITE INVESTIGATIONS

7.1 Servicing Brief

MTE Consultants Inc. undertook a preliminary servicing investigation to identify services available on the site, as well as to provide comments related to any constraints to development. MTE consulted with staff at the City of Kingston, Utilities Kingston, CFB Kingston (Department of National Defence), and Union Gas in order to understand available services and constraints. Their findings are as follows:

- **Site Topography**: Based on existing topographic (OBM) mapping, the existing land slopes to the northwest towards the Great Cataraqui River. All three parcels of land presently drain toward the surrounding municipal roadways with rural cross-sections including roadside drainage ditches. Part 1 has a rather steep topography with an elevation differential of +/-7 m along its longest length of approximately 130 m. This equates to a longitudinal slope of approximately 5.5%. Parts 2 and 3 are relatively flat with a typical slope of approximately 1.0% – 1.5%.

- **Geotechnical and Hydrogeologic Information**: There are field observations of rock outcroppings on site, and comments from City and DND Staff indicate the presence of shallow limestone conditions across the site. Shallow groundwater conditions are not expected given the +/-30 m differential in elevation between the site and the Cataraqui River.

- **Storm Sewers / Storm Water Management**: There is no indication of on-site storm water collection on any of the sites. It is anticipated that existing ditches along Highway 15 or Highway 2 would be used for a storm water outlet. Existing ditches in the village are not well-defined and unlikely to be able to handle additional load based on anecdotal information. Depending on the scale of development, storm sewers would have to be extended to the site from the existing location on Highway 2 to deal with increased flows.

- **Water Supply**: There is an existing watermain crossing north to south through Parcels 2 and 3 running parallel about 7.5 m (25 ft) east of the western site boundary. This main was constructed in 1956 and direct connection would not be permitted. There is another watermain on Parcel 3 that connects to the DND site and steam system, as well as another main that runs along Highway 2. If the watermains are to remain in their current location,
Utilities Kingston and/or the DND will require a private servicing easement providing 24-hour access to the infrastructure. A water demand analysis will be required at the time of detailed design to ensure adequate supply is available. Details of the water lines are found on Figure 9 and Appendix A.

- **Sanitary Sewers:** There are two existing sanitary forcemains running parallel to the western boundary of Parcel 2 (approximate 5 m and 15 m from the western boundary). These feed into a sewer along Wellington Street, which also crosses Parcel 3 and connects to a trunk sewer along Highway 2. Easements will be required across these sewer lines in favour of Utilities Kingston. There is also an existing sewer along George Street that services the existing Barriefield development. Connection to existing sewers will be possible, however further analysis at the time of detailed design will be required to ensure capacity. Details of these lines are found on Figure 9 and Appendix A.

- **DND Steam System:** Beneath a small berm crossing Parcel 3 from east to west, there is a steam system line that is part of the heating system for the DND lands. The lines are buried in a shallow trench with a protective concrete cover. The DND is currently in the process of evaluating the steam system and are not opposed to relocating the lines, however given the site conditions and approval process this would likely be prohibitive in the context of the proposed development. A detailed drawing of the steam line is found on page 5 of Appendix A, and the location is shown on Figure 9.

- **Hydro, Gas and Communication Utilities:** There are existing hydro and telecommunications services connecting to the school property that could be made available for Parcels 2 and 3. There is also an existing gas line running along the west and north boundaries of Parcel 3, which crosses Highway 15 and runs northerly parallel to Parcel 2. It is expected that this service could also be extended to service the subject lands.

- **Site Access, Roadways and Grading Requirements:** It is expected that new entrance roadways would be installed at the site on the north (Parcel 2) and south (Parcel 3) sides of Wellington Street, and an extension to James Street to connect to the south of Parcel 3. It is likely that fill would have to be imported into the site to raise the grade approximately 1.0 m across the site, as well as a potential crossing of the steam line.

MTE also completed a servicing overview to aid in the financial analysis of the preferred development concepts for Parcel 2 and Parcel 3. These costs are detailed further in Section 6 of this report.

Based on this servicing investigation, development is feasible if located appropriately to avoid underground utilities. Municipal services (sanitary, storm and water) of sufficient capacity are available to service the site.

### 7.2 Noise Analysis

Aercoustics Engineering Limited prepared a preliminary noise control feasibility study for the potential development of the subject lands. The acoustic impact of road traffic from Highway 15 and Highway 2 has been predicted, and a noise impact of 74 dBA at the worst case outdoor amenity area (15 metres from the centerline of the highway) was determined. The predicted
level exceeds the 55 dBA limit established by the Ministry of the Environment (MOE) by 19 dBA, however MOE allows a 5 dBA tolerance of this level.

Based on the predicted impact, it is recommended that proposed units be oriented such that amenity areas are shielded from Highway 15 or Highway 2 by the units themselves. Depending on the site layout, acoustic barriers (such as tongue and groove wood fence) may also be required in conjunction with unit orientation in order to satisfy the limit. In addition, windows with line of sight to either Highway 15 or Highway 2 will likely require special construction in order to satisfy indoor sound levels. Units adjacent to either Highway 15 or Highway 2 will also need to be fitted with air conditioning, and other units should have the appropriate warning clause for forced air provision. Based on Aercoustics preliminary analysis, it has been determined that the preferred concept is feasible.

Noise from stationary sources was not noted to be significant during work at the proposed site, but should be further assessed during Phase 2 of the study (should it proceed). Detailed recommendations for this assessment are included in Appendix B.

7.3 Traffic Report

Paradigm Transportation Solutions Limited conducted a review of existing conditions and potential constraints related to development on the subject lands. Their report concluded that the intersections of Highway 15 / Highway 2 and Highway 15 / Wellington Street are operating with satisfactory levels of service conditions, and that additional traffic can be accommodated on the existing road network including James Street. Traffic lights would not be required at the intersection of Highway 15 and Wellington Street.

Access to the developable lands should be provided via Wellington Street near the western limits of the parcels where existing entrances are located, rather than County Road 15 (although a right-in right-out access could be provided). Sight lines for the proposed driveway connection to Wellington Street are satisfactory for safe operation, as the minimum stopping sight distances are exceeded in both directions (based on a 50 km/h design speed).

When site-specific plans are developed, a detailed traffic impact study should be completed to identify capacity issues and mitigation measures necessary to accommodate the build-out of the site.

7.4 Urban Sustainability

Urban sustainability refers to a broad range of approaches with respect to neighbourhood development. Sustainability rating systems such as LEED ND are specifically designed to foster and accommodate not only ecologically sound building practices, but also social, economic and cultural sustainability. These goals are integral to the preferred site concept of this feasibility study. In the most recent version of LEED ND, historic preservation values are particularly addressed in three areas of the system and national standards for historic properties are directly referenced.
Building sustainability rating systems such as LEED NC show how a number of low-cost or no-cost provisions can help make for sustainable development. Architecture and urban design considerations in our preferred site concept that support sustainability include:

a. Walkable public spaces and direct access to public transit;

b. Use of existing infrastructure and amenities;

c. Harmonious Integration of historic buildings and new infill structures that give districts a unique sense of place and compatible evolution;

d. Good connections to nearby neighbourhoods and communities;

e. Providing adequate sustainable land densities;

f. The retention of large proportions of existing vegetation and open space supports natural environmental sustainability;

g. Provision in the architecture for facilities such as bicycle storage, recycling, car-sharing.

h. Architectural specifications of sustainable practices that do not have to carry any additional cost, such as:
   • Appropriate unit size
   • Well-detailed building envelope
   • Indigenous, low-maintenance, low-water plant materials
   • Efficiently-designed utility systems
   • Rainwater harvesting
   • Construction waste management
   • Use of permeable pavings
   • Building materials that are local, low-VOC, and/or high recycled content

i. Project planning considerations such as public education, use of LEED-accredited professionals and collaborative design team.

7.5 Environmental Site Assessment

Phase 1 Environmental Site Assessments (ESAs) for Parcels 1, 2 and 3 were conducted by Defence Construction Canada on behalf of the Department of National Defence in 2007. These studies also included a review of the Phase 1 Archaeological Assessment (2006) undertaken on the base lands.

The studies concluded that based on the site visit and historical background searches, there is no evidence to support that there is potential or actual contamination associated with all three of the parcels.
Related to archaeology, the following are the findings for each parcel of land:

- **Parcel 1**: The Stage 1 Archaeological Assessment found the property to lie in an area of high archaeological potential, and the parcel is within an area of documented historic period use but also a grave location.

- **Parcel 2**: The Stage 1 Archaeological Assessment did not identify this parcel as an area of specific archaeological interest. However, areas adjacent to the property have been identified as areas of high to moderate archaeological potential.

- **Parcel 3**: The Stage 1 Archaeological Assessment found the property to lie in a spot area of high archaeological potential. Spot areas of high archaeological potential relate to specific documented historic period land use, primarily civilian farmsteads but also a grave location.

The study team has been advised that the Phase 1 ESA is considered by the City to be stale-dated. As such, an updated Phase 1 ESA should be completed by the City of Kingston as part of their standard due diligence prior to acquiring the subject lands.

In order to further assess potential archaeological resources on the subject lands, it is recommended that a Stage 2 & 3 Archaeological Assessment be carried out as part of Phase 2 of this study, should it move forward.
8.0
PUBLIC / STAKEHOLDER CONSULTATION

8.1 Overview of Public Consultation

The public consultation process carried out for the Barriefield Feasibility Study has included various consultation activities designed to provide the public and other stakeholders with a variety of opportunities to comment on the study and provide feedback on the draft development concepts.

Environmental Scan

In order to ensure that the consulting team clearly understood the specific views, needs and expectations of the community, 24 interviews with key stakeholders including, but not limited to: local residents, businesses, community groups, elected officials, Kingston Poverty Roundtable, Barriefield Village Association, heritage advocates, and public housing supporters were undertaken between June 28 and July 14, 2010. The information gathered during these consultations was used to develop a list of key issues facing the community and key concerns raised by the community about the Feasibility Study. This information was shared with the consulting team to improve their understanding of community issues.

Public Information Centre #1

A Public Information Centre (PIC) for the Barriefield Feasibility Study was held on Tuesday, July 6, 2010 from 5:30 pm to 8:00 pm at J.E. Horton Public School. The purpose of the PIC was to introduce the consulting team to the community and to provide an overview of the schedule and planning process related to the study.

A brief walking tour of the village began shortly after 6:00 pm and was hosted by a member of the study team (Wendy Shearer). A number of tours took place over the evening. The purpose of the walking tour was to view the Department of National Defence surplus lands in the context of Barriefield Village.

Ninety-three people attended the PIC and a total of 104 comment sheets were received.
**Kitchen Table Meetings**

Following PIC #1, members of the consulting team met with representatives of the Kingston Poverty Roundtable and the Barriefield Village Association in Kingston on July 28, 2010. The purpose of these meetings was to provide additional opportunities for both groups to outline their views on the possibility of building affordable housing on the federal surplus land in Barriefield.

**Public Information Centre # 2**

The second Public Information Centre (PIC) was held on Monday, August 9, 2010 at Memorial Hall in City Hall. The purpose of this meeting was to provide a summary of the study’s findings to date; identify development constraints and opportunities; and to review the potential development concepts. A potential development concept was presented to the public for comment.

Eighty-six people attended the PIC and a total of 60 comment sheets were received.

**Online Survey**

In addition to the consultation activities carried out by the study team, residents were given the opportunity to post their comments and vote in an online survey on the City of Kingston’s website to provide their opinions on the feasibility study. At the closing on July 30, more than 300 respondents had provided their comments.

**Additional Consultation**

Prior to PIC #2 on August 9, 2010, members of the study team presented the site constraints plan and preliminary concept plan to the Kingston Municipal Heritage Committee. The purpose of the presentation was to provide an overview of the constraints found on the site and the general rationale for the preliminary concept plan.

Following PIC #2, the study team arranged further meetings with other stakeholder groups identified through the public consultation process.

On August 19, 2010, members of the study team appeared before the City’s Affordable Housing Development Committee. This afforded the opportunity for the Committee to ask questions and seek further clarification from PIC #2. The members also met with the 2009-2010 Homelessness Community Leadership Group and Town Homes Kingston. Details of the preferred development plan were provided to the various parties, and questions, comments, and feedback were received from these important groups.

An information report was provided to City Council as part of the agenda on August 24, 2010. The information report authored by City staff provided Council with an update on the progress of the Phase 1 work. Included as an appendix within the report were all public comments received on the project including surveys, comment sheets, emails and other correspondence.
8.2 **Identification of Community Issues**

The following is a summary of the main issues raised by the public during the consultation process related to this project:

**Homelessness**

Many residents indicated that the issue of homelessness in Kingston must be addressed but opinions varied on whether Barriefield was the right location. Some residents were very concerned that if this initiative does not go forward because of local opposition, it will be difficult to locate affordable housing elsewhere in Kingston.

**Scale of Development**

Some residents expressed concern over the scale of development in Barriefield. Those opposed to development frequently cited the heritage buildings, the quaintness of the village, its unique feel and isolation from the larger city and its historic nature. Opponents of the development felt that too large a development would detrimentally impact the village.

Following the final Public Information Centre, some residents felt that the development suggested was appropriate, while others felt it was too much. Supporters of affordable housing felt the suggested development favoured seniors instead of those needing affordable housing and offered too little affordable housing on the site.

**Integration**

In addition to the issue of scale, some residents expressed concern that any affordable housing would not be properly integrated into the existing community and would result in two distinct separate neighbourhoods in the village. Some hoped that any affordable housing built in the village would have similar pathways and road cross-sections so that the two areas (existing and new) would integrate seamlessly into one community.

Following the final Public Information Centre, some residents felt that the development integrated fairly well with the existing community, while others felt the development was still not appropriate.

**Financial Feasibility**

Supporters and opponents of affordable housing in Barriefield felt that the financial aspect of the debate needs to be carefully examined. Those opposed to the location feel that even with land costs of $1, the feasibility of the village for affordable housing will be compromised because of the additional costs required to make sure any affordable housing is of a similar scale and built structure as the existing village.

Supporters of affordable housing in Barriefield point out that the low cost for land will make the site attractive for some affordable housing.
Following the final Public Information Centre, some residents felt that the financial feasibility of the site needed more analysis.

**Location of Barriefield**

Some residents pointed to the lack of services in Barriefield and its distance from banking and grocery stores etc., as a reason not to locate affordable housing in the village. Some believe that families and individuals living in affordable housing will not have cars and will be very isolated in the Village. At the same time, others felt that the location offered good access to public transit and was close enough to downtown to make it a good location for affordable housing.
9.0 CONCLUSIONS

Based on the results of the technical studies in Phase 1, the input received from the public and stakeholders, and the examination of several development concepts, the project team has developed a preferred development concept. The preferred development concept includes a 2-storey 32-unit seniors apartment on Parcel 2 adjacent to the existing school, and 16 single-detached units and 2 semi-detached units on Parcel 3 east of George Street. Parcel 1, north of St. Mark’s Church, is proposed to be retained as public parkland/open space.

The preferred development concept meets the following criteria:

- It is compatible with adjacent lands and is subordinate to and distinguishable from the original heritage fabric of Barriefield.
- It is consistent with the Provincial Policy Statement and conforms with the existing designation of the subject lands in the City of Kingston Official Plan and also with the specific Official Plan policies related to Barriefield.
- It is financially feasible from the outset of the project and sustainable over the long term provided that City Council invests the specified required funding.
- It helps address affordable housing needs in the City of Kingston, and the units can be developed within the affordability definition in the Official Plan.
- It provides walkable public spaces with direct access to transit, connections to nearby neighbourhoods and communities, and architectural components that contribute to the urban sustainability of the project.

Accordingly, it is recommended that the City of Kingston carry out the following steps:

- Make application under the SRPFHI to acquire the subject lands before the October federal deadline;
- That City Council, at a minimum, consider committing the following funding in support of the proposed affordable housing development, and confirm the availability of this funding in the recommended SRPFHI application:
  - A capital grant of $3,840,000 ($120,000 per unit) towards the development of 32 affordable seniors rental housing units on Parcel 2;
  - A capital grant of $500,000 ($10,000 per unit) to help offset municipal fees and charges for the development of Parcels 2 and 3;
  - Rent supplement assistance for a minimum of 12 rent-geared-to-income units on Parcel 2.
• Complete additional technical analysis in Phase 2 as outlined in the City’s staff report;

• Complete a Stage 2 & 3 Archaeological Assessment to further assess the potential archaeological resources on the subject lands as part of Phase 2 of the study;

• Complete a Geotechnical Study to assess the bedrock conditions on the subject lands and an Environmental Impact Study to assess the woodlands on Parcels 2 and 3;

• Complete an update to the Phase 1 Environmental Site Assessment as part of their standard due diligence prior to acquiring the subject lands; and

• Consider options that may deepen affordability while still addressing a broad mix of income levels and household types within the development area.
APPENDIX A:

Site Servicing Feasibility Report (MTE)
CONSULTATION ON POTENTIAL ACQUISITION
OF FEDERAL SURPLUS LAND IN
BARRIEFIELD VILLAGE

Site Servicing Feasibility Report

Project Location:
Parcel 3, Parts 1, 2 and 3 - Plan 13R-18296
Kingston, ON

Prepared for:
MHBC Planning
540 Bingemans Centre Drive, Suite 200,
Kitchener, ON N2B 3X9

August 2010
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Figure 1 – Existing Conditions Map

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APPENDIX A – REFERENCES

APPENDIX B – RECORD DRAWINGS, REPORTS & BACKGROUND INFORMATION

APPENDIX C – CONSTRUCTION COST ESTIMATES
1.0 INTRODUCTION

MTE Consultants Inc. was contracted by MHBC PLANNING to complete a preliminary servicing investigation in support of the potential acquisition of surplus land in the Barriefield Heritage Conservation District for an affordable housing project.

The subject lands that are the basis for the analysis and technical studies are described as Parcel 3, Parts 1, 2 and 3 on Plan 13R-18296. These lands are located generally along the eastern perimeter of the existing built up area of Barriefield Village, and are currently owned by the federal government, forming part of Canadian Forces Base Kingston (CFB Kingston). They are physically separated from the rest of CFB Kingston to the east by Highway 15. To the south runs Highway 2.

This report is written as a pre-development analysis to identify opportunities and constraints in relation to servicing and infrastructure. To this end, it is anticipated that development could take place on Parts 2 and 3 only. Due to its topography and orientation, it is assumed that Part 1 is not viable for future development. For reference the parts are shown in the adjacent figure and summarized as:

- Part 1 - 0.61 ha
- Part 2 - 1.33 ha
- Part 3 - 1.55 ha

Staff at the City of Kingston, Utilities Kingston, CFB Kingston (Department of National Defence) and Union Gas were consulted, and the information gathered for this review can be found in Appendix A.
2.0 EXISTING CONDITIONS & DEVELOPMENT CONSTRAINTS

Figure 1 illustrates the general topography and existing features on the proposed development parcels. Apart from underground services and their associated access structures, the subject lands are essentially vacant, with a variety of grassed fields, thickets of dense brush, trees and open areas. A federal land title search indicated that the property was transferred to the Crown in March 1840 as part of the military reserve Barriefield firing range. St. Mark's Church and its related land, separates Parts 1 and 2.

A site visit was conducted by the project team in May of 2010 to review the current conditions. Photographs of each of the three parcels are provided below.

**Part 1 – Looking North**

**Part 2 – Looking North**

**Part 3 – Looking South**
2.1 Site Topography

Based on existing topographic (OBM) mapping, the existing land slopes to the northwest towards the Great Cataract River. All three parcels of land presently drain toward the surrounding municipal roadways with rural cross-sections including roadside drainage ditches. Part 1 has a rather steep topography with an elevation differential of +/-7m along its longest length of approximately 130m. This equates to a longitudinal slope of approximately 5.5%. Parts 2 and 3 are relatively flat with a typical slope of approximately 1.0% – 1.5%.

2.2 Geotechnical & Hydrogeologic Information

Geotechnical and/or hydrogeologic information are not readily available for the site and there is no indication of prior studies having been completed. However, field observations of rock outcroppings on site, notes on historic record drawings and comments from various City and DND staff indicate shallow limestone bedrock conditions across the site. Also, considering the proximity to the Cataract River, and the +/-30 m differential in elevation between the site and the river, it is not expected to encounter shallow groundwater conditions that would adversely affect the proposed development concept.

2.3 Storm Sewers / Storm Water Management

There is no indication of on-site storm water collection (sewers) or storm water management controls on any of the 3 parcels. Therefore it is anticipated that existing ditches along Highway 15 or Highway 2 would be used for storm water outlet. Ditches within the village itself are not well defined and anecdotal accounts of conditions in the village during storm events would indicate that village streets could not bear additional load. Depending upon the site design, the City may have to investigate the extension of storm sewers as part of the development. The nearest storm sewer appropriate for this use would be on Highway 2.

The City of Kingston was contacted to establish the storm water management criteria. With respect to water quantity, the municipality requires the total runoff flow from the proposed development be controlled from post to pre-development conditions.

2.4 Water Supply

There is an existing 400 mm (16 inch) diameter watermain crossing north to south through Parts 2 and 3 running parallel to and approximately 7.5m (+/-25 feet) east of the western site boundary. Based on record drawings, the watermain is considered a “water supply main” or as is commonly referred to as a transmission main. It was constructed in 1956. Per Utilities Kingston comments, direct connection to this watermain will not be permitted.

On Part 3 there also exists another 300mm (12 inch) diameter watermain running easterly, connecting to the aforementioned 400mm diameter transmission main and other watermain piping on the DND site. Also, a separate parallel 300mm (12 inch) watermain is connected to the 400mm diameter transmission main at approximately the middle of the parcel. This main then bends and runs easterly along Highway 2. It is understood that both of these sections of 300mm
diameter watermain are part of the DND's internal water distribution network.

Utilities Kingston has indicated that they will provide a minimum operating pressure of 40psi for the proposed site. Recent hydrant flow tests on James Street (2004) and Wellington Street (2007) have yielded static pressures of 58psi and 73psi, respectively. Assuming the watermains will remain in their current location, Utilities Kingston and/or the DND will require a private servicing easement allowing 24 hour access to the existing infrastructure.

A water demand analysis for the property will be required at the time of detailed design to ensure adequate supply for servicing the proposed residential development and providing adequate fire suppression capability.

2.5 Sanitary Sewers

There are two existing sanitary forcemains running parallel to the western boundary of Part 2. One is a 250mm (10 inch) diameter forcemain approximately 5m (+/- 15 feet) east of the western boundary. The second is a 400mm (16 inch) diameter forcemain approximately 15m (+/- 50 feet) east of the western boundary. The aforementioned 400mm diameter watermain on Part 2 runs between these two sanitary forcemains. These feed into a 450mm (18 inch) diameter trunk gravity sanitary sewer at a manhole on Wellington Street, from where it crosses the road southerly, through Part 3 and then connects to an existing 1050 mm (40 inch) diameter trunk sewer at Highway 2.

There is also an existing 200mm (8 inch) diameter sanitary sewer on the northerly half of George Street. It connects to the local sewers servicing the existing Barriefield development. Considering the shallow bedrock conditions on the site, it is anticipated that any future sanitary sewers would be constructed at a minimum depth (1.2m - 1.5m) for frost protection. Therefore, basements in any future buildings may be cost prohibitive.

The alignment of the gravity sewer through Part 3 has the intermediary manhole extending further into the site (+/- 27m east of the western boundary). It is surmised that the alignment is a function of the 'path of least resistance' through the shallow limestone bedrock. Utilities Kingston will require a private servicing easement allowing access to the infrastructure if the sewers remain in their current location. This structure and its associated easement present a significant impediment to the developable area on Part 3.

Connection to the existing sanitary sewers will be possible for the proposed development. Based on the invert elevations within the manholes, the 450mm diameter trunk sewer is at a slope of approximately 0.3%. Further analysis to confirm capacity of the receiving sewer in support of a future development application will be required.
2.6 DND Steam System

Beneath an embankment crossing Part 3 from east to west, there exists a "steam system line". The infrastructure consists of a 200 mm (8 inch) diameter insulated steam pipe and a 100mm (4 inch) diameter condensate pipe. This is part of the heating system for the DND buildings and connects from their main boiler building to the east to the Royal Military College and other federal buildings to the south and west of Barriefield. These lines are located in a relatively shallow trench (less than 1 m deep) with a protective concrete cover.

The DND is currently in the process of evaluating the effectiveness of the steam system through a "Steam Actualization Study" that is expected to be completed sometime in the next year. This study may result in the steam system being revised or abandoned for other technologies. The DND has indicated that they would be willing to entertain the idea of relocating the steam/condensate lines. However, costs and difficulties relating to the existing shallow bedrock conditions, along with a possibly onerous approval / coordination process with the DND would make the relocation option for the steam lines prohibitive for the context of this proposed development.

2.7 Hydro, Gas and Communication Utilities

There are existing hydro utilities available for both Parts 2 and 3. A 5kV circuit exists as an aerial line on George Street and crossing Wellington Street to service the existing school. It is expected that this circuit could be adequately extended to service both parcels.

Similarly there exists an overhead fibre-optic telecommunications line on the hydro pole on George Street and servicing the school. It is expected that these services could be adequately extended to service both parcels.

There is an existing 100 mm (4 inch) diameter gas main running along the west and north boundaries of Part 3. From there it crosses Highway 15 and runs northerly, parallel to Part 2. Providing 225 lbs of pressure, it is expected that this gas service could be adequately extended and/or connected to service both parcels.
2.8 Grading Requirements

Based on existing topography, the probable vertical profiles along potential new roads would likely be relatively flat with a longitudinal gradient of less than 2%. Due to the shallow bedrock conditions it is expected that the construction of any on-site roadways and/or the construction of any at grade buildings would require the importing of fill and raising of the grades on site. Based on an estimate of raising the grades by an average of 1.0m across the site, a total of approximately 12,000 m3 of imported fill is required on Part 2, and 15,000 m3 of imported fill is required on Part 3.

Of particular note on Part 3, a new road crossing over the existing steam system line may require structural reinforcement. Prior to construction, a detailed structural assessment of the steam system and its protective corrugated steel cover should be undertaken. Depending on the condition of the cover and its supporting structure, and the depth of covering soil at the road crossing, it may be necessary to 'bridge' over top of the steam line with a reinforced structure. This could include a concrete structure (precast or poured-in-place) such that it meets the requirements of the Ontario Bridge Code.

3.0 ESTIMATED CONSTRUCTION COSTS

Construction costs for area grading, underground servicing and surface works for a conceptual residential development on Parts 2 and 3, including internal roads, are provided in the tables below. Refer to Appendix C for additional detail.

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<th>SUMMARY OF ESTIMATED COSTS for Part 2</th>
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<tr>
<td>1.0 Site Preparation and Removals</td>
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<tr>
<td>2.0 Earth Works</td>
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<tr>
<td>3.0 Sanitary Sewers</td>
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<td>4.0 Watermains</td>
<td>$30,706.00</td>
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<td>5.0 Storm Sewers</td>
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<td>6.0 Utilities and Street Lighting</td>
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<td>7.0 Roadworks</td>
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<td>8.0 Miscellaneous/Provisional</td>
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**Total Estimated Cost** $539,128.50

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<td>5.0 Storm Sewers</td>
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<td>8.0 Miscellaneous/Provisional</td>
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**Total Estimated Cost** $891,428.00
NOTES:
1) This cost estimate is based on the existing municipal sanitary sewers and watermain have the required capacity.
2) The storm sewers are being outlet into the ditches along HWY 2 and HWY 15.
3) This cost estimate does not include any excavation or granulars for the buildings.
4) This cost estimate only includes topsoil and sodding. No plantings have been included.
5) The quantities on this cost estimate are only conceptual.

4.0 SUMMARY AND CONCLUSIONS

This report is intended to provide the reader with an engineering perspective on the site servicing constraints and opportunities. It is intended to be used as part of the decision making process for the acquisition of the surplus lands for an affordable housing development.

Site layout parameters chosen will affect the construction costs of the servicing infrastructure. This includes the building locations, size and number of buildings, parking layout, landscaped areas and building use (i.e. number of units). The elevations and flow of both traffic and pedestrians on the site impact grading and define grading requirements for the development. The number of properties or mortgages held also impacts the servicing requirements.

It is recommended that engineering input be consulted early in the site development process. The complexities of the site servicing and grading need to be understood by the entire design team. Thereby site design concepts can be explored to maximize the development potential while limiting servicing and grading costs.

Based on the foregoing, it is concluded that:

1. Municipal services (storm, sanitary and watermain) are available to service the site.
2. Capacity of the receiving sanitary sewer must be confirmed in relation to the expected flows from any future development proposal.
3. Stormwater runoff will need to be directed away from the village by usage of ditches along Highways 15 and 2 and/or the extension of storm sewers.
4. Existing bedrock conditions on site will require importing of fill to mitigate costs of service installation.
5. Easements will be required over existing infrastructure in favour of their owner, ensuring 24 hour access to the underground features. This will impact the future developable areas on the site.

All of which is respectfully submitted.

Yours truly,

MTE CONSULTANTS INC.

[Signatures]

Valentina Lazic, P.Eng.
Responsible Professional

Deborah Neary
Project Manager
APPENDIX A

REFERENCES
APPENDIX A

REFERENCES

(1) Kimberley J. Brown, P.Eng., Manager Infrastructure and Development, City of Kingston, verbal and email communications.

(2) City of Kingston Site Plan and Control Guidelines December 2009

(3) Curtis F. Munroe, P. Eng., Engineering Officer, Base Construction Engineering, CFB Kingston, verbal and email communications

(4) Chantal Chiddle, P. Eng., Utilities Engineer, Technical Services, Utilities Kingston, verbal and email communications

(5) Mike Teepell, Construction & Growth Rep, Union Gas, Eastern Area, verbal communications

(6) Hughes Downey Affordable Housing Development Concept Report 10-061
APPENDIX B

RECORD DRAWINGS, REPORTS & BACKGROUND INFORMATION
Note: A digital copy of Appendix B is available upon request.
APPENDIX C

CONSTRUCTION COST ESTIMATES
## Exhibit "A" Report 10-281

### Council Meeting 20 September 7, 2010

### Barriefield Development Conceptual Construction Cost Estimate

**Federal Surplus Land, Kingston, Ontario**

**August 13, 2010**

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<td>2.0 Earth Works</td>
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<td><strong>Total Earthworks</strong></td>
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<td><strong>Total Sanitary Sewers</strong></td>
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<td>8.0 Miscellaneous/Provisional</td>
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<td>8.1 Rock breaking</td>
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## Barriefield Development Conceptual Construction Cost Estimate

**Federal Surplus Land, Kingston, Ontario**

**August 13, 2010**

<table>
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<th>Item No.</th>
<th>Description</th>
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<th>Est. Qty</th>
<th>Total Cost</th>
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<td>6.0</td>
<td>Utilities and Street Lighting</td>
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</table>

**Total Estimated Cost for the Parcel 2**: $539,128.50

### NOTES:

1. This cost estimate is based on the existing municipal sanitary sewers and watermain have the required capacity.
2. The storm sewers are being outlet into the ditches along HWY 2 and HWY 15.
3. This cost estimate does not include any excavation or granulars for the buildings.
4. This cost estimate only includes topsoil and sodding. No plantings have been included.
5. The quantities on this cost estimate are only conceptual.
### Barriefield Development Conceptual Construction Cost Estimate

**Federal Surplus Land, Kingston, Ontario**

**August 13, 2010**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Units</th>
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<td>Import and fill to sub-grade</td>
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</table>
## Barriefield Development Conceptual Construction Cost Estimate

### Federal Surplus Land, Kingston, Ontario

**August 13, 2010**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
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<th>Est. Qty</th>
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<td><strong>$891,428.00</strong></td>
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</tbody>
</table>

**NOTES:**
1. This cost estimate is based on the existing municipal sanitary sewers and watermain have the required capacity.
2. The storm sewers are being outlet into the ditches along HWY 2 and HWY 15.
3. This cost estimate does not include any excavation or granulars for the buildings.
4. This cost estimate only includes topsoil and sodding. No plantings have been included.
5. The quantities on this cost estimate are only conceptual.
APPENDIX B:

Predevelopment Noise Feasibility Analysis (AEL)
19 August 2010

MHBC Planning  
540 Bingemans Centre Drive, Suite 200  
Kitcheer, ON  
N2B 3X9

Attn: Neal DeRuyter  
Re: Barriefield Phase 1. Pre-development Noise Feasibility Analysis

Aercoustics has been retained by MHBC Planning to prepare a Noise Control Feasibility Study for the proposed Barriefield housing development in Kingston, Ontario near the intersection of Highway 15 and Highway 2. In this letter, Aercoustics will advise on site specific design constraints and opportunities for the proposed development, based on the existing acoustic environment.

1 Road Traffic Impact

The acoustic impact of road traffic from Highway 15 and Highway 2 on the proposed development has been predicted. The calculations were performed in accordance with Guidelines of the Ontario Road Noise Analysis Method of Environment and Transportation (ORNAMENT) using STAMSON prediction software.

1.1 Modelling Parameters

The prediction calculations were based upon several parameters and assumptions including the following:

- An annual average daily traffic (AADT) of 24400 for Highway 2, provided by the City of Kingston.
- An annual average daily traffic (AADT) of 13530 for Highway 15, provided by the City of Kingston.
- A worst-case outdoor amenity area and building facade setback from road centrelines of 15m and 20m, respectively. The former represents the rear yard of a unit backing onto Highway 2 or 15.

1.2 Modelling Results

A daytime road traffic impact of 74dBA was predicted at the worst-case outdoor amenity area location. A 72dBA and 65dBA road traffic impact was predicted at the worst-case building facade location during the day and night, respectively. Sample STAMSON calculations are attached at the end of this letter.
1.3 Discussion and Recommendations

The predicted noise impact of 74dBA at the worst-case outdoor amenity area location exceeds the 55dBA limit established in the Ministry of the Environment (MOE) Noise Assessment Criteria in Land Use Planning Publication LU-131 by 19dB. The MOE allows a 5dB tolerance to this limit.

Based on the predicted impact, it is not anticipated that the outdoor amenity area limit can be achieved exclusively through the use of acoustic barriers. It is therefore recommended that proposed units be oriented such that amenity areas are shielded from Highway 15 or Highway 2 by the units themselves.

Acoustic barriers may need to be used in conjunction with unit orientation in order to satisfy the limit, depending on the site layout. An acoustic barrier may consist of a berm, acoustic fence, or combination of berm and acoustic fence. In order to be acoustically effective, an acoustic barrier should be free of gaps or penetrations and should have a minimum surface density of 20kg per square meter.

Windows with line of sight to either Highway 15 or Highway 2 will likely require special construction in order to satisfy the indoor sound level limits established in LU-131.

Units adjacent to either Highway 15 or Highway 2 will need to be fitted with central air conditioning. All other units should have the appropriate warning clause in their purchase agreement for forced air provisioning.

2 Stationary Noise Source Impact

Noise from stationary noise sources was not observed to be significant during site work at the proposed development site, likely due to low levels of activity (i.e. not commensurate with the assessment of the predictable worst case as required by review authorities) and also in part due to the elevated ambient background noise (daytime road traffic and atmospheric/wind induced noise).

Notwithstanding these observations, it is believed that there is a potential for significant noise impact. It is therefore recommended that as part of the phase 2 study the following be completed:

- Determine the existence of any plans or proposals to expand Canadian Forces Base (CFB) facilities or operations in the proposed development area.
- Obtain and review any previous noise studies performed at the CFB in the proposed development area.
- Conduct a noise monitoring survey to substantiate and confirm the selection of appropriate site specific sound level limits for stationary noise sources as required by MOE in publications LU-131 and NPC-205.
- Obtain and review a list of existing and proposed outdoor equipment at the nearby CFB buildings.
- Determine hours of CFB operations, and details of CFB operations in the proposed development area.
• Determine whether or not any regular military aircraft operations occur in the area (helicopters, jets, etc).

• Identify any regular indoor/outdoor firearm training operations.

• Determine whether there are any significant shipping operations near the proposed development area (ship maintenance, sounding of ship horns, related activities).

3 Conclusion

With consideration to the aforementioned site-specific noise control challenges, we believe that residential development on the proposed lands is feasible. We trust that this satisfies your requirements on this matter.

Per,

AERCoustics ENGINEERING LIMITED

David Grant, B.A.Sc

Vince Gambino, P.Eng
APPENDIX C:

Existing Traffic Conditions and Constraints (PTSL)
Memorandum

FILE: 100940
TO: NEAL DERUYTER, MHBC PLANNING
FROM: PHIL GRUBB, PARADIGM TRANSPORTATION SOLUTIONS LTD.
DATE: AUGUST 11, 2010
RE: BARRIEFIELD VILLAGE EXISTING CONDITIONS & CONSTRAINTS

This memo documents our review of the existing conditions and potential constraints related to the potential acquisition of federal surplus lands the Barriefield Village. The Barriefield Village is located in the City of Kingston, Ontario. Highway 15 to the East and residential and institutional developments to the west border the federal surplus lands. This review has been carried out to assess the existing transportation conditions and constraints.

Site Location

The Federal surplus lands (Subject Lands) are located on the eastern side of Barriefield Village adjacent to Highway 15. They are comprised of three parcels of land totalling 3.58 hectares (8.84 Acres) in area.

Road Network

The subject lands to are located immediately adjacent to Highway 2, Highway 15 and Wellington Street.

Highway 2 and Highway 15 are basic two-lane two-way arterial roadways and operate with a posted speed limit of 60 kilometres per hour. Direct access to these roadways appear to be restricted to roadway intersections and driveway connections are limited wherever possible.

Wellington Street is a local roadway with a pavement width of approximately 10 metres east of George Street (while to the west it is 7 metres) and operates with a posted speed limit of 40 kilometres per hour. The speed limit is reduced due to the J.E. Horton Public School site. At present, parking is restricted along the site’s frontage during typical School pick-up/drop-off times.

The Highway 2 intersection with Highway 15 operates with a traffic control signal and currently has auxiliary turn lanes on all approaches. Pedestrian cross walks with signal heads are in place across the north and west legs of the intersection.
The Highway 15 intersection with Wellington Street operates under two-way stop control for the Wellington Street approach. The north and south legs of the intersection operate with auxiliary turn lanes, while the west leg operates as a single shared travel lane.

Existing Traffic Volumes

The existing traffic conditions in the area have been established through turning movement counts provided by the Ministry of Transportation of Ontario/City of Kingston and a traffic count conducted by Paradigm. The turning movement count provided for the Highway 2 intersection with Highway 15 was conducted in July 2006. The validity of the July 2006 count was confirmed in the field by a peak hour traffic count conducted by Paradigm. The key traffic characteristics related to the existing weekday AM and PM peak hour traffic volumes are as follows:

- Traffic entering the intersection of Highway 2 with Highway 15 are in the order of 1,805 vph and 2,400 vph during the AM and PM peak hours respectively.
- Two-way traffic volumes on Highway 2 west of Highway 15 are in the order of 1,560 vph and 2,040 vph during the AM and PM peak hours respectively. Two-way traffic volumes to the east are in the order of 1,040 vph and 1,595 vph.
- Two-way traffic volumes on Highway 15 north of Highway 2 are in the order of 1,010 vph and 1,165 vph during the AM and PM peak hours respectively.
- Traffic entering the intersection of Highway 15 with Wellington Street are in the order of 1,020 vph and 1,175 vph during the AM and PM peak hours respectively.
- Two-way traffic volumes on Highway 15 north of Wellington Street are in the order of 985 vph and 1,140 vph during the AM and PM peak hours respectively.
- Two-way traffic volumes on Wellington Street west of Highway 15 are in the order of 50 vph during the AM and PM peak hours respectively.

Existing Operational Conditions

The level of service conditions for the road network have been assessed using Synchro 7.0 with HCM 2000 procedures and are summarized in Table 1 below. The operation of the intersections in the study area suggests that the intersections are operating with satisfactory levels of services on all approaches. The movement from Wellington Street to Highway 15 operates in the LOS B/C range which represents a good level of service. Development of the subject lands will reduce this LOS if all access occurs on Wellington Street.

As a sensitivity test, the following development scenarios were considered with access to Wellington Street:

1. Scenario 1: For a mix of 35 single and 35 townhouses- no seniors
2. Scenario 2: If all seniors
3. Scenario 3: If a mix of seniors and regular homes (50/50).
Based on the PM peak hour, the additional traffic resulting from generalized background growth and from the various development scenarios above, they can be accommodated on the existing road network with acceptable levels of services. LOS ranges from A to D with the Wellington Street/Highway 15 intersection operating at LOS C. However, v/c ratios at CR2 & CR15 are anticipated to be greater than 0.85 (v/c of .0 represents capacity). Furthermore, the eastbound left-turn volumes are approaching the level where dual left-turn lanes might be required. Additionally, the southbound right-turn volumes are approaching a point where channelization may be required.

### Table 1: Existing Operational Conditions

<table>
<thead>
<tr>
<th>Analysis Period</th>
<th>Interception</th>
<th>Control Type</th>
<th>MDE</th>
<th>Direction / Movement / Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EB - LEFT</td>
</tr>
<tr>
<td>AM Peak Hour</td>
<td>Highway 2 &amp; Highway 15</td>
<td>TCS</td>
<td>LOS</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Delay</td>
<td>5.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>V/C</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td>Highway 15 &amp; Wellington Street</td>
<td>TWSC</td>
<td>LOS</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Delay</td>
<td>14.9</td>
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<td></td>
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<td></td>
<td>V/C</td>
<td>0.09</td>
</tr>
<tr>
<td>PM Peak Hour</td>
<td>Highway 2 &amp; Highway 15</td>
<td>TWSC</td>
<td>LOS</td>
<td>D</td>
</tr>
<tr>
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<td></td>
<td>Delay</td>
<td>35.7</td>
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<tr>
<td></td>
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<td>V/C</td>
<td>0.86</td>
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<tr>
<td></td>
<td>Highway 15 &amp; Wellington Street</td>
<td>TWSC</td>
<td>LOS</td>
<td>C</td>
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<td></td>
<td></td>
<td></td>
<td>Delay</td>
<td>20.7</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>V/C</td>
<td>0.06</td>
</tr>
</tbody>
</table>

### Site Access Opportunities

A rational location to provide access to the lands is via Wellington Street near the western limits of Parcels 2 and 3 given the existing infrastructure in these locations. The arterial nature of Highway 15 and Highway 2 suggests that direct land access is a low priority and is restricted where possible. By locating the site’s access via Wellington Street, the impacts on the Highway 15 and Highway 2 corridor along with the existing neighbouring residential development can be limited.

The layout of the site should be designed so that site traffic is focused towards the arterial road network so as to avoid the use of neighbouring residential community to the west. Should operational conditions imply the need for geometric improvements to the Highway 15 and Wellington Street intersection, there is some potential to provide limited access to Highway 15.

Should access to Highway 15 be required it is suggested that access be restricted to right-in/right-out as the available sight lines and intersection spacing would be less than ideal to accommodate a full turns access.
Sight Distance Requirements

Roadway design standards provide various criteria for sight distance requirements at intersections, depending on the acceptable level of conflict between the side street turning traffic (Driveway) and main street through traffic. The TAC Geometric Design Guide for Canadian Roads suggests that for stop controlled minor roadways or no control minor roadways approaching a major road, the sight distance that should be provided ranges from the distance travelled in 3 seconds to decision sight distance for the applicable design speed.

The posted speed limit on Wellington Street is 40 km/h as such the minimum design speed is 50 km/h while the desirable design speed is 60 km/h. The posted speed limits along Highway 15 and Highway 2 is 60 km/h as such the minimum design speed is 70 km/h while the desirable design speed is 80 km/h. The sight distances for design speeds between 50 km/h and 80 km/h are summarized in Table 2 below.

<table>
<thead>
<tr>
<th>Sight Distance</th>
<th>Design Speed</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>50 km/h</td>
</tr>
<tr>
<td>Distance Travelled in 3 Seconds</td>
<td>45</td>
</tr>
<tr>
<td>Minimum Stopping Sight Distance</td>
<td>75</td>
</tr>
<tr>
<td>Minimum Decision Sight Distance</td>
<td>150</td>
</tr>
<tr>
<td>Desirable Decision Sight Distance</td>
<td>215</td>
</tr>
</tbody>
</table>

Based on our experience, we recommend that a driveway intersection with a public roadway should have sight distance equal or greater than minimum stopping sight distance for a design speed that is at least 10 kilometres per hour over the posted speed limit.

For a driveway connection to Wellington Street positioned within the non-developable lands located approximately 80 metres west of Highway 15 a minimum sight line of 75 metres in each direction is required. However, the desirable decision sight distance for the same design speed is 215 metres.

Sight Distance Measurements

The potential sight distances available for a driveway connection to Wellington Street were measured in the field using a target and measuring wheel and were measured within the road right of way. The measured sight distances are as follows:

- East towards Highway 15 is unimpeded to the intersection, and
- West towards Main Street was measured to be approximately 105 metres and is limited due to the sagging of Wellington Street.

Based on the measured sight distances in the field, a driveway connection to Wellington Street at the westerly proximity of the subject lands will provide the minimum stopping sight distance required for a 50 km/h hour design speed in both directions.
The George Street intersection with Wellington Street is effectively a “T” intersection, however on the north side offset by approximately 10 metres to the west is an entrance to the school site. The low volumes in this area are such that turning conflicts between vehicles are not likely to create operational issues. If a driveway, connection for Parcels 2 and 3 is made to Wellington Street the distance between the driveways and George Street would be approximately 25 metres measured centre line to centre line. The spacing is somewhat less than ideal, but given the low volume of traffic in and around the area, turning conflicts are likely to remain low.

Sight distances along Highway 15 north of Wellington Street are limited to approximately 100 metres due to the horizontal curvature of Highway 15.

**Summary and Conclusions**

Based on our planning experience and the field observations, the following is concluded:

- The Highway 15 intersections with Highway 2 and Wellington Street are operating with satisfactory levels of service conditions during the AM and PM peak hours.
- Access to the developable lands should be provided via Wellington Street. Should access to Highway 15 be required to alleviate capacity or neighbourhood issues, access should be restricted to right-in/right-out.
- The driveway approach to Wellington Street should be designed with an adequate visibility triangle to mitigate any obstructions. The connection should operate with stop control for the driveway approach. A stop sign (Ra-1) should be installed on the approach to Wellington Street in accordance with the Ontario Traffic Manual Book 5.
- The sight lines for the proposed driveway connection to Wellington Street are satisfactory for safe operation as the minimum stopping sight distances are exceeded in both directions based on a 50 km/h design speed.
- To mitigate any potential obstructions to the sight lines along Wellington Street it is recommended that amendments to the local area traffic regulations be considered to prohibit stopping across the site’s Wellington Street frontage.
- When site-specific plans are developed, a detailed traffic impact study should be completed to identify capacity issues and mitigation measures necessary (if any) to accommodate the build-out of the subject site.

We trust this letter will meet your requirements. If there are any questions on this matter, please contact the undersigned.

Yours very truly,

Paradigm Transportation Solutions Limited

Philip E. Grubb
P. Eng.
President

August 11, 2010
Mr. Neal DeRuyter
APPENDIX D:

Site Concept
Demonstration Plans & Illustrations-Development Scenarios (MTBA)
BARRIEFIELD FEASIBILITY STUDY
PREFERRED PARTIAL SITE CONCEPT
PARCELS 2 & 3 REVISION 4
SENIORS APARTMENTS &
SINGLE FAMILY HOUSES/ SEMIS

Council Meeting 20   September 7, 2010
OVERALL VIEWS: These birds-eye views show proposed built form concepts with all vegetation removed from the images for clarity. The adjacent portion of existing Barrie Field streets and buildings are shown, with the preferred concept of proposed new buildings located as per the attached site concept plans, including the seniors apartment homes on Parcel 2 and the single family and semi-detached homes on Parcel 3. Horton School is also in view.
PARCEL 2: These images show proposed built form concepts with all proposed vegetation removed from the views for clarity.

**IMAGE 04**
View of entry of multi-form senior's apartment building, showing separation into smaller building forms, and front porches.

**IMAGE 05**
2-Storey seniors apartment building from Northwest. Note end forms step down to one storey; varied and non-repetitive form patterning.

**IMAGE 06**
Seniors apartment building from Southwest. Note use of simple geometric form, primary/secondary form, incremental and additive form, and other architectural elements germane to historic Barriefield.
PARCEL 3: These images show proposed built form concepts and use a "placeholder" for existing George Street vegetation, to be largely retained.

**IMAGE 07**
New single family homes as viewed from Highway #15 just North of Highway #2, George Street and J.E. Horton school in background.

**IMAGE 08**
Single family homes as viewed from the corner of Highway #15 and Wellington looking Southwest. Semi-Detached unit on right; George Street in background.

**IMAGE 09**
New single family homes, showing view of new lane looking Southeast.

**IMAGE 10**
New single family homes fronting onto open landscaped space on East side of George Street, looking Northeast. New pedestrian path in foreground.
APPENDIX E:

Financial Analysis Charts

(SHS)
Project Statistics

Sponsor Group: Barriefield Seniors Complex
Project Address: Parcel 2, Barriefield Village
Project Type: New construction
Site Area: 145,313 SF
13,500 m²

Construction Period: 12 months

<table>
<thead>
<tr>
<th>Units</th>
<th># of Units</th>
<th>Unit Size (SF)</th>
<th>Unit Size (m²)</th>
<th>Rent per unit per month</th>
<th>Rents as % of AMR</th>
<th>100% AMR</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bedroom</td>
<td>16</td>
<td>550</td>
<td>51.1</td>
<td>$605</td>
<td>80%</td>
<td>$756</td>
<td></td>
</tr>
<tr>
<td>2-Bedroom</td>
<td>4</td>
<td>700</td>
<td>65.0</td>
<td>$727</td>
<td>80%</td>
<td>$909</td>
<td></td>
</tr>
<tr>
<td>1 Bedroom RGI Unit</td>
<td>10</td>
<td>550</td>
<td>51.1</td>
<td>$605</td>
<td>80%</td>
<td>$756</td>
<td>Reserved for RGI units only</td>
</tr>
<tr>
<td>2 Bedroom RGI Unit</td>
<td>2</td>
<td>700</td>
<td>65.0</td>
<td>$727</td>
<td>80%</td>
<td>$909</td>
<td>Reserved for RGI units only</td>
</tr>
</tbody>
</table>

Total # of RGI Units: 12
Total # of Units: 32
Total Size of Dwelling Units:
- Total Size of Dwelling Units (SF): 18,500
- Total Size of Dwelling Units (m²): 1,718.7

Actual Total Rent Per Annum ($ and % of AMR):
- $241,046 80.0%

<table>
<thead>
<tr>
<th>(SF)</th>
<th>(m²)</th>
<th>% of Building Space</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circulation</td>
<td>5,550</td>
<td>516</td>
<td>21.76%</td>
</tr>
<tr>
<td>Community room</td>
<td>500</td>
<td>46</td>
<td>1.96%</td>
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<tr>
<td>Other amenity space</td>
<td>950</td>
<td>88</td>
<td>3.73%</td>
</tr>
<tr>
<td><strong>Total Building Area</strong></td>
<td><strong>25,500</strong></td>
<td><strong>2,369</strong></td>
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</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total parking spaces</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Revenue generating parking spaces</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Number of storage lockers</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

Prepared by SHS Consulting
Council Meeting 20   September 7, 2010

Note: model based on rental tenure
**Capital Budget**  
Barriefield Seniors Complex  
Parcel 2, Barriefield Village

## SOFT COSTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Total Cost</th>
<th>Per Unit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Building Design and Planning Services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Design and Planning Services Sub-total</td>
<td>$559,827</td>
<td>$17,495</td>
<td>Includes architectural, planning, engineering, and development consultant fees and disbursements</td>
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<tr>
<td><strong>Site, Technical Studies, and Surveys</strong></td>
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<tr>
<td>Site, Technical Studies, and Surveys Sub-total</td>
<td>$291,550</td>
<td>$9,111</td>
<td>Includes building, property appraisal, and site surveys; geotechnical and environmental assessments; noise, traffic, and stormwater analysis; visual, cultural heritage, and landscape evaluations</td>
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<tr>
<td><strong>Organizational Expenses and Legal Fees</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Organizational Expenses and Legal Fees Sub-total</td>
<td>$91,000</td>
<td>$2,844</td>
<td>Includes legal fees and disbursements; marketing, audit, and organizational expenses; rent-up and appraisal</td>
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<tr>
<td><strong>Construction Financing and Related Fees</strong></td>
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<td></td>
</tr>
<tr>
<td>Construction Financing and Related Fees Sub-Total</td>
<td>$73,294</td>
<td>$2,290</td>
<td>Includes construction financing and associated legal fees, CMHC mortgage insurance, and interest</td>
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<tr>
<td><strong>Building and Planning Fees/Permits</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Building and Planning Fees/Permits Sub-total</td>
<td>$273,231</td>
<td>$8,538</td>
<td>Includes all municipal and school board fees and permitting costs</td>
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### Soft Costs Summary

<table>
<thead>
<tr>
<th>Description</th>
<th>Total Cost</th>
<th>Per Unit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Costs Sub-total</td>
<td>$1,288,902</td>
<td>$40,278</td>
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<tr>
<td>Soft Cost Contingency</td>
<td>$110,023</td>
<td>$3,438</td>
<td>10.0%</td>
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<tr>
<td><strong>Soft Costs Total</strong></td>
<td>$1,398,925</td>
<td>$43,716</td>
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</table>
### HARD COSTS

<table>
<thead>
<tr>
<th>Construction and Finishing Costs</th>
<th>Total Cost</th>
<th>Per Unit</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Construction and Finishing Costs Sub-total</td>
<td>$4,408,638</td>
<td>$137,770</td>
<td>Includes base construction cost ($135/sq.ft), architectural enhancement and heritage allowance ($5/sq.ft.), site servicing ($512,173), appliances, furniture and equipment, escalaton, and contingency</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land / Property Acquisition Costs</th>
<th>Total Cost</th>
<th>Per Unit</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Land / Property Acquisition Cost Sub-total</td>
<td>$663,680</td>
<td>$20,740</td>
<td>Assumed market value of land acquired for $1 from Federal Government</td>
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### TOTAL CAPITAL COSTS

<table>
<thead>
<tr>
<th>Land / Property Acquisition Costs</th>
<th>Total Cost</th>
<th>Per Unit</th>
<th>Comments</th>
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<tr>
<td>Hard Cost Total</td>
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<td>Soft Cost Total</td>
<td>$1,398,925</td>
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<tr>
<td>HST</td>
<td>$798,163</td>
<td>$24,943</td>
<td>13% Gross value, subject to partial rebate</td>
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<tr>
<td>Total Project Cost</td>
<td>$7,269,406</td>
<td>$227,169</td>
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### Contributions and Rebates

<table>
<thead>
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<th>Contributions and Rebates</th>
<th>Total Cost</th>
<th>Per Unit</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Land Value</td>
<td>$663,680</td>
<td>$20,740</td>
<td>Assumed market value of land acquired for $1 from Federal Government</td>
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<tr>
<td>City of Kingston Grant</td>
<td>$4,160,000</td>
<td>$130,000</td>
<td>$120,00/unit affordable housing allocation ($3,840,000 total) + $10,00/unit offsetting grant for municipal fees/charges ($320,000 total)</td>
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<td>PST rebate</td>
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<td>78% Rebate applied to the PST portion of HST</td>
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<td>GST Rebate</td>
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<td>100% Rebate applied to the GST portion of HST</td>
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<td>Total Project Cost Less Contributions and Rebates</td>
<td>$1,755,622</td>
<td>$54,863</td>
<td>Projected value of mortgage</td>
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<td>Mortgage</td>
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<tr>
<td>----------------------------------</td>
<td>---------------------------</td>
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<td></td>
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<tr>
<td>Mortgage Amount</td>
<td>$1,755,622</td>
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<td>Mortgage Interest Rate</td>
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<td>Annual Mortgage Payments</td>
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<td>Total Annual Mortgage Payments</td>
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**Operating Budget**  
Barriefield Seniors Complex  
First Full Year  
Parcel 2, Barriefield Village

<table>
<thead>
<tr>
<th>Estimated Operating Revenue</th>
<th>Total</th>
<th>Per Unit</th>
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</thead>
<tbody>
<tr>
<td>Total Operating Revenue</td>
<td>$267,831</td>
<td>$8,085</td>
<td>Includes rental income at 80% of AMR; rent-supplement top-ups; laundry, parking, and locker revenues; and vacancy loss</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimated Operating Expenses</th>
<th>Total</th>
<th>Per Unit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Operating Expenses</td>
<td>$245,961</td>
<td>$7,686</td>
<td>Includes maintenance and utility costs; property management fees, property taxes, insurance, mortgage payments, reserve fund contributions, and net HST</td>
</tr>
</tbody>
</table>

| Annual Net Operating Income      | $129,643 |
| Debt Service                    | $107,773 | Annual Mortgage Payments            |
| Debt Coverage Ratio             | 1.20     | Exceeds CMHC Underwriting Guidelines |
| Annual Net Operating Profit/Loss| $21,871  |
### Project Statistics

**Note:** model based on freehold tenure

<table>
<thead>
<tr>
<th>Sponsor Group:</th>
<th>Barriefield Village Ownership Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Address:</td>
<td>Parcel 3 Barriefield Village</td>
</tr>
<tr>
<td>Project Type:</td>
<td>New Construction</td>
</tr>
<tr>
<td>Site Area:</td>
<td>173,299 SF 16,100 m²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Units</th>
<th># of Units</th>
<th>Unit Size (SF)</th>
<th>Unit Size (m²)</th>
<th>Affordable Sales Price</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-detached (2-BR, 2 storey)</td>
<td>2</td>
<td>1000</td>
<td>92.9</td>
<td>$236,131</td>
<td></td>
</tr>
<tr>
<td>Single Detached (2-BR, 1 storey)</td>
<td>2</td>
<td>1150</td>
<td>106.8</td>
<td>$236,131</td>
<td></td>
</tr>
<tr>
<td>Single Detached (2-BR, 1.5 storey)</td>
<td>1</td>
<td>1050</td>
<td>97.5</td>
<td>$236,131</td>
<td></td>
</tr>
<tr>
<td>Single Detached (3-BR, 1.5 storey)</td>
<td>3</td>
<td>1150</td>
<td>106.8</td>
<td>$236,131</td>
<td></td>
</tr>
<tr>
<td>Single Detached (2-BR, 2 storey)</td>
<td>4</td>
<td>1000</td>
<td>92.9</td>
<td>$236,131</td>
<td></td>
</tr>
<tr>
<td>Single Detached (3-BR, 2 storey)</td>
<td>6</td>
<td>1100</td>
<td>102.2</td>
<td>$236,131</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total # of Units</th>
<th>Total Size of Dwelling Units</th>
<th>Total Sales Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>19,400 SF 1,802.3 m²</td>
<td>$4,250,358</td>
</tr>
</tbody>
</table>
### Capital Budget

**Barriefield Village Ownership Housing**
**Parcel 3 Barriefield Village**

#### SOFT COSTS

<table>
<thead>
<tr>
<th>Service Description</th>
<th>Total Cost</th>
<th>Per Unit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Building Design and Planning Services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Design and Planning Services Sub-total</td>
<td>$74,150</td>
<td>$4,119</td>
<td>Includes architectural, planning, and engineering fees and disbursements</td>
</tr>
<tr>
<td><strong>Site, Technical Studies, and Surveys</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site, Technical Studies, and Surveys Sub-total</td>
<td>$196,600</td>
<td>$10,922</td>
<td>Includes building and property appraisal; site surveys; geotechnical and environmental assessments; noise, traffic, and stormwater analysis; and visual, cultural heritage, and landscape evaluations</td>
</tr>
<tr>
<td><strong>Legal, Organizational, and Marketing Services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal, Organizational, and Marketing Services Sub-total</td>
<td>$73,500</td>
<td>$4,083</td>
<td>Includes legal fees and disbursements; marketing, audit, and organizational expenses; and appraisal</td>
</tr>
<tr>
<td><strong>Construction Financing and Related Fees</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Financing and Related Fees Sub-Total</td>
<td>$92,744</td>
<td>$5,152</td>
<td>Includes financing and associated fees and interest</td>
</tr>
<tr>
<td><strong>Building and Planning Fees/Permits</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building and Planning Fees/Permits Sub-total</td>
<td>$302,011</td>
<td>$16,778</td>
<td>Includes all municipal and school board fees and permitting costs</td>
</tr>
</tbody>
</table>

#### Soft Costs Summary

<table>
<thead>
<tr>
<th>Description</th>
<th>Total Cost</th>
<th>Per Unit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Costs Sub-total</td>
<td>$739,005</td>
<td>$41,056</td>
<td></td>
</tr>
<tr>
<td>Soft Cost Contingency</td>
<td>$63,288</td>
<td>$3,516</td>
<td>10.0%</td>
</tr>
<tr>
<td>Soft Costs Total</td>
<td>$802,293</td>
<td>$44,572</td>
<td></td>
</tr>
</tbody>
</table>

Prepared by SHS Consulting

Exhibit “A” Report 10-281

Council Meeting 20 September 7, 2010
## HARD COSTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Total Cost</th>
<th>Per Unit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction and Finishing Cost</td>
<td>$3,551,810</td>
<td>$197,323</td>
<td>Includes base construction cost ($112/sq.ft.), overall site servicing ($49,524/unit), unit servicing ($8,500/unit), landscape and improvements (i.e. garages/sheds), escalation, and contingency</td>
</tr>
<tr>
<td>Construction and Finishing Cost Sub-total</td>
<td>$3,925,130</td>
<td>$218,063</td>
<td></td>
</tr>
<tr>
<td>Land / Property Acquisition Costs</td>
<td>$373,320</td>
<td>$20,740</td>
<td>Assumed market value of land acquired for $1</td>
</tr>
<tr>
<td>Land / Property Acquisition Cost Sub-total</td>
<td>$180,000</td>
<td>$10,000</td>
<td></td>
</tr>
<tr>
<td>Land Value Donated</td>
<td>$373,320</td>
<td>$20,740</td>
<td>Assumed market value of land acquired for $1</td>
</tr>
<tr>
<td>City of Kingston Grant</td>
<td>$180,000</td>
<td>$10,000</td>
<td>$10,000/unit offsetting grant to help cover cost of municipal fees/charges</td>
</tr>
<tr>
<td>HST (PST Portion) Rebate</td>
<td>$270,358</td>
<td>$15,020</td>
<td>Rebate applied to the PST portion of HST</td>
</tr>
<tr>
<td>HST (GST Portion) Rebate</td>
<td>$216,633.40</td>
<td>$12,035</td>
<td>Rebate applied to the GST portion of HST</td>
</tr>
<tr>
<td>Total Contributions and Rebates</td>
<td>$1,040,312</td>
<td>$57,795</td>
<td></td>
</tr>
<tr>
<td>Total Project Cost Less Contributions</td>
<td>$4,250,358</td>
<td>$236,131</td>
<td>Total home sales value required to break-even</td>
</tr>
</tbody>
</table>

### TOTAL CAPITAL COSTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Total Cost</th>
<th>Per Unit</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Cost Total</td>
<td>$3,925,130</td>
<td>$218,063</td>
<td></td>
</tr>
<tr>
<td>Soft Cost Total</td>
<td>$802,293</td>
<td>$44,572</td>
<td></td>
</tr>
<tr>
<td>HST</td>
<td>$563,247</td>
<td>$31,291</td>
<td>13% Gross value, subject to partial rebate</td>
</tr>
<tr>
<td>Total Project Cost</td>
<td>$5,290,670</td>
<td>$293,926</td>
<td></td>
</tr>
<tr>
<td>Net Income</td>
<td>Total</td>
<td>Per Unit</td>
<td>Comments</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------------</td>
<td>--------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Total Sales Value of Completed Homes</td>
<td>$4,250,358</td>
<td>$236,131</td>
<td>Affordable unit sale price</td>
</tr>
<tr>
<td>Total Project Cost Less Contributions</td>
<td>$4,250,358</td>
<td>$236,131</td>
<td></td>
</tr>
<tr>
<td><strong>Net Income</strong></td>
<td><strong>$0</strong></td>
<td><strong>$0</strong></td>
<td>Assumes the City manages the development process at a break-even rate;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>the profit margin for developers, builders, trades, and other</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>service professionals is included in the cost projections; net</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>income of 0 implies no additional cost to develop project above and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>beyond the proposed contributions</td>
</tr>
</tbody>
</table>
APPENDIX F:
PIC Reports, Public Comments, and Online Survey Results (WCI)
**Note:** The contents of Appendix F (all comment sheets, emails, correspondence, and PIC summaries) were provided separately to City of Kingston Council on August 24th, 2010. This information is also available from City Staff.
APPENDIX G:

Streetscape and Building Form Examples (MTBA)
Figure 01
View looking West along James Street toward downtown and the Great Cataracui River

Figure 02
Corner of George and James Streets, looking West toward downtown Kingston, Rock Garden to left

Figure 03
Corner of George and James Streets, looking North, down George Street; Parcel 3 to the right

Figure 04
View looking North down Sharman’s Lane

Figure 05
View looking East down Regent Street, note the screen of trees and bushes on subject Part 3 at end of street

Figure 06
View looking North down Drummond Street

Figure 07
Corner of Wellington and Drummond Streets, view looking South down Drummond

Urban Space Key Plan
Points of view for each photo

Urban Space & Streetscapes

DATE: August 2010

CITY OF KINGSTON

Barriefield Village
FEASIBILITY STUDY

Council Meeting 20 September 7, 2010
Figure 09
Building Patterns, some houses set back from street, this “exception” includes walled garden and garage

Figure 10
Building Clusters, View looking South along Main Street showing typical additive elements

Figure 11
Composition of different building types

Figure 12
Cluster of out buildings and Dwelling

Figure 13
Example of typical side-gable, 2 storey architectural style found in Barriefield. Typical integration of old and new

Figure 14
Example of typical side-gable, 1.5 storey architectural style found in Barriefield, with picket fence and centre gable/ window

Figure 15
Example of typical front porch used on many houses in Barriefield

Figure 16
Architectural composition of main dwelling and incremental additions common to Village

Figure 12
Architectural Elements, Forms & Compositions

City of Kingston
Barriefield Village
Feasibility Study

Date: August 2010  July 21, 2010

Council Meeting 20  September 7, 2010