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Cultural Heritage Resource **STRATEGY**

City of Markham
North District Employment Lands (MiX)

Date:
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Prepared for:
Corporation of the City of Markham

Prepared by:
MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC)
200-540 Bingemans Centre Drive
Kitchener, ON N2B 3X9
T: 519 576 3650 | F: 519 576 0121

In association with George Robb Architect and urbanMetrics

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Project personnel

MHBC Planning Ltd.		
Dan Currie, *MA, MCIP, RPP, CAHP*	*Managing Director of Cultural Heritage*	Senior Review
Nick Bogaert, *BES, MCIP, RPP, CAHP*	*Heritage Planner*	Research, Author
Vanessa Hicks, *MA, CAHP*	*Heritage Planner*	Author, Land Use Policy Analysis
Jasmin Brinovcar, *HBA, CPT*	*GIS/Planning Technician*	GIS Technician, Mapping and Data Analysis
urbanMetrics		
Peter Thoma, *MCIP, RPP, PLE*	*Partner*	Economics
Cate Flanagan, *BA, MPL*	*Planner*	Economics
George Robb Architect		
Peter Stewart, *b.arch, OAA MRAIC CAHP*	*Principal*	Built Heritage / Architecture
Shane Baker, *BES, b.arch OAA*	*Architect*	Built Heritage / Architecture

Glossary of abbreviations

GRA	*George Robb Architect*
MHBC	*MacNaughton Hermsen Britton Clarkson Planning Limited*
MHSTCI	*Ministry of Heritage, Sport, Tourism and Culture Industries*
MiX	*Markham Innovation Exchange*
OHA	*Ontario Heritage Act*
Toolkit	*Ontario Heritage Toolkit*
O.REG. 9/06	*Ontario Regulation 9/06 for determining cultural heritage significance*
PPS	*Provincial Policy Statement*
S&G	*Standards and Guidelines for the Conservation of Historic Places in Canada*

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- The City of Markham
- Regan Hutcheson, Manager – Heritage Planning and Heritage Districts Development
- George Duncan, Senior Heritage Planner *(now retired)*
- Hersh Tencer, Senior Manager – Real Property
- Graham Seaman, Director – Sustainability & Asset Management
- MiX lands property owners and representatives

Executive Summary

The City of Markham has embarked on long-range planning for the future urban area lands within the northern area of the City of Markham. A portion of this area has been identified for employment lands, and will be known as the Markham Innovation Exchange (MiX). The area is currently rural in nature and contains a number of identified cultural heritage resources, some designated under the *Ontario Heritage Act* and some listed on the City's municipal heritage register. The City of Markham requires direction related to cultural heritage resource conservation as this area moves forward towards redevelopment.

The City of Markham retained the consultant team of MHBC Planning, George Robb Architect and urbanMetrics to assist in the development of an overall strategy as it relates to the cultural heritage resources within this area of the City.

The strategy developed by the project team reviewed the concept planned for the MiX lands, examined various options for the cultural heritage resources, and provided recommendations that both balance conservation of the identified resources with the inclusion of the lands within a planned employment area.

Based on the recommendations prepared by the project team, the main potential outcomes for the group of properties are:

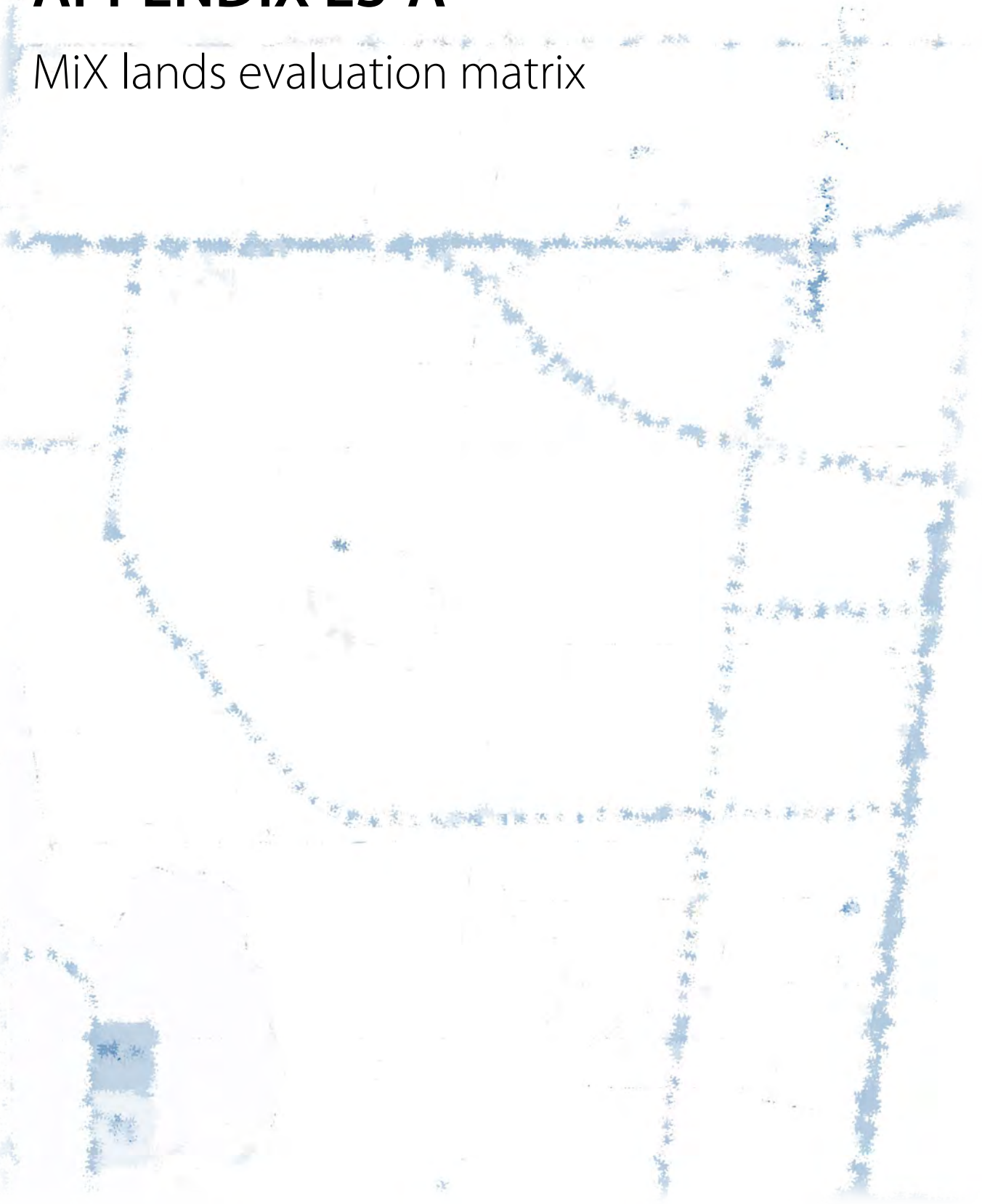
1. Retention of the heritage resources within the employment lands, with the resources either maintaining existing uses or being adaptively re-used.
2. Removal of the heritage resources, which would see the relocation of all or some of the buildings to either other locations within the employment lands, other locations within the City (such as the Markham Heritage Estates), or demolition of the buildings.

The assessment completed by the team confirms that the properties identified by the City of Markham have cultural heritage value, and has identified strategies to address their future conservation as this area is redeveloped to provide important employment lands to the City of Markham in the future. **Appendix ES-A** summarizes the findings.

A proposed Official Plan Amendment will establish a policy framework for the MiX area, which will prioritize adaptive re-use or relocation of buildings rather than retention of single-family dwellings for residential uses within a business park. This would change the City's usual level of priority for such uses when areas are redeveloped, and recognizes the somewhat unique opportunities the MiX lands provide.

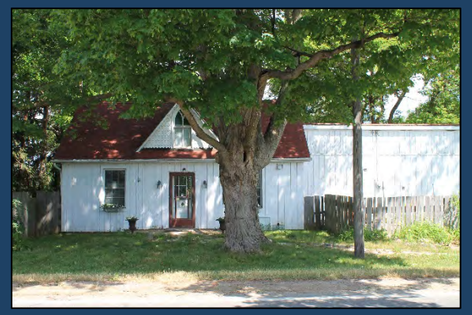
APPENDIX ES-A

MiX lands evaluation matrix



City of Markham – MiX Employment Lands Cultural Heritage Resource Evaluation Matrix

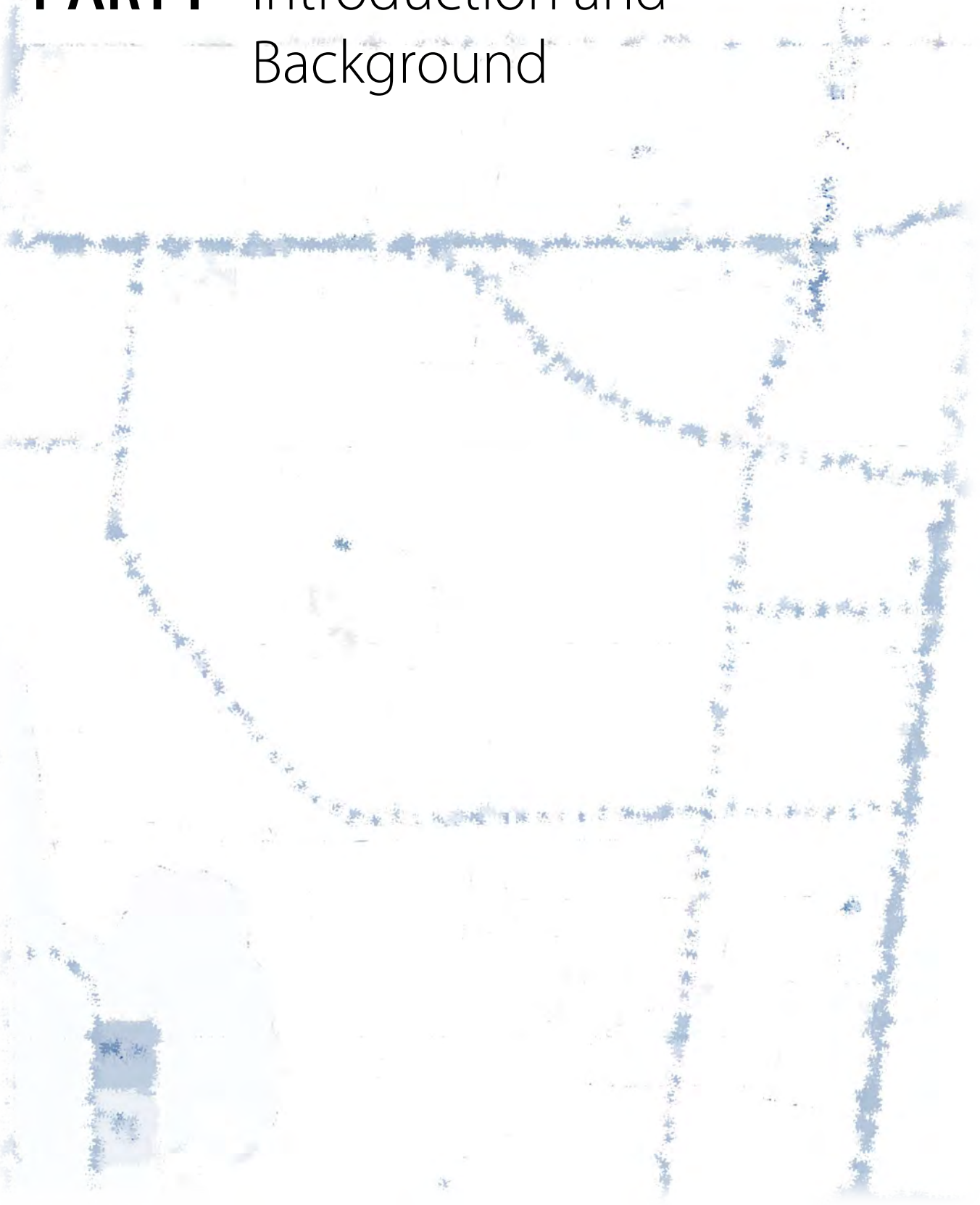
Property information				Evaluation criteria					
Ref#	**Address / photo**	**Heritage Status**	**Ownership**	**Significance of resource** (built / landscape)	**Condition / integrity**	**Relationship to concept plan** (location / use)	**Candidate for re-location?**	**Impact of retention on future business park use**	**Recommendation**
#1	**2780 19th Avenue** (Alfred Read Farmhouse – c.1855) 	**Listed**	City of Markham	Existing building only	Fair	Located outside of business park area.	Yes. Further assessment required as future plans develop.	n/a – outside planned business park area	Retain and integrate with future development, should re-location (as previously approved by Council) not proceed.
#2	**3010 19th Avenue** (SS #7 – c.1902) 	**Designated Part IV** (2004-215)	Private (Catholic Diocese)	Existing building	Good	Located at periphery of business park area, adjacent to environmental features	Good candidate for re-location due to size. Little benefit to move because of location at the periphery and near road.	Low impact. Small corner parcel at periphery of business park area. Building could be adaptively reused for office / commercial / restaurant and integrate with surrounding uses, or be converted to residential with low impact.	Retain in existing location and adaptively re-use

#3	3270 19th Avenue (Doner House – c.1881) 	**Listed**	Private (Flikas)	Existing building.	Good. Building is currently occupied.	Located in close proximity to environmental features (Greenway System).	Little benefit to move because of location – unless required due to road widening	Low impact. Small parcel located near road and environmental features. Building could be adaptively reused for office / commercial / restaurant and integrate with surrounding uses, or continue to be used for residential purposes with relatively low impact.	Retain and continue existing use.
#4	3490 19th Avenue (Gormley Widman House and Barn – c.1855 / c.1902) 	**Listed**	Private (Wideview Farms – Friedman)	Significance relates to built features (house, barns, outbuildings), as well as landscape features. Prominent lane leads towards buildings from road, house situated on rise of land, and layout of collection of buildings appears to remain in original form. Fields are not significant.	Condition of house appears fair-poor but is deteriorating, and some integrity is starting to erode. Repairs required to secure building envelope. Condition of outbuildings appears good overall. General grounds upkeep required in area around house.	Located within/adjacent to environmental features (Greenway System, ORMCP, unevaluated wetland).	No.	Low-medium impact. Buildings located near environmental features but set back from road. House and other buildings could be adaptively reused for a variety of purposes. May be some impact on range of business park uses if house used for residential purposes	Sever house and barn and retain and adaptively re-use
#5	3565 19th Avenue (Lewis-Jarvis House and Barn – c.1870/c.1900) 	**Listed**	City of Markham	Significance relates to the built features (house, barn, outbuildings), as well as landscape features. Tree-lined laneway leads from the road, and the layout of the collection of buildings appears to remain in original form. Fields are not significant.	Condition of house appears to be fair-poor, and some repairs have been identified to secure building envelope. The barn and other outbuildings appear to be fair condition. General grounds upkeep required.	Located near proposed collector road network and adjacent to environmental features (Greenway System, unevaluated wetland).	No	Low-medium impact. Buildings located near environmental features and near road. House and other outbuildings could be adaptively reused for a variety of purposes. May be some impact on range of business park uses if house used for residential purposes	Sever house and main barns (excluding small barn in field) from larger parcel of land. Buildings should be restored, retained and adaptively re-used. Consider relocation or demolition of outlying barn.

#6	11251 Woodbine Avenue (Hopper House – c.1855) 	**Listed**	Private (Glendower Properties)	Significance relates to built resource and architectural features.	Overall condition of house is poor, although stonework and foundation appear sound. Repairs required to secure building envelope.	Located near floodplain	House is candidate for relocation, however stabilization would be required internally in order to prepare for move.	Medium impact. Building could be adaptively reused for office / commercial / restaurant and integrate with surrounding planned business park uses. Residential use not recommended due to location.	Relocate within development parcel.
#7	11242 Warden Avenue (Summerfeldt-McKay House – c.1835/c.1875) 	**Listed**	City of Markham	Significance relates to built resource, construction type (possibly mud-brick), and architectural features.	Fair- Good	Located at periphery of business park area and adjacent to proposed collector road network.	No – due to mud brick construction Likely little benefit to move because of location at the periphery and near road.	Low impact. House located near road and at periphery of business park area. Building could be adaptively reused for office / commercial / restaurant and integrate with surrounding uses, or be used for residential purposes again with relatively low impact.	Retain and adaptively reuse. City of Markham should sever house and yard area, then sell 'as-is' at market value. Private landowner would then be responsible for restoration of building.
#8	11172 Warden Avenue (Clayton School [SS#12] – 1874) 	**Designated Part IV (187-82)**	Private (Azizi)	Significance relates primarily to built resource, as detailed in designation report. Landscape features consist of prominent view from Warden Avenue, as well as some notable large old trees which are also found in historic photos of the property.	Excellent. House is currently occupied.	Located at periphery of business park area adjacent to proposed collector road network.	House could technically be good candidate for relocation, but would impact on heritage value due to significance of landscape features. However, likely little benefit to move because of location at the periphery and near road.	Low impact. Small parcel located near road and at periphery of business park area. Building could be adaptively reused for office / commercial / restaurant, or continue to be used for residential purposes with relatively low impact.	Retain and continue existing residential use or other adaptive reuse

#9	11091 Warden Avenue (John G. Mustard farmhouse – c.1845) 	Listed	City of Markham	Significance relates primarily to built resources (house, small outbuilding) and architectural features.	Excellent. House is currently occupied.	Located outside of planned business park area.	No	n/a – outside planned business park area	Retain. Potential to be integrated into future redevelopment.
#10	3450 Elgin Mills Road East (Hilts-Ford House – c.1850/1875) 	**Listed**	Private (Romandale Farms)	Significance relates to the built features (house, barn) and landscape features (tree-lined laneway, orchard remnants) Layout of the collection of buildings appears to remain in original form.	Good to excellent. Outbuildings also appear in good condition, although close inspection was not undertaken due to access restrictions.	Located near environmental features and within floodplaiin.	No	Low impact on range of business park uses if house to be used for residential purposes.	Sever house and barn and retain and continue residential use.

PART I Introduction and Background



1.0 Introduction

The City of Markham has identified an area of presently rural lands as future urban area, which will accommodate housing and employment growth over the next several decades. City staff are proceeding through long-range planning for this area, and one of the focus areas is lands known as the Markham Innovation Exchange (MiX). The MiX lands contain a number of identified cultural heritage resources, some designated under the *Ontario Heritage Act* and some listed on the City's municipal heritage register.

The City of Markham is seeking direction related to the conservation of cultural heritage resources within the MiX area as it moves forward towards redevelopment in the future. In order to assist with this project, the City retained the consultant team of MHBC Planning, George Robb Architect and urbanMetrics to develop an overall strategy for the cultural heritage resources within this area.

The direction contained within this strategy will provide valuable information to the City of Markham as it relates to the conservation and adaptive reuse of cultural heritage resources within industrial and commercial settings. Through property-specific advice and general advice, the City will be well-equipped to conserve cultural heritage resources within this area and other areas with similar resources.

2.0 Markham Innovation Exchange (MiX) concept

2.1 Background

The MiX lands form the main employment area portion of the City of Markham's Future Urban Area, which is a 3,200 ac (1,300 ha) area of the City located generally north of Major Mackenzie drive and east of Highway #404. The broader Future Urban Area includes lands slated for neighbourhood growth and lands slated for employment growth. It is anticipated that the Future Urban Area lands will continue to develop into a full urban community over the next 1-2 decades.

The MiX area is intended to transform into a distinctive innovation district utilizing one of the largest undeveloped opportunities for greenfield employment lands in the Greater Toronto Area. The City of Markham anticipates a campus-style environment where entrepreneurs, innovators and start-ups can collaborate and grow their businesses. The City of Markham has launched an area of their economic development website specifically promoting the MiX concept.

Figure 1: *Markham Innovation Exchange (MiX) website excerpts (source: City of Markham)*

The MiX lands are located generally north of Elgin Mills Road and west of Warden Avenue. The lands are currently rural in nature, and contain a mixture of rural residential and agricultural land uses. A number of environmental features such as woodlands, wetlands and stream corridors traverse the area. The MiX lands also contain a number of identified cultural heritage resources, consisting of both municipally-owned and privately-owned properties. **Figure 2,** depicts the City's overall concept for the area and identifies the cultural heritage resources.

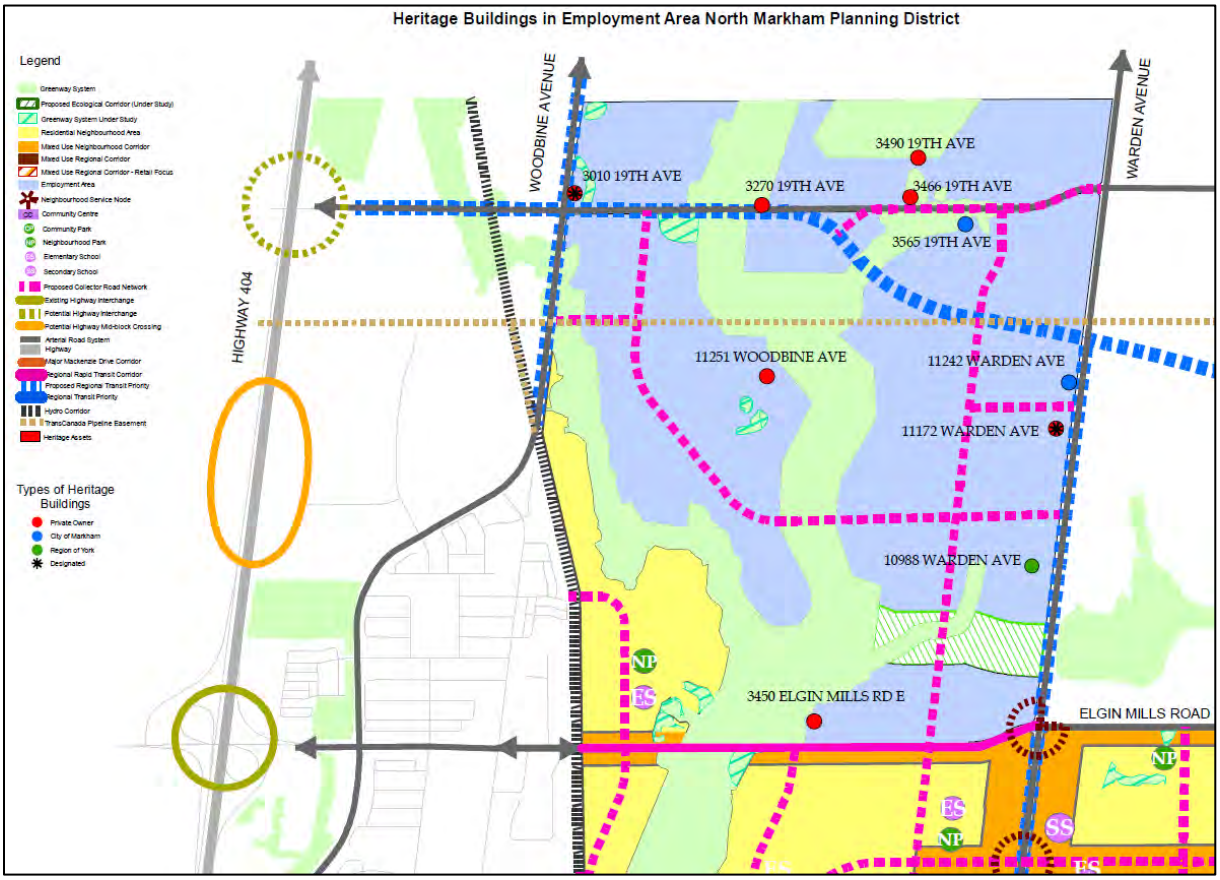


Figure 2: *Markham Innovation Exchange (MiX) Area (source: City of Markham)*

Preliminary planning conducted by the City of Markham has identified a Greenway System, preliminary arterial road network to support development within larger blocks of land, preliminary areas for employment uses, as well as how the MiX lands will interface with nearby residential land uses, parks and schools.

It is expected that the overall concept will be refined as development proposals come forward for the various pieces of property that collectively make up the future employment area within the City. It is important through these processes to ensure that various resource interests are taken into account and conserved as appropriate.

2.2 Need for a cultural heritage strategy

Given the number of identified cultural heritage resources located within the MiX lands and the various types of property ownership, the City of Markham identified the need to develop a strategy and overall advice as it relates to the conservation of these cultural heritage resources in the future. The strategy is required in order to identify the various interventions that could be undertaken for the cultural heritage resources, seeking to both balance conservation of the identified resources with the inclusion of the lands within a planned employment area.

Typically, there are two potential outcomes for integrating heritage buildings and structures within new development. These include either retaining the heritage resources where they are and integrating them into the proposed development, or removing / relocating the resources in some manner. The approach of the study team was to evaluate each heritage resource (or set of resources), and provide a recommended strategy to move forward with based on an economic analysis, land use / compatibility, heritage conservation factors, feasibility of adaptive reuse, and impact on cultural heritage resources.

This analysis will provide the basis and direction for the final recommendations of the team for Council to pursue as the area is developed over time. A more in-depth analysis of conservation options was undertaken for the City-owned lands within the MiX, given that additional information was known related to matters such as building condition and rehabilitation costs.

PART II Cultural heritage resource background

3.0 Overview

The initial study area identified in the City of Markham Request for Proposals included a total of nine properties to be studied, including two properties owned by the City, one property owned by the Region of York, and six privately-owned properties. Through early consultation with City staff, two additional City-owned properties were added to the scope of the project, and the Region of York property was removed from the study. The two additional City-owned properties were located outside the initial MiX study area, but recommendations were still desired related to future cultural heritage resources on the properties. The Region of York property formerly contained a barn, which had since been approved for removal by the time the project initiation meeting occurred.

The following table identifies the study area properties and their current heritage status:

Table 1: *Study area property summary*

Ref. #	Address	Information	Heritage Status	Ownership
#1	2780 19th Avenue	Alfred Read Farmhouse (c1855)	Listed (Group 2)	City of Markham
#2	3010 19th Avenue	SS #7 (c.1902)	Designated	Private
#3	3270 19th Avenue	Doner House (c.1881)	Listed (Group 2)	Private
#4	3490 19th Avenue	Gormley-Wideman House and Barn (c.1855 / c.1902)	Listed (Group 1)	Private
#5	3565 19th Avenue	Lewis-Jarvis House and Barn (c.1870/c.1900)	Listed (Group 2)	City of Markham
#6	11251 Woodbine Avenue	Hopper House (c.1855)	Listed (Group 2)	Private
#7	11242 Warden Avenue	Summerfeldt-McKay House (c.1835/c.1875)	Listed (Group 2)	City of Markham
#8	11172 Warden Avenue	Clayton School – SS#12 (c.1874)	Designated	Private
#9	11091 Warden Avenue	John G. Mustard Farmhouse (c.1845)	Listed (no Group #)	City of Markham
#10	3450 Elgin Mills Road	Hilts-Ford House (c.1850/1875)	Listed (Group 2)	Private

A map depicting the resources within the study area is included as **Figure 3** on the following page.

Figure 3: *Study Area cultural heritage resources (source: MHBC)*

4.0 Cultural heritage resource inventory

In order to develop an understanding of each of the properties within the study area, members of the project team reviewed background information provided by the City of Markham and also visited the properties in order to assess the current condition and features. Permission was sought (and obtained) from nearly all property owners to visit the properties, and in many cases the property owners or their representatives joined the team on site visits. Where permission was not obtained to visit properties, the initial assessment was conducted from the public road right-of-way.

Each property within the project study area is protected to some extent under the *Ontario Heritage Act*, either through designation under Part IV of the *Act*, or listed on the City of Markham Heritage Register. As such, thorough historical research had previously been undertaken by Heritage Markham and City of Markham Heritage Planning staff. The project team reviewed the historical information available, and utilized it as important background information.

4.1 2780 19th Avenue

The subject lands are located on the East Half Lot 31, Concession 3 (Township of Markham), and are approximately 100 ac (40.5 ha) in area. The subject lands contain agricultural fields and the remains of a farm building cluster.

Historical overview

The Alfred Read Farmhouse is located on the east half of Lot 31, Concession 3, Markham Township. The house is a 1 ½ storey brick farmhouse on a fieldstone foundation that provides a full basement. Alfred Read married Isabelle Pollock, they had three children Thomas, Charles and Alice. The Alfred Read House is a representative example of a mid-19th century Southern Ontario farmhouse rendered in the vernacular Georgian architectural tradition, with Classic Revival design influences. The rectangular plan, symmetry and formality in the placement of doors and windows, low-pitched gable roof and 6 over 6 windows belong to this long-lasting architectural tradition based on British and American precedents from the 18th century *(Source: Markham Heritage Register)*.

Site review notes

The subject lands contain a vacant farmhouse with a driveway leading to 19th Avenue. The remains of a barn, former driveway and vegetation exist in the yard areas around the house. A stream traverses the property in a north-south direction to the east of the building cluster.

The significance of the property relates to built resource and architectural features. Although some remains of landscape context remain (e.g. overgrown driveway), much of the pattern associated with agricultural past has been altered or removed. The fields are not significant.

Building condition appears fair, but some integrity has been lost. Some repairs are required in order to secure the building envelope, such as re-securing door and window openings and ensuring integrity of the roof.

4.2 3010 19th Avenue

The subject lands are located on Part Lot 31, Concession 4 (Township of Markham), and are approximately 1 ac (0.4 ha) in area. The subject lands contain a former schoolhouse.

Historical overview

The first schoolhouse serving School Section No. 7 was located on Lot 30, Concession 4, at the south east corner of present day Woodbine and 19th Avenues. School section No. 7 served the community of northern Victoria Square and also Gormley's Corners, a crossroads hamlet named for James Gormley in 1854. Interestingly, Gormley was an early teacher at S.S. No. 7, and became Gormley's first Post Master, as well as a store-keeper and auctioneer. The school was built in the midst of a thriving community of Pennsylvania-German families of the Tunker faith, an Anabaptist denomination related to the Mennonites. By 1860, the location of the schoolhouse serving School Section No. 7 had moved north and across the road to the south west corner of the John Steckley farm on Lot 31, Concession 4. The quarter-acre parcel where the school stood was later purchased by the Trustees of S.S. No. 7 from Christian Steckley in 1869. In 1874, an additional quarter acre was purchased to expand the school site. In 1902, the present brick schoolhouse was constructed to replace an earlier building. Another classroom, a flat-roofed frame wing, was added after the Second World War. Since that time, the school was closed along with many other rural schools when students began to be bussed to larger, central school facilities. (Source: Markham Heritage Register)

Site review notes

The schoolhouse on the property faces 19th Avenue and is accessed via a driveway near the main entrance to the building. Low vegetation is located around the building, and surrounding the small field to the north of the building.

Significance relates to built resource and architectural features present in building. No landscape features were identified in research report or as a result of site visit.

Building condition is good overall and the roof appears to have recently been repaired. Minor repairs needed to secure building envelope, such as re-securing the rear door to prevent further access.

4.3 3270 19th Avenue

The subject lands are located on West Part Lot 31, Concession 4 (Township of Markham), and are approximately 0.5 (0.2 ha) ac in area. The subject lands contain a rural dwelling.

Historical overview

This modestly-scaled rural dwelling was constructed on the west part of Markham Township Lot 31, Concession 4, on a half-acre parcel sold by John and Susan Doner to Mary Doner in 1881. Mary was Susan Doner's sister. She was married to Josephus Doner, a carpenter, joiner and miller by trade. Josephus Doner died and Mary married Philip Macklem, a farmer of Irish descent, in 1886. In 1914 the property was sold to Thomas S. Doner, a son of the John and Susan Doner. Thomas Doner was a minister in the Tunkard church. He and his wife Cora later moved to Clarence Centre, Erie County, in New York State, where they were living when they sold their Markham property in 1919. The house was originally one storey. The side wing may have contained the summer kitchen, woodshed and perhaps served as Josephus Doner's workshop. The centre gable is a relatively recent addition (Source: Markham Heritage Register).

Site review notes

The dwelling on the property is located near the edge of the road allowance for 19th Avenue, with a driveway located to the east of the dwelling. An addition is located on the eastern side of the building. A treeline surrounds the property on three sides and provides a buffer from surrounding land uses. A small outbuilding is located to the north of the dwelling.

Significance relates to built resource and architectural features present in building. No significant landscape features were identified in research report or as a result of site visit.

Building condition appears good overall, although close inspection was not undertaken due to access restrictions. Building appears to be currently occupied.

4.4 3490 19th Avenue

The subject lands are located on the East Part of Lot 31, Concession 4 (Township of Markham), and are approximately 100 ac (40.5 ha) in area. The subject lands contain agricultural fields and a farm building cluster.

Historical overview

This rural dwelling, with its associated barns and other outbuildings, is located on the east part of Markham Township Lot 31, Concession 4. The 200 acres of Lot 31, Concession 4 were granted by the Crown to Elizabeth Fisher, who received the patent in 1804. She did not reside on the property. According to William Berczy's 1803 census of Markham Township, the occupant was Christian Steckley and his family. The Steckleys were Pennsylvania-Germans, part of a significant group of Mennonite and Tunker families that came to Markham in the early years of the 19th century. Jacob Fisher, likely Elizabeth's husband, sold the property to Christian Steckley in 1805. In 1816, Christian Steckley Sr. sold to his son, Christian Steckley Jr. Christian Steckley Jr. married Elizabeth Hiltz in 1801. One of their sons, John Steckley, inherited the lot from his father in 1865 and that same year, sold the east 100 acres to his son-in-law, James Gormley, who had married his daughter, Margaret about 1850. James Gormley was an Irish immigrant. He is mainly remembered as the founder of the hamlet of Gormley's Corners (later known simply as Gormley) at Woodbine Avenue and the Stouffville Road, now within the political boundaries of the Town of Whitchurch-Stouffville. James Gormley was a former school-teacher that became a store-keeper and auctioneer. He was Gormley's first post master, serving from 1851 to 1876, and served as a justice of the peace. He initially lived in the community that is named for him prior to relocating to this property between the 1851 and 1861 census to a new brick farmhouse constructed c.1855. Notwithstanding the varied nature of James Gormley's career, his occupation given in the 1861 census was simply "farmer." James Gormley sold the farm to Jacob Wideman, a Mennonite minister, in 1882. The Wideman family were part of the local Pennsylvania-German community. They had come to Markham in 1805. According to a township directory of 1892, several of Jacob Wideman's family lived on Lot 31, Concession 4: Adam, Simeon, Samuel, and Daniel. In 1897, the main portion of the farm was sold to Samuel Wideman, a bishop in the Mennonite church. He was married to Elsie Hoover. In 1914, the farm was sold to their son, Roy Wideman, who was married to Elsie Steckley. In 1969, ownership was transferred to a corporation called Wideview Farms Ltd. In 1997, a gathering of over 150 members of the Wideman family was held on the farm to mark the end of over a century of occupation by the family. The 2017 owner remained Wideview Farms Ltd. (Source: Markham Heritage Register).

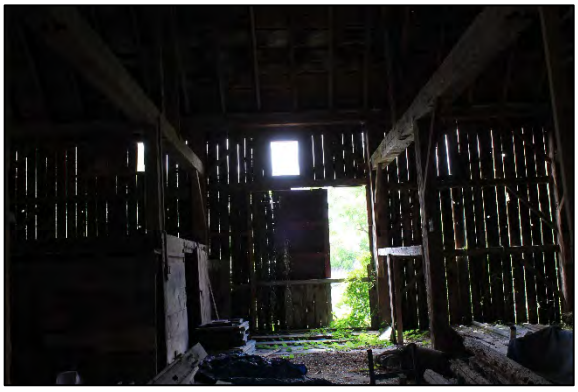
Site review notes

The subject lands contain a vacant farmhouse and collection of agricultural buildings, accessed via a long driveway leading from 19th Avenue. The former yard areas surrounding the home are overgrown and vegetation is growing up around the house. The outbuildings include a barn complex, storage shed, and concrete block silo. The driveway is framed with trees on both sides, and a row of trees shield the northern edge of the building cluster. A small pond is located near 19th Avenue.










Significance relates to built features (house, barns, outbuildings), as well as landscape features. A prominent lane leads towards buildings from road, the house is situated on a rise of land, and the layout of the collection of buildings appears to remain in original form. Fields are not significant and have been altered over the years to suit changing agricultural needs.

Condition of house appears fair-poor but is deteriorating, and some integrity is starting to erode. Some repairs are required in order to secure the building envelope. Condition of outbuildings appears good overall. General grounds upkeep required in area around house.

4.5 3565 19th Avenue

The subject lands are located on the East Half of Lot 30, Concession 4 (Township of Markham), and are approximately 100 ac (40.5 ha) in area. The subject lands contain agricultural fields and a farm building cluster.

Historical overview

The Lewis-Jarvis House was constructed on the east part of Markham Township Lot 30, Concession 4, c.1870. Lot 30, Concession 4 was leased from the Crown by Christian Steckley, a minister of the Tunkard Church (later known as the Brethren in Christ), in 1803. Steckley was a member of a significant group of Pennsylvania German families that came to Markham in the early years of the nineteenth century. He was appointed bishop of the Heise Hill church in 1808. One of his daughters, Barbara, married Richard Lewis (1802-1849). Richard Lewis received the Crown patent for the full 200 acres in 1843. He died while blasting stone for the foundation of a new brick farmhouse. This farmhouse was completed by the remaining family members in the mid-1850s. By the 1870s, there was a second farmstead on the Lewis property (the location of 3565 Nineteenth Avenue), occupied by Richard Lewis Jr. and his wife, Jane Gilles Lewis. Richard Lewis Jr. died in 1873. His widow moved to Toronto and rented out the farm to tenants until it was sold to Robert Francey in 1897. Francey sold to William J. N. Street in 1914. Based on the architectural details and materials of the farmhouse as it exists today, it appears that Street remodelled the old building and clad it in Lake Wilcox brick, a light grey cement brick produced in Oak Ridges in the early 1900s. A new barn complex was likely built about the same time. In 1920, the farm was sold to Herbert Jarvis. The property was farmed by Herbert Jarvis's son, Marcus, until 1986 (Source: Markham Heritage Register).

Site review notes

The subject lands contain a vacant farmhouse and collection of agricultural buildings, accessed via a driveway leading from 19th Avenue. The former yard areas surrounding the home and former barnyard areas are overgrown. The outbuildings include two barns and a smaller outbuilding located south of the main building cluster. The driveway is framed with trees on both sides, and a row of trees shields the western edge of the building cluster.






Significance relates to the built features (house, barn, outbuildings), as well as landscape features. A tree-lined laneway leads from the road, and the layout of the

collection of buildings appears to remain in original form. Fields are not significant.

Condition of the house appears to be fair-poor, and some repairs have been identified to secure building envelope. The barn and other outbuildings appear to be fair condition. General grounds upkeep is required.

4.6 11251 Woodbine Avenue

The subject lands are located on the West Half of Lot 29, Concession 4 (Township of Markham), and are approximately 100 ac (40.5 ha) in area. The subject lands contain agricultural fields and the remains of a farm building cluster.

Historical overview

The David and Caroline Hopper House was constructed as the home of David Hopper, a successful farmer of English origin, and his wife, Caroline Pingle, a member of a Berczy settler family. David Hopper purchased the west half of Lot 29, Concession 4 in 1847. Initially, the family occupied a hewn log house that was likely constructed by Marcus Schell, a previous owner from 1807 to 1842. Between the time of the 1851 and 1861 census, the Hopper family were successful enough to be able to have a fine stone farmhouse constructed on the property to replace the earlier dwelling. The farm remained in the ownership of Hopper family descendants until 1919. The David Hopper House is an excellent example of a mid-19th century fieldstone farmhouse in the vernacular Georgian architectural tradition. With its window and door openings framed with quoin-like brick surrounds, the house exhibits a distinctive British stylistic influence. The stonework is exceptionally well-done. Coursed, multi-coloured random rubble consisting of basalt (black), granite (grey and red) and limestone (white or grey) has been split, partially squared, and rock-faced on the front and gable-end walls, with particular care taken with stonework pattern on the front wall. The gable-end kitchen wing is a noteworthy feature for the reason that typically kitchen wings in a dwelling of this style were located at the rear of the main block (Source: Markham Heritage Register).

Site review notes

The driveway accessing the dwelling and former farm building cluster leads approximately 800 metres from Woodbine Avenue. The property contains a vacant farmhouse and former barn site. The driveway is framed with vegetation on both sides, and crosses two watercourses as it leads to the dwelling. Some large trees remain around the house and former building areas.




Significance relates to built resource and architectural features. Although some remains of landscape context remain (e.g. overgrown driveway, tree clusters), much of the pattern associated with agricultural past has been altered or removed. The field areas are not significant.

Overall condition of the house is poor, although stonework and building foundation appear sound. Repairs are required to secure building envelope.

4.7 11242 Warden Avenue

The subject lands are located on the East Half of Lot 29, Concession 4 (Township of Markham), and are approximately 100 ac (40.5 ha) in area. The subject lands contain agricultural fields and the remains of a farm building cluster.

Historical overview

This classic Ontario farmhouse stands on the east half of Markham Township Lot 29, Concession 4, north-east of the historic crossroads community of Victoria Square. Mark or Marcus Schell received the Crown patent for this lot in 1807. He was one of four German-speaking brothers who emigrated from New York State to Canada around the

turn of the 19th century. He sold the eastern 100 acres to John Crow the same year that he received the patent. David Crown, possibly John's son, sold to George Henry Summerfeldt in 1830. The Summerfeldts were a Berczy settler family. George Henry Summerfeldt lived on the family homestead on Lot 23, Concession 6, and purchased this property for his son, John Henry Summerfeldt. The first phase of construction of the existing farmhouse on the farm, constructed of adobe brick, is estimated to have been built by the Summerfeldts c.1835. This is one of only three adobe brick buildings remaining standing in Markham, the others being the first phase of the Heintzman House in Thornhill, and the Eckardt-Stiver Cottage in Unionville. John H. Summerfeldt and his daughter Ellen died tragically in 1870 when their horse and carriage plunged into the mill pond in Buttonville. The remaining family members moved to Unionville, and lived at a property now known as 128 Main Street. In the mid-1870s, George McKay purchased the property though public auction. He was an English immigrant of Scottish ancestry that came to Canada in 1855 and was married Catherine Cook, born in Ontario. The McKay family improved the farmhouse by increasing the height of the second storey to create its existing form. George and Catherine McKay's descendants were the owners until 1962 (Source: Markham Heritage Register).

Site review notes

The subject lands contain a vacant farmhouse and a driveway located along the north side of the house. The area of the former farmyard is grassed and there are no remains of the barn complex or other outbuildings.

Significance relates to built resource, construction type (possibly mud-brick based on available historical information), and architectural features. Very little remains of the agricultural past of the property. No landscape features were identified in research report or as a result of site visit. The field areas are not significant.

Condition of house appears to be fair-poor, and some repairs have been identified to secure building envelope. General grounds upkeep is required.

4.8 11172 Warden Avenue

The subject lands are located on the East Half of Lot 26, Concession 4 (Township of Markham), and are approximately 1 ac (0.4 ha) in area. The subject lands contain a former schoolhouse.

Historical overview

The first schoolhouse serving this community was located at the north-west corner of Warden Avenue and Elgin Mills Road. It was a frame building situated on a small piece of land on the Godfrey Hilts farm on the east half of Lot 26, Concession 4. This school, east of Read's Corners/Victoria Square, was included on a list of Common Schools in Markham Township dated 1834. At that time, the teacher was John Peacock. In 1874 a new school site was purchased by the trustees of School Section No. 12 from Paul Schell. A brick schoolhouse in the Gothic Revival style was constructed at this time. This schoolhouse is one of the few in Markham Township to have been designed in the Gothic Revival style. It is noteworthy for its elaborate polychromatic brickwork. Historically, it was known as the Clayton School. Leonard Klinck was a noted teacher at this school, which was attended by four generations of the Wideman family. The school closed in 1965, and was converted to a residence by the Reverend John C. Cooper and his wife, Helen in 1967. The Coopers were careful to retain the original character of the

old schoolhouse in their residential conversion. They remained the owners until 1980 (Source: Markham Heritage Register).

Site visit notes

The subject lands contain a former schoolhouse that has been converted into a single-detached residential dwelling. An addition is located to the rear of the dwelling, and leads to deck/patio areas located on the north side of the building. The schoolhouse is accessed via a curved driveway from Warden Avenue, which frames views of the building. The building is surrounded by treelines around each side, and several large trees are located on the property.

Significance relates primarily to built resource, as detailed in designation report. Landscape features consist of a prominent view from Warden Avenue, as well as some notable large trees which are also found in historic photos of the property.

Building condition is very good, with only minor cosmetic repairs identified. The house is currently occupied.

4.9 11091 Warden Avenue

The subject lands are located on the West Half of Lot 28, Concession 5 (Township of Markham), and are approximately 100 ac (40.5 ha) in area. The subject lands contain agricultural fields and the remains of a farm building cluster.

Historical overview

The John G. Mustard House is of historical and associative value as the former farmhouse of John G. Mustard (1810-1883), a son of Scottish immigrant James Mustard, who arrived in Markham Township about 1801. James Mustard had a distinguished military career, and served in defense of Upper Canada during the War of 1812. In 1817, while he was captain of the local militia, he reported on the status of mill development on the Rouge River. James Mustard married Elizabeth Gordon. John G. Mustard was one of their four sons. The quality of the family home, constructed c.1845 on the property purchased in 1839, is an indication of his success as a farmer.

The John G. Mustard House is an excellent, well-preserved example of a mid-19th century farmhouse reflecting the vernacular Georgian architectural tradition, with the influence of the Classic Revival seen in the robust treatment of the brick corner pilasters and the bold Classical mouldings of the cornice. The building is noteworthy for its 12 over 8 and 6 over 6 windows, its 6 panelled “cross and bible” front door with multi-paned transom light above, and its fieldstone kitchen wing. A bellcast roofed veranda supported on wood treillage is a period-appropriate addition of 1980.

The John G. Mustard House is one of three historic farmhouses remaining in the municipality that are connected to the Mustard family of Markham Township. All three are stylistically similar, conservatively-detailed and of solid brick construction. Associated with the former farmhouse is a stone milk house trimmed with red brick, echoing the detailing of the stone kitchen wing of the dwelling. It likely dates from the same time period.

Site review notes

The subject lands contain a house accessed via a long driveway from Warden Avenue, which appears to be in the original location. The property once contained a farm complex, but remains of the agricultural past have been removed. A pond is located on the property, and remains of a second home site are present to the north of the home. Agricultural field pattern has been altered to accommodate changing farming needs.




Significance relates primarily to built resources (house, small outbuilding) and architectural features. Landscape features consist of vegetation groupings near house and prominent views from Warden Avenue. Much of the pattern associated with agricultural past has been altered or removed. Fields are not significant.

Building condition is very good. House is currently occupied.

4.10 3450 Elgin Mills Road

The subject lands are located on the East Half of Lot 26, Concession 4 (Township of Markham), and are approximately 100 ac (40.5 ha) in area. The subject lands contain agricultural fields and a farm building cluster.

Historical overview

The Hilts-Ford House is located on the east half of Markham Township Lot 26, Concession 4, east of the crossroads hamlet of Victoria Square. Henry Schell received the Crown patent for the original 200-acre property in 1802. Henry Schell was one of three brothers who came from New York State to Markham in the late 1790s. The Schells are associated with the Pennsylvania-German community that formed the

second wave of German-speaking settlers in Markham. The crossroads of Elgin Mills Road and Warden Avenue was historically known as Schell's Corners due to the cluster of Schell properties and families in that vicinity. In 1808, Henry Schell sold the eastern 100 acres of Lot 26, Concession 4 to Jacob Godfried Hilts, also associated with the Pennsylvania-German community of Markham Township. Similar to the Schells, the Hilts/Hiltz family came from New York State. Jacob Hilts was born in Herkimer County, New York. He was listed as residing on this property in Walton's directory of 1837, the same year he passed away. The farm was willed to Godfrey Hilts, the only son of Jacob and Susannah (Davy) Hilts. According to the 1851 census, the family resided in a frame dwelling. By the time of the 1861 census, their residence was described as a one-and-a-half storey frame house. The Hilts house may form the earliest phase of construction of the existing farmhouse at 3450 Elgin Mills Road East. Godfrey Hilts died in 1862. The farm was rented to tenant farmers until 1875, when it was sold to William Ford. Based on the steep centre gable and medium roof pitch of the farmhouse at it currently exists, it appears that William Ford may have updated the old Hilts house with a steeper roof pitch and centre gable to gain more headroom on the second floor. William Ford, an English immigrant, was a farmer. His wife, Ann Boynton, was born in Ontario. William Ford sold to Walter Scott of Whitchurch Township in 1885. The farm was occupied by one of the sons of Walter and Margaret (Ferguson) Scott. In 1892, Walter Scott Jr. (Walter Scott II) became the owner of the family farm, where he resided with his wife, Elizabeth McKonochie, their children, and his wife's widowed mother. Robert McKonachie, a school teacher, was also in the household (1891 census). The family were of Scottish descent and were Presbyterians. One of their children, Walter Scott III did not pursue a career in farming but became a noted educator in Richmond Hill. The Scott family owned the farm until 1927, when it was sold to John Snider. The Snider family were the owners until 1961.The property later became part of Romandale Farms (Source: Markham Heritage Register).

Site review notes

The subject lands contain a former farmhouse and a barn complex, accessed via a long driveway leading from Elgin Mills Road. Remains of an orchard are located in the front yard, generally south and slightly west of the dwelling. A large barn is located to the north of the dwelling. The driveway is framed with trees on both sides, and a row of trees shields the western edge of the building cluster. A stream branches across the property just north of the barn and into the field areas. The field patterns have been altered in order to accommodate changing agricultural needs.




Significance relates to the built features (house, barn), as well as landscape features. A tree-lined laneway leads from the road, orchard remnants remain in front yard, and vegetation groupings are located west and north of house. The layout of the collection of buildings appears to remain in the original form. The field areas are not significant.

Condition of house appears to be good. Outbuildings also appear to be in good condition, although close inspection was not undertaken due to access restrictions.

5.0 Existing policy framework

The following section provides an overview of the applicable Provincial planning policy framework related to heritage resource conservation.

The Planning Act

The *Planning Act* makes a number of provisions respecting cultural heritage, either directly in Section 2 of the *Act* or Section 3 respecting policy statements and provincial plans. In Section 2, the *Planning Act* outlines 18 spheres of provincial interest that must be considered by appropriate authorities in the planning process. One of the intentions of the *Planning Act* is to "encourage the co-operation and co-ordination among the various interests". Regarding cultural heritage, Subsection 2(d) of the Act provides that:

> *The Minister, the council of a municipality, a local board, a planning board and the Municipal Board, in carrying out their responsibilities under this Act, shall have regard to, among other matters, matters of provincial interest such as,...*
>
> *(d) the conservation of features of significant architectural, cultural, historical, archaeological or scientific interest;*

The *Planning Act* therefore provides for the overall broad consideration of cultural heritage resources through the land use planning process

The Ontario Heritage Act and Ontario Heritage Act

The *Ontario Heritage Act,* R.S.O, 1990, c.0.18 remains the guiding legislation for the conservation of significant cultural heritage resources in Ontario. The criteria provided within Regulation 9/06 of the *Ontario Heritage Act* outline the mechanism for determining cultural heritage value or interest. *Ontario Regulation 9/06* prescribes that a property may be designated under section 29 of the Act if it meets one or more of a set of specific criteria.

The Province has published several resources containing information related to cultural heritage resources, and compiled the information into the Ontario Heritage Toolkit. This compilation is a collection of documents authored by the Ministry of Culture (now the Ministry of Heritage, Sport, Tourism and Culture Industries), which provide guidance related to a variety of cultural heritage planning matters. The documents contained within the Heritage Resources in the Land Use Planning Process compilation have specifically

been referenced in the preparation of this report, to ensure consistency with best practices.

The Provincial Policy Statement

In support of the provincial interest identified in Subsection 2 (d) of the *Planning Act*, and as provided for in Section 3, the Province has refined policy guidance for land use planning and development matters in the *Provincial Policy Statement* (PPS). The current PPS came into effect on May 1st, 2020, and applies to all decisions made with respect to planning matters. The PPS is intended "to be read in its entirety and the relevant policy areas are to be applied to each situation". This provides a weighting and balancing of issues within the planning process. When addressing cultural heritage planning, the PPS provides for the following:

> *2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.*
>
> *2.6.3 Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except 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.*
>
> *Significant*: *e) in regard to cultural heritage and archaeology, resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the Ontario Heritage Act.*
>
> ***Built heritage resource: means a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community. Built heritage resources are located on property that may be designated under Parts IV or V of the Ontario Heritage Act, or that may be included on local, provincial, federal and/or international registers.***
>
> ***Cultural heritage landscape: means a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Cultural heritage landscapes may be properties that have been determined to have cultural heritage value or interest under the Ontario Heritage Act or have***

been included on federal and/or international registers, and/or protected through official plan, zoning by-law, or other land use planning mechanisms.

Conserved: means the identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural heritage value or interest is retained. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment, and/or heritage impact assessment that has been approved, accepted or adopted by the relevant planning authority or decision maker. Mitigative measures and/or alternative development approaches can be included in these plans and assessments.

The above guidance related to cultural heritage resources provides an overall context for local planning and heritage conservation matters. The City of Markham Official Plan builds on the Provincial guidance, in order to guide cultural heritage conservation efforts for both private and public landowners. This policy direction, combined with the overall policy framework providing for future employment land uses within the MiX has provided guidance to the project team.

6.0 Approaches to conservation

6.1 Adaptive reuse examples

Adaptive reuse offers an opportunity to accommodate a range of needs and functions. If planned and applied appropriately, adaptive reuse can provide an attractive approach to utilizing decommissioned, obsolete, and aging heritage infrastructure as surrounding markets evolve and development pressure intensifies. The adaptive reuse option is especially attractive in select cases where the costs of restoring and repurposing an aging or obsolete building are lower than the financial expenditures of demolition or reconstruction, or that the future rewards (i.e. increased value, higher rent, etc.) support the additional efforts leading toward long-term viability.

While residential cultural heritage resources cannot be recovered to their original use within designated employment areas, there are many successful examples of resources being repurposed for more contemporary non-residential functions, including: restaurants, bars, retail stores, spas, boutique hotels, cultural centres, daycares, private schools, professional offices, social/fraternal clubs, and museums, among others. While in some instances preserving historic buildings necessitated relocation, structures originally built in a rural context can often be successfully adapted in place when the surrounding areas develop.

The following section outlines some benchmark examples of adaptive reuse projects that have been successfully integrated within employment areas across the GTHA. These examples have been provided to help demonstrate the market's capacity to successfully reinterpret assets which have important connections to the past.

955 Century Drive – City of Burlington

- **Heritage Designation:** National Register of Historic Places
- **Historic Function**: Residential Farmhouse
- **Current Use**: Kennel (pet care).

Key Points

- Resource was restored and retained in-situ on original property.

- Successful integration is due to the resource being located on a large lot which allows for property and tenant flexibility. Accommodates parking, accessory buildings, storage areas, and a 10,000 square foot dog play area.
- While it is successfully integrated, the road alignment could have been better designed to improve the farmhouse's connection to the street, giving it a more prominent place within the industrial subdivision.

955 Century Drive (Source: urbanMetrics)

3990 14th Avenue (Sinclair Hagerman House) – City of Markham

- **Heritage Designation:** *Ontario Heritage Act:* Individual
- **Historic Function**: Residential Farmhouse
- **Current Use**: Daycare and Early Learning Centre

Key Points

- Resource was restored and retained on original property.
- Resource is situated at a high-profile intersection. The property benefits from excellent access and visibility from the street. The corner location of the resource allowed for the remaining property to be developed with large-scale industrial uses. As the resource is oriented towards the street, it is not as negatively impacted by the surrounding industrial uses.
- The resource would have benefited from a larger lot. While the current property can accommodate the necessary floor space, parking, and outdoor play area for the daycare – it is potentially limiting for a future tenant that may have different and more land-intensive requirements.


3990 14th Avenue (Source: urbanMetrics and Region of York Heritage Properties Gallery)

1 Chris Hadfield Way (Grand Trunk Railroad Station) – Town of Milton

- **Heritage Designation:** *Ontario Heritage Act*: Individual
- **Historic Function**: Rail Station
- **Current Use**: Tourism and Information Centre

Key Points

- Resource was restored and retained in-situ on original property. As the only remaining original Milton railway station, the building is considered a landmark of distinct value and identity for the Town of Milton.
- While the resource is not situated in an area of the property that has high street visibility, it is strategically located within a municipal open space: Chris Hadfield Park. Municipal parks provide an excellent urban fabric for conserving a significant cultural heritage resource as they are protected from encroaching industrial development pressure and can be easily accessed and appreciated by the community.
- As the resource was originally a rail station and represents historic transportation infrastructure, any relocation of the structure would have negatively impacted its landmark context. As the structure was limited to being retained in-situ, it was not an ideal candidate for a commercial tenant. The current use as a municipal information and tourism centre was an excellent solution for successfully occupying and rejuvenating the restricted resource.


1 Chris Hadfield Way (Source: urbanMetrics and Google Maps Open Source Photo Gallery)

1045 Elgin Mills Road East (Eyer Wideman house), Richmond Hill

- **Heritage Designation:** *Ontario Heritage Act*: Individual
- **Historic Function**: Eyer Wideman house and homestead
- **Current Use**: Youth Centre

The Eyer Wideman Youth Centre in Richmond Hill was an award-winning project where the existing historic home was extensively adapted to allow accessibility and modern building systems as a centrepiece of the Eyer Homestead Park. The building now hosts youth programs and events while providing a games room, lounge, computer room and kitchen as amenities to benefit the community.

1045 Elgin Mills Road (Source: George Robb Architect)

11715 Leslie Street (Phyllis Rawlinson Park), Richmond Hill

- **Heritage Designation:** *Ontario Heritage Act*: Individual
- **Historic Function**: Shaw House / George Forster House
- **Current Use**: interpretive centre, community meeting space

At Phyllis Rawlinson Park in Richmond Hill, the former Shaw house was reconstructed following dismantling and warehousing, and has been reincarnated on its new site as the Robert Holland Interpretive Centre, a place for outdoor education and permanent interpretive displays. A sympathetic addition provides additional space and accessible washroom facilities.

Shaw House, Phyllis Rawlinson Park (Source: George Robb Architect)

In the same park is the George Forster House, a log structure with stone addition that has been updated to provide community meeting space as well as office space for Town staff. Among other improvements, the George Forster House received a new geothermal heating system and was made accessible at the ground floor.

George Forster House, Phyllis Rawlinson Park (Source: George Robb Architect)

56 Saddlebrook Court (formerly 710 Huron Road), Kitchener

- **Heritage Designation:** *Ontario Heritage Act*: Individual
- **Historic Function**: Grant farmhouse
- **Current Use**: Single-family home (restoration underway)

Another strategy is shown in the historic house at 710 Huron Road in Kitchener. This home was on a site slated for development as a subdivision, but was in an awkward location for the new plan, grading and site layout. George Robb Architect was consulted on the stabilization of the structure and on its relocation within the same site, where it is to be restored and added on to for resale as a residence. The building has been moved to the new location, new basement constructed, and construction is underway.

710 Huron Road, Kitchener (source: MHBC and George Robb Architect)

PART III Preliminary assessment

7.0 Property evaluation

7.1 Development of criteria

The project team developed an assessment methodology to consider the various criteria that could determine how a cultural heritage resource (or collection of resources) is integrated into the development of the future employment area. Criteria consider the following:

- Significance of cultural heritage resource, which considers if the resource significance includes a single built heritage feature (i.e. house) or if there are other buildings or landscape features that have significance as well.

- Condition or integrity of heritage resources, which considers how the overall heritage resource condition and integrity of the cultural heritage features may impact on feasibility of retention of relocation of a building.

- Relationship to business park concept plan, which considers where the heritage resources are in relation to other land uses within the business park concept. Locations adjacent to environmental features, at the periphery or near a road may factor in to how a resource is considered for future use. This also considers the need for mitigation such as setbacks from certain industrial use types.

- Candidate for re-location, which considers building factors such as structural soundness and size that would inform whether or not a building could be relocated. Location in relation to other planned land uses may also determine suitability to consider relocation.

- Impact of retention on business park use, which considers an investigation of the feasibility of the adaptive re-use of all of the structures, in particular the potential adaptive re-use of barns and other agricultural buildings. If buildings are to remain in residential use or transition to an office type use, this may impact feasibility of integrating into the future development.

- Economic impact considers the loss of potential employment lands, should one or more of the heritage resources remain as non-employment uses. Economic impact also examines relocation, including the cost to move, cost of land, cost of

a new foundation etc., in order to provide a comprehensive examination of the total costs / benefits of leaving a building in situ or relocating it.

The above criteria all inform what the potential outcome of recommendations to either leave a building or collection of resources in-situ, relocate the heritage resources, or remove the resources from the property.

7.2 Property evaluation

Table 2 on the following page summarizes the evaluation results based on the factors developed.

Table 2: *Study area property evaluation results*

Ref. #	Significance of resource	Condition / integrity	Relationship to concept plan	Candidate for re-location?	Impact of retention on future business park use	Economic benefit / impact of retention or relocation
#1	Significance relates to built resource and architectural features. Although some remains of landscape context remain (e.g. overgrown driveway), much of the pattern associated with agricultural past has been altered or removed. Fields not significant.	Building condition appears fair, but some integrity has been lost. Some repairs required to secure building envelope.	Located outside of planned business park area.	Yes, building is candidate for relocation. The home seems to be in fair condition structurally. City has approved relocation.	n/a – outside planned business park area	Unknown until plans for property are developed. Potential to be integrated into future redevelopment if not relocated.
#2	Significance relates to built resource and architectural features present in building. No landscape features identified in research report or as a result of site visit.	Building condition is good overall. Minor repairs needed to secure building envelope.	Located at periphery of business park area, adjacent to environmental features (Greenway System Under Study, unevaluated wetland). Separated from business park by environmental features.	Good candidate for re-location due to size and relatively small footprint. However, likely little benefit to move because of location at the periphery and near road.	Low impact. Small corner parcel at periphery of business park area. Building could be adaptively reused for office / commercial / restaurant and integrate with surrounding uses, or be converted to residential with low impact.	Low impact of retention. Building lends well to adaptive reuse.
#3	Significance relates to built resource and architectural	Building condition appears good overall, although	Located at periphery of business park area, in close	Building could be good candidate for relocation, but likely	Low impact. Small parcel located near road and	Low impact of retention. Building has several potential

	features present in building. No landscape features identified in research report or as a result of site visit.	close inspection was not undertaken due to access restrictions. Building is currently occupied.	proximity to environmental features (Greenway System).	not much benefit because of location at periphery and near road. Option could be explored to shift location to be immediately adjacent to environmental features.	environmental features. Building could be adaptively reused for office / commercial / restaurant and integrate with surrounding uses, or continue to be used for residential purposes with relatively low impact.	uses, in addition to current use.
#4	Significance relates to built features (house, barns, outbuildings), as well as landscape features. Prominent lane leads towards buildings from road, house situated on rise of land, and layout of collection of buildings appears to remain in original form. Fields are not significant.	Condition of house appears fair-poor but is deteriorating, and some integrity is starting to erode. Some repairs required to secure building envelope. Condition of outbuildings appears good overall. General grounds upkeep required in area around house.	Located at periphery of business park area, adjacent to environmental features (Greenway System, ORMCP, unevaluated wetland).	House could technically be good candidate for relocation, but would impact on heritage value due to significance of collection of built and landscape features. Other buildings are to be determined.	Low-medium impact. Buildings located near environmental features but set back from road. House and other buildings could be adaptively reused for a variety of purposes. May be some impact on range of business park uses if house were to be used for residential purposes again.	Low- medium impact of retention. Buildings (house and main barn) lend well to potential future adaptive reuse.
#5	Significance relates to the built features (house, barn, outbuildings), as well as landscape features. Tree-lined laneway leads from	Condition of house appears to be fair-poor, and some repairs have been identified to secure building envelope. The barn and other	Located within business park area, near proposed collector road network and adjacent to environmental	House could technically be good candidate for relocation, but would impact on heritage value due to significance of	Low-medium impact. Buildings located near environmental features and near road.	Low-medium impact of retention. Buildings (house and main barns) lend well to potential future adaptive reuse.

	the road, and the layout of the collection of buildings appears to remain in original form. Fields are not significant.	outbuildings appear to be fair condition. General grounds upkeep required.	features (Greenway System, unevaluated wetland).	collection of built and landscape features. Other buildings are to be determined.	House and other outbuildings could be adaptively reused for a variety of purposes. May be some impact on range of business park uses if house used for residential purposes again.	
#6	Significance relates to built resource and architectural features. Although some remains of landscape context remain (e.g. overgrown driveway, tree clusters), much of the pattern associated with agricultural past has been altered or removed. Fields not significant.	Overall condition of house is poor, although stonework and foundation appear sound. Extensive repairs required to secure building envelope including roof rebuilding and possible structural reinforcing.	Located within business park area, near environmental features (Greenway System, unevaluated wetland).	House is candidate for relocation, however stabilization would be required internally in order to prepare for move. Potentially little benefit to relocate, depending on setbacks required to nearby natural heritage features.	Medium impact. House located near environmental features. Building could be adaptively reused for office / commercial / restaurant and integrate with surrounding planned business park uses. Residential use not recommended due to location.	Medium impact of retention. Building would suit adaptive reuse, but location is not ideal.
#7	Significance relates to built resource, construction type (possibly mud-brick), and architectural features. Very little remains of agricultural past. No landscape features identified in research report or as a result	Condition of house appears to be fair-poor, and some repairs have been identified to secure building envelope. General grounds upkeep required.	Located at periphery of business park area, in proximity to proposed collector road network.	Good candidate for re-location due to size and relatively small footprint. However, likely little benefit to move because of location at the periphery and near road.	Low impact. House located near road and at periphery of business park area. Building could be adaptively reused for office / commercial / restaurant and integrate with surrounding uses, or be used for	Low impact of retention. Building lends well to adaptive reuse.

	of site visit. Fields not significant.				residential purposes again with relatively low impact.	
#8	Significance relates primarily to built resource, as detailed in designation report. Landscape features consist of prominent view from Warden Avenue, as well as some notable large old trees which are also found in historic photos of the property.	Building condition is very good, with only minor cosmetic repairs identified. House is currently occupied.	Located at periphery of business park area, in proximity to proposed collector road network.	House could technically be good candidate for relocation, but would impact on heritage value due to significance of landscape features. However, likely little benefit to move because of location at the periphery and near road.	Low impact. Small parcel located near road and at periphery of business park area. Building could be adaptively reused for office / commercial / restaurant, or continue to be used for residential purposes with relatively low impact.	Low impact of retention. Building lends well to adaptive reuse.
#9	Significance relates primarily to built resources (house, small outbuilding) and architectural features. Landscape features consist of vegetation groupings near house and prominent views from Warden Avenue. Much of the pattern associated with agricultural past has been altered or removed. Fields not significant.	Building condition is very good. House is currently occupied.	Located outside of planned business park area.	House could technically be good candidate for relocation, but would impact heritage value. Further assessment required as future plans develop.	n/a – outside planned business park area	Unknown until plans for property are developed. Potential to be integrated into future redevelopment.

#10	Significance relates to the built features (house, barn), as well as landscape features. Tree-lined laneway leads from the road, orchard remnants remain in front yard, and vegetation groupings are located west and north of house. Layout of the collection of buildings appears to remain in original form. Fields are not significant.	Condition of house appears to be good. Outbuildings also appear in good condition, although close inspection was not undertaken due to access restrictions.	Located within business park area, near environmental features (Greenway System, unevaluated wetland).	House could technically be good candidate for relocation, but would impact on heritage value due to significance of collection of built and landscape features. Other buildings are to be determined.	Low-medium impact. Buildings located near environmental features but set back from road. House and other buildings could be adaptively reused for a variety of purposes. May be some impact on range of business park uses if house to be used for residential purposes.	Low impact of retention. Building located periphery and also lends well to adaptive reuse.

8.0 Real property and financial implications

As part of the North District Cultural Heritage Resource Strategy, urbanMetrics has been asked to determine the potential impact of cultural heritage resources on the realization of the MiX District; review the implications of retaining the resources with a variety of conservation approaches; and explore the impacts on the area's future land value. urbanMetrics undertook case study research of cultural heritage resources across the GTHA that have been retained and successfully integrated into emerging employment land developments.

8.1 Context

Intended to be "the next frontier" for innovation and employment growth within Markham, the North District's Future Employment Area will be developed by the private sector for a wide range of non-residential uses – including prestige office, industrial, manufacturing, innovation hubs, and commercial amenities. Much of the Future Employment Area is located within the MiX District, which is comprised of nearly 2,000 acres of land, intended to attract development and investment interest from global technology companies looking to tap into the GTA's reputation as a leading North American tech talent hub.

Within the MiX District, the City of Markham owns over 400 acres, and anticipates the realization of this innovation district will hinge on various public-private partnerships.

The City of Markham is now at a crossroads between how best to preserve the ten cultural heritage resources, while also achieving its corporate-wide objectives relating to Employment Areas and realization of the MiX District. Clearly, these lands, and many of the heritage resources that define them, represent an interesting juxtaposition between the Markham's rural agricultural legacy, and its future ambitions to become a global leader in mobility, innovation, and design.

8.2 Markham's Future Employment Area

The City of Markham Official Plan includes policies that guide future development and manage growth. The MiX District is located within an area that the City has designated as a "Future Employment Area". The City of Markham Official Plan stipulates that any Employment Area lands located near Highway 404 should be protected for future employment generation. These lands are considered strategic and are being carefully planned to maximize the provision of a range of jobs in accordance with the preferred 'Employment Lands' designations and policies outlined in Section 8.5 of the Official Plan.

Both the Regional Official Plan and the City of Markham Official Plan indicate the critical need for this area to accommodate future employment growth in Markham. More specifically, the need was identified for large parcels of land appropriate for industrial purposes. The Future Employment Area represents Markham's last opportunity for additional employment lands within a reasonable distance to a 400-series highway.

The intended land uses for the Future Employment Area are consistent with the 'Business Park Employment', 'General Employment' and 'Service Employment' designations in Section 8.5 of the City of Markham Official Plan, with the majority of the lands intended for 'General Employment' purposes.

The following section briefly outlines the encouraged development typologies and uses related to each Employment Land designation, and the implications of each designation on the North District Cultural Heritage Resource Strategy.

- **Business Park Employment:** *"Land designated 'Business Park Employment' are to be planned and developed for prestige industrial and office development, frequently in larger scale buildings located on large properties. Industrial buildings will generally be single storey and may be in single use or multiple unit buildings. It is the intent of this Plan that business park areas provide prime business locations that help attract new business and support the retention of existing businesses in Markham." (Markham OP, Section 8.5.2).*
    - **Permitted Uses:** Office, Manufacturing, Warehousing, Hotel, Convention Centre, Parking Garage, Ancillary Commercial (Retail, Services, Restaurant).
- **General Employment:** *'General Employment' areas are characterized by large properties developed with single and multiple unit buildings accommodating the industrial uses that are primary to the designation. The majority of buildings are single storey, reflecting the nature of the operating undertaken by the businesses they house.*

Many of the properties are designed to accommodate truck movements and loading and may also include space for outdoor storage. Some buildings may include a second storey portion to accommodate the particular requirements of industrial or warehousing activities or accessory office space. (Markham OP, Section 8.5.5).

- **Permitted Uses:** Manufacturing, Warehousing, Trade School, Commercial School, Ancillary Office and Commercial.

- **Service Employment**: "*The 'Service Employment' designation applies to lands that are planned and developed for service and retail uses together with light industrial and warehousing and small office uses that are dispersed within an overall mix of uses. Service employment uses are generally located within a variety of configurations and building forms such as single and multi-storey buildings that are modest in scale. Any 'Service Employment' lands would be located along arterial roads, and where possible, at the interface of the employment lands with neighbourhood lands so that the retail and service use provided are available to serve both the employment lands and the neighbourhood lands." (Markham OP, Section 8.5.4).*

  - **Permitted Uses:** Retail/Service Commercial.

Implications of the Employment Area Policies on our Strategy:

- The Future Employment Area contains large, unoccupied parcels designated for employment land uses along a 400-series highway. This is becoming increasingly rare across the Greater Toronto Area. As such, this area needs to be carefully planned to ensure its employment potential is not hindered or detrimentally impacted by future planning.
- None of the permitted land uses in the Future Employment Area allow for residential development, and therefore many of the cultural resources cannot be returned to their original use as a residential dwelling.
- As the Future Employment Area (MiX District) is anticipated to become Markham's global innovation district comprised of major technology companies, the area will require prestige office development. Business Park Employment is the only land use that permits prestige office development, and therefore must be prioritized. The policies outline that Business Park Employment uses require "prime business locations" with high visibility and access to major arterial roadways. To accommodate this land use, it is critical that premium sites along Woodbine Avenue and Elgin Mills Road, particularly at intersections, are reserved for future Business Park Employment buildings.
- General Employment uses are anticipated to be the most prominent land use in the Future Employment Area due to the area's proximity and access to Highway 404, as well as the large scale of parcels. This land use requires a significant amount of space to accommodate large industrial warehouses and truck movement/loading, and so they will require the area's largest parcels with the shortest distance to arterial roads. General Employment uses are typically set back from the road and do not require direct street visibility.
- Service Employment uses are meant for small retail or service tenants that complement the large-format industrial employment uses and contribute to a more vibrant and complete development area. This land use is inherently flexible and can be introduced within a variety of site configurations and mixes of uses. As the Future Employment Area is surrounded by existing residential neighbourhoods, the Service Employment uses will likely serve both employees and residents of the local area. As such, it is important that Service Employment uses are located near major roadways with high street visibility in order to attract commercial tenants and be easily accessed by surrounding residents.

8.3 Financial implications of conservation

Cultural heritage resources provide a glimpse into our past, while lending character and serving a new functional purpose in our modern communities. These resources are non-renewable and can never be regained once lost. Employment areas have much to gain from adapting and reusing historic buildings as they provide vibrancy and charm to uninviting industrial zones and can be repurposed into retail/service commercial assets that serve the local workforce. In many ways, an adaptive reuse project can invigorate a newly established development area by meeting the needs of the changing population.

Arguably, the most important factor in the decision to adapt an existing building is cost. Whether the owner is private or public, budgets always come into play. Selecting an unoccupied or deteriorating structure for restoration and reuse can be viewed as a somewhat risky and yet potentially profitable investment. Unless the goal is historic restoration of a 'valued' landmark, adaptive reuse must be the more cost-effective option, otherwise demolition or passive neglect will emerge as the one other options.

In capitalizing on previous labour and financial investment, adaptive reuse is often noted for its capacity to provide cost savings in comparison to demolition and reconstruction. There are many potential cost advantages to reusing a cultural heritage resource, as the structure is already in place (materials and erection costs have already been accounted for), limited or no demolition is required, less expensive land acquisition, and most required utilities are already connected and may only need modernization. Further, by enhancing the aesthetic qualities and functionality of the built form, the cultural heritage resource may help to improve local property values and stimulate investment.

However, not all potential adaptive reuse projects prove economically viable. Estimations of project profitability and commercial performance represent critical factors in determining the attractiveness of adaptive reuse to developers and property owners. Key considerations include capacity to attract commercial/office tenants or buyers, costs of maintenance and operation, investment return forecasts, satisfying employee needs, and market value of the project. The resource's new function must be convenient, and the community and local workforce in which that new function will serve must demonstrate a clear *need* for the use. Combined with the forecasted project feasibility and local markets, successful adaptive reuse projects must be supported by a compatible location within the urban fabric, a reasonable network of amenities, and a suitable environment with good access to employees and residents.

More specific to the MiX District, adaptive reuse projects will likely contribute to the vibrancy and uniqueness of the proposed innovation district. Research shows that successful innovation districts are built upon the intrinsic qualities of an area, including: proximity, density, vibrancy, and authenticity; and that they contain a range of economic and physical assets. **Economic Assets** are comprised of the companies, institutions, and organizations that drive the innovative environment, which can include incubators/accelerators, co-working space, and food & beverage and commercial amenities. Adaptive reuse offers opportunities to accommodate a range of these uses, particularly for unique food and beverage and commercial experiences.

Cultural heritage resources can also be considered **Physical Assets** as they can be repurposed as public or privately owned spaces that attract employees and tourists while also stimulating higher levels of collaboration. Physical Assets can include contemporary office space, labs, and entertainment facilities. More specifically, adaptive reuse projects may offer significant opportunities for start-up businesses and co-working spaces due to the relative affordability of recycling buildings in comparison to new construction.

The rejuvenation of cultural heritage resources could serve a crucial reaffirming role in anchoring the proposed innovation district and employment area within the City of Markham. An integrated and holistic conservation approach that considers the many financial implications for property owners, while also reinforcing a sense of place and collective identity, will be critically important to successfully integrating the cultural heritage resources within the Future Employment Area.

8.3 Case study overview

The balancing act of conserving cultural heritage resources within high-priority employment areas is not unique to the City of Markham. Many municipalities across the GTHA have been faced with similar scenarios, yielding a range of conservation approaches, financial implications, municipal interventions, and partnership outcomes.

As part of this study, urbanMetrics consulted with municipal heritage planners from across the GTHA to identify examples of cultural heritage resources that have been successfully integrated into employment areas. While the planners unanimously expressed that preserving cultural heritage resources is significantly more challenging within employment areas than it is in residential areas, it can be accomplished with the right balance of flexibility and municipal cooperation.

This section summarizes the findings and key learnings from five case studies in which municipal staff worked with property owners to successfully conserve cultural heritage resources on the original property within an employment area.

Insights were gained from the following case studies:

- 10254 Hurontario Street, Brampton (Learment/C. Armstrong Farmhouse)

- 2477 Queensway Drive, Burlington (Locust Lodge)

- 8400 Healey Road, Caledon (Shore Wakely House)

- 2075 Syntex Court/Langer Road, Mississauga (McClure-Lafferty House)

- 955 Century Drive, Burlington

8.4 Conservation approaches

Identifying the appropriate conservation approach for retaining a cultural heritage resource depends on a variety of factors, each with its own potential financial implications and risks. Across the five case studies, a range of conservation approaches were utilized, including: Retention In-Situ, Relocation within the Original Property, Restoration, and Adaptive Reuse. While discussed previously in this study, the approaches have been defined below:

- **Retention In-Situ:** In-situ means 'in place'. This approach refers to the action of protecting, maintaining, and/or stabilizing the existing materials of a cultural heritage resource in the location where it was found. It is the main and preferred recommended action associated with minimal intervention.
- **Relocation within the Original Property:** Not all cultural heritage resources can be retained in-situ. Development pressure and general encroachment of the surrounding area can make the original location of the resource no longer viable. In this case, the property owner or municipality can preserve a resource by relocating it to a more suitable location within the original property. It is generally not recommended that any cultural heritage resource is relocated away from the original property.
- **Restoration:** If a property owner is considered occupying or tenanting the cultural heritage resource, it will require restoration. This is process of accurately revealing and recovering the state of a resource as it appeared at a period in its history, while protecting its heritage value. Restoration includes returning a character-defining element to its prior condition when it has undergone changes attributed to failure, decline, wear, normal use, or abuse; and can include: roof, door and window replacement, waterproofing, repainting, or removing unoriginal elements that have been added over time.
- **Adaptive Reuse:** The process of repurposing cultural heritage resources, that have outlived their original purposes, into different uses or functions, while at the same time retaining their historic feature. Examples of adaptive reuse include repurposing a farmhouse into a daycare, a schoolhouse into a boutique hotel, or a historic home into a restaurant.

Each case study originally functioned as a residential dwelling for a historic individual and/or family. Recognizing that employment areas generally do not permit any form of residential uses, each resource was repurposed for a new non-residential function.

As shown in Table 3, our case study research found that each cultural heritage resource underwent a restoration process with the intention of adaptive reuse. All resources were retained within the original property, with the majority retained in-situ.

Table 3: *Conservation Approaches, Case Studies*

Property	Restoration	Retention In-Situ	Relocation within Original Property	Intention of Adaptive Reuse
10254 Hurontario St.	X		X	X
2477 Queensway Dr.	X	X		X
8400 Healey Rd.	X	X		X
2975 Syntex Ct.	X		X	X
955 Century Dr.	X	X		X

Source: urbanMetrics inc. based on information from municipal heritage planning departments.

The cultural heritage resources at 10254 Hurontario Street and 2975 Syntax Court were relocated to more suitable locations within the original property in order to accommodate the planned industrial development. Heritage planners involved with the two projects advised that the new locations are better suited for the resources as they now have direct visibility from the street, can be publicly accessed, and have a higher likeliness of attracting a commercial tenant.

More specifically, **Figure 4** illustrates the relocation of the cultural heritage resource at 10254 Hurontario Street. The property is owned by a private interest who is currently pursuing the development of a major warehouse distribution centre on the site. To accommodate this large-format development, the property owner obtained approval from the City of Brampton to relocate the vacant cultural heritage resource from the center of the property to the northeast corner.

By relocating and restoring the resource, the property owner can now build the warehouse distribution centre and occupy the resource as an accessory office building or lease the space to a commercial tenant. The City of Brampton is supportive of this conservation approach because the resource will no longer be landlocked It is now directly visible from Hurontario Street and can be accessed by the public. Dependant on whether the property owner can successfully attract a commercial tenant, the resource could become a valuable neighbourhood amenity to the adjacent residential community.

Figure 4: *10254 Hurontario Street, Case Study (Source: urbanMetrics inc.)*

The remaining three case studies found a range of success in retaining the cultural heritage resource in-situ. The most successful example is 955 Century Drive in the City of Burlington (see **Figure 5**), which involved the integration of an old farmhouse into a light industrial business park. The resource was being considered from the very beginning of the planning and development process, and the subdivision was intentionally planned and built in a configuration that allowed to resource to be retain in-situ. The resource was retained on a large property that was able to provide sufficient parking, accessory buildings, and outdoor work/storage areas.

This is a key finding for resources intended to be integrated into an employment area site plan and repurposed for commercial uses. Maintaining a generous lot size for the resource was the key factor in giving the resource flexibility to be adapted to a new use. A commercial tenant will require a prescribed amount of parking outlined in the local zoning by-law, so if the property owners want to attract a tenant, they will need to keep that in consideration when determining the developable lot for industrial buildings. While maintaining a 10-metre buffer is important for the longevity and protection of the resource, it is not enough space to accommodate the parking and circulation requirements of a commercial tenant. This resource is now successfully integrated into the employment area and has been occupied by an animal kennel (pet daycare).

Figure 5: *955 Century Drive, Case Study (Source: urbanMetrics inc.)*

In contrast, the example at 8400 Healey Road in the Town of Caledon invokes a mixed response in how successful the resource was integrated. As shown in **Figure 6**, the resource is situated on a corner lot within the Canadian Tire distribution centre property.

Figure 6: *8400 Healey Road, Case Study (Source: urbanMetrics inc.)*

From the perspective of the property owner, the resource did not hinder development, as Canadian Tire was able to successfully develop a large-scale distribution centre without relocating or demolishing the resource. However, the resulting site plan was configured in a way that only benefited the industrial development and did consider the resource's potential as a revenue-generating asset.

While it has been restored and retained in-situ, the cultural heritage resource is now fenced in on a smaller lot and does not have driveway access or visibility. This has negatively impacted the value of the resource and completely diminished any ability for the property owned to lease it to a commercial tenant. Due to this, the resource must be repurposed for internalized purposes and has remained vacant. Canadian Tire believes the resource is too small and physically disconnected to serve as accessory office space or a corporate training centre, however it has been considered for a Canadian Tire museum or a prayer building for religious truck drivers and staff.

Key Findings for the North District Cultural Heritage Resource Strategy:

- While relocation is risky and typically not the preferred conservation strategy, it is recommended within employment area developments to create regular shaped development parcels and to accommodate large-format industrial buildings that require circulation and internal roadways.
- Property owners should only relocate cultural heritage resources to sympathetic and more premium locations within the original property. It is recommended to relocate resource closer to the street and residential areas so they have increased visibility, can be publicly accessed and appreciated, and have a higher likeliness of attracting a commercial tenant.
- Whether the resource is retained in-situ or relocated, it must be located on a large lot. This allows for use flexibility, parking requirements, and zoning by-law conformity later in the process when the property owner leases to a commercial tenant.
- To successfully integrate cultural heritage resources into the North District Future Employment Area, they must be considered and centred in the planning process from the beginning. It is significantly easier and more cost effective to retain resources in-situ if roadways, services, and development parcels are configured around the resources initially, instead of the resources becoming a constraint and having to be relocated afterwards.

8.5 Financial implications

Key barriers to the success of integrating cultural heritage resources into employment areas is the perceived complexity and financial risk associated with adaptive reuse projects. Further, the risk and complexity can be compounded by lengthy planning processes, design compatibility issues, size and scale of the projects, and the project's location and proximity to sensitive uses. The case studies revealed that commitment to an adaptive reuse project within an employment area requires a substantial risk on the part of the property owner/developer, especially if the existing structure is not appropriately sized to support profitable densities.

The case study research uncovered key findings related to market dynamics, and how property owners face a risk of unpredictable investment return due to an uncertain and untested market. This is specifically relevant for the North District Future Employment Area, as it is currently occupied by agricultural uses and has not demonstrated the area can support a healthy supply of service/retail commercial or office uses.

This being said, allowing a cultural heritage resource to remain vacant and derelict brings with it its own costs and challenges. Financial implications of vacant buildings include the costs of removing illegal dumping, paying property taxes on a structure that is not generating income or housing a tenant, and the liability of individuals entering the structure illegally and potentially injuring themselves or vandalizing the resource, among others. Conservation is expensive and therefore the costs must be carefully considered and managed. Table 4. outlines the order of magnitude costs for the property owners to restore and/or relocate the cultural heritage resources as they were integrated into their employment areas.

Table 4: *Order of Magnitude Conservation Costs, Case Studies*

Property	Restoration Cost	Relocation Cost	Total Cost	Total Cost Per Square Foot
10254 Hurontario St.	$60,692	$167,131	**$227,760**	**$113.88**
2477 Queensway Dr.	$113,552	-	**$113,552**	**$23.19**
8400 Healey Rd.	n/a	n/a	n/a	n/a
2975 Syntex Ct.	$400,000	$100,000	**$500,000**	**$152.44**
955 Century Dr.	n/a	n/a	n/a	n/a

Source: urbanMetrics inc. based on information from municipal heritage planning departments.
Note: n/a indicates that the project budget was not available and/or the planner could not find the original documents.

Overall, heritage planners emphasized the significance of these case studies as they represent a group of property owners that were committed to preserving the legacy of the resource on their property, and saw value in rejuvenating the resource to attract a tenant. According to the planners, many cultural heritage resources located within designated employment lands are unfortunately left unoccupied, fenced in on a small lot, inaccessible, and gradually decline to a state of disrepair.

Restoration costs can vary greatly depending on the condition of the resource. In the case of 2975 Syntex Road, the cultural heritage resource required a significant amount of restoration work in order to attract a restaurant or bar tenant, including a new roof, window and door replacements, asbestos abatement, a commercial kitchen, and an addition. The resource was also relocated 53 metres north on the original property to increase the visibility of the resource from the street and to accommodate the required number of parking spots for a restaurant use. In total, the conservation works amounted to $500,000 ($152.44 per square foot), and planning staff are confident that the property owner will be able to recoup their costs by leasing the building to a restaurant owner. With restaurant rental rates in Mississauga averaging around $20 per square foot for comparable historic properties (CoStar, 2020), the property owner could potentially anticipate monthly rent payments between $40,000 to $65,000 (dependant on the leasable area). However, although the restoration and relocation work has been completed, the resource still has not secured a commercial tenant, and is being used as storage. This represents the substantial risk a property owner incurs when pursuing an adaptive reuse project.

Aside from the historic value of preserving a cultural heritage resource in its original place, the extremely high cost of relocation is one of the primary reasons why municipalities encourage conservation in-situ. As demonstrated by the various case studies, relocation of a cultural heritage property within the original lot-lines will cost the property owner over $100,000, which does not account for the additional costs of constructing the new foundation and footings. More specifically, the relocation cost for 10254 Hurontario Street was more than double the cost of the restoration works.

The graphic on the following page outlines the order of magnitude restoration and relocation costs for 10254 Hurontario Street.

***Table 5**: Total Cost Breakdown for 10254 Hurontario Street (Source: City of Brampton)*

SCOPE OF WORK						PRICING		
No.	ELEMENTS	QTY.	Unit	QTY.	Unit	Cost / Unit	Amount	Total $
1	**SITE WORK & DEMOLITION :**							
	1a - Demolish rear west additions (D4)	72.31	Sq.m.	778.32	Sq.ft.	8.00	778.32	6,226.56
	1b - Remove non-original bricks (D2)	71.00	Sq.m.	764.26	Sq.ft.	18.00	764.26	13,756.72
	1c - Remove non-original windows & doors (D5)	9.00	No.	9.00	No.	200.00	9.00	1,800.00
	1d - Erect 8'-6" foundation wall with footings, walls, waterproofing, peripheral drainage, and sump hole (M9)	138.59	Sq.m.	1491.80	Sq.ft.	45.00	1491.80	67,130.93
	1e - Prepare, stabilize, load & relocate main block, lump sum estimate (D1)							100,000.00
2	**MASONRY :**							
	2a - Clean, repair, repaint, restore brick accent, stain existing walls (M1, M2, M6, M7, M8)	352.72	Sq.m.	3796.78	Sq.ft.	2.50	3796.78	9,491.95
	2b - Replace selected deteriorated / missing original bricks (M3, M5)	43.85	Sq.m.	472.01	Sq.ft.	18.00	472.01	8,496.23
	2c - Expose former exterior wall (M4)	118.26	Sq.m.	1.00	Sq.ft.	4.00	118.26	473.04
	2d - Restore original concrete sills (M10)	9.00	No.	96.88	No.	100.00	96.88	9,687.83
3	**WOODWORK :**							
	3a - Repair and refinish wood trims (WD1, WD2)	8.69	Sq.m.	28.50	Sq.ft.	5.50	28.50	156.77
4	**ROOFING :**							
	4a - Refinish and restore metal roofs (R1, R2)	6.11	Sq.m.	65.77	Sq.ft.	80.00	65.77	5,261.57
	4b - Refinish and restore asphalt roof shingles (R4, R5)	14.01	Sq.m.	45.95	Sq.ft.	30.00	45.95	1,378.58
5	**WINDOWS & DOORS :**							
	5a - Repair and refinish existing wood-framed windows and/or doors (WN1)	9.00	No.	9.00	No.	200.00	9.00	1,800.00
	5b - Inistall new windows and doors (WN2)	7.00	No.	7.00	No.	300.00	7.00	2,100.00
						Total Cost Estimate($)		**227,760.20**

While relocation can significantly drive up the cost of conservation, it is often proposed by property owners because it unlocks a larger, regular shaped development area that can accommodate large-format industrial uses.

Conversely, if the cultural heritage resource is already situated in a premium, high-traffic location near the street and does not directly hinder development, it is a much more cost-effective solution for the property owner to conserve the resource in-situ. As outlined previously, the total conservation costs for the cultural heritage resource located at 2477 Queensway Drive amounted to a total of $113,511 because it was retained in-situ. The reduced cost and scale of conservation was able to expedite the application process, which brings the resource closer to becoming tenanted and revenue-generating.

Table 6 outlines the order of magnitude cost breakdown for 2477 Queensway Drive.

Table 6: *Total Cost Breakdown for 2477 Queensway Drive (Source: City of Burlington)*

Item #	SCOPE OF WORK	COST ($)
1	WATERPROOFING	$7,500.00
2	MASONRY RESTORATION	$20,000.00
3	FRONT ENTRANCE (DOOR, STEPS & HANDRAILS)	$40,000.00
4	SLOPED ROOFING	$5,000.00
5	GUTTERS, DOWNSPOUTS, SOFFIT & FASCIA	$5,000.00
6	WOOD WINDOWS	$26,281.57
7	EXTERIOR PAINTING	$4,730.00
8	STUCCO RESTORATION	$5,000.00
	SUBTOTAL, EXCLUDING HST	$113,511.57

Key Findings for the North District Cultural Heritage Resource Strategy:

- Property owners and developers are less likely to pursue adaptive reuse projects in uncertain markets. As it currently stands, the North District is an untested market within the City of Markham for retail/service commercial uses and so it represents a significant financial risk for property owners.
- To accommodate the proposed industrial development and innovation district within the Future Employment Area, many of the resources will need to be relocated either closer to the street or together in a cluster. As the resources are all in different conditions and states of disrepair, there will be a significant range in costs payable by the property owners, which might not be financially feasible for them. If the City of Markham is interested in clustering and relocating the resources, there might be benefit in acquiring the properties and alleviating some of these costs from the property owners to achieve the City's broader corporate objectives.
- Although conservation is expensive, it is not recommended that resources are left to remain vacant and gradually decline into a state of disrepair. The high costs of security and maintenance, removing illegal dumping, and vandalization is a significant cost to the municipality and property owner.

8.6 Municipal interventions

The planning process has significant impacts on the financial feasibility of an adaptive reuse project. While the presence of an integrated cultural heritage resource might be considered an asset and a motivating factor in developing a unique employment area, the location of the resource may present challenges if the proposed functional upgrades or design attributes are not consistent with current zoning or urban design regulations. Complicated and lengthy planning processes due to zoning and design incompatibilities can represent disincentives for property owners seeking quick-win projects.

Our conversations with heritage planners highlighted the need for ongoing dialog and negotiation during the planning phase to overcome issues such as parking requirements, pedestrian and vehicular traffic, noise, the proximity to sensitive land uses, and neighbourhood character. Additionally, some case studies shed light on the importance of permissive and flexible zoning by-laws for employment areas that allow for a range of potential uses that could tenant the historic structures.

Two planning interventions were used by the City of Burlington in order to encourage the adaptive reuse and leasing of the cultural heritage resource located at 2477 Queensway Drive. The property is subject to a variety of site constraints. The Queen Elizabeth Way (QEW) and Queensway Drive expansions have constrained the property and require significant setbacks; the resource is not visible from the public realm and has limited its potential for adaptive reuse; the property is irregularly shaped and has not opportunity for internal relocation; and the original zoning was very restrictive and did not permit many of the commercial uses that typically occupy heritage properties. The property is illustrated in **Figure 7**.

Figure 7: *2477 Queensway Drive Case Study (*Source: urbanMetrics inc.)

To ensure the cultural heritage resource did not remain perpetually vacant and could become revenue generating for the property owner, the City conducted the following actions:

- The property was re-designated with a site-specific zoning by-law amendment that permits a daycare use and an increased maximum floor area. Previously, the property was zoned for commercial and industrial uses that did not permit a daycare and restricted the maximum building area to 400 square metres. The limited permitted uses and building area was a significant deterrent to any business owner interested in repurposing the historic building. Now that the property has been rezoned, the property owner has submitted a development application to retain and restore the resource into a daycare, as well as constructing a new 640 square metre building that is sympathetic in design.
- The constrained lot area limited the number of parking spaces and size of outdoor play space that could be provided by the proposed daycare. This was a determining factor in limiting the floor area of the new daycare use and presented a huge obstacle to the property owner who is looking to retain and repurpose the resource. Burlington City Council approved a reduced parking rate for the development for the sake of retaining the resource it-situ, and to successfully tenant the property.

Key Findings for the North District Cultural Heritage Resource Strategy:

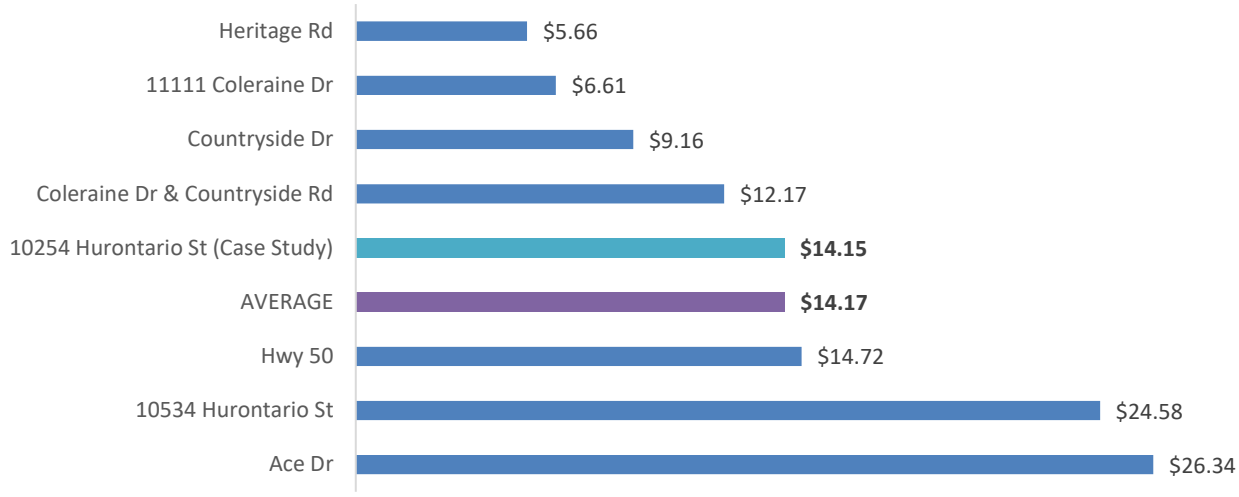
- Zoning by-law and planning amendments require money, time, and understanding of the planning process – all of which can deter a private property owner from pursuing the adaptive reuse of their previous residential dwelling into a commercial or office building. If the City of Markham is committed to relocating and repurposing the resources to support the realization of the MiX District, the City will need to offer context-specific municipal interventions to support each private application process, or acquire the properties and engage in application process itself.
- The City of Markham should consider amending the Employment Land permissions to accommodate a broader range of uses in the MiX District. As discussed in Section 8.2., the permitted uses are reasonably restrictive and do not allow for a range of tenants that have demonstrated to lease heritage properties in employment areas including child daycare, animal daycare, and tourism establishment, among others.
- Parking requirements could present a deterrent to integrating and repurposing cultural heritage resources into employment areas as parking minimums are usually very high for commercial buildings, and this would decrease the amount of developable space for the proposed industrial buildings. It is potentially likely that if parking minimums are not adjusted on a case-by-case basis, a property owner could be more inclined to fence-in the unoccupied resource on a small lot in order to maximize the more profitable industrial development.

8.7 Impact on development potential

To understand the impact of a retaining a cultural heritage resource on the land value of an industrial site, we compared the sale price of 10254 Hurontario Street against comparable vacant, industrial lands in the City of Brampton that do not have cultural heritage resources located on them. The site configuration and conservation approach used at 10254 Hurontario Street is the most similar to what will be required within Markham's Future Employment Area as many of the existing heritage resources are located closer to the middle of the parcels.

As shown below, there are approximately seven comparable industrial sites that have been recently sold in Brampton. According to data retrieved from CoStar, 10254 Hurontario Street sold for approximately $14.15 per square foot to the current property owner. This is virtually equal to the average price per square foot that the comparable industrial sites were sold for ($14.17) and does not immediately indicate that the presence of a cultural heritage resource drove down the sale price.

Comparable Sale Price per Square Foot for Vacant Industrial Land, Brampton



Source: urbanMetrics inc., based on CoStar data.

When the property owner purchased the 10254 Hurontario Street property for the abovementioned price, the cultural heritage resource was situated in the centre of the site. The property owner was aware they would have to go through the process of relocating the building and that it would require additional investment. While we assume that relocating and restoring a cultural heritage resource might not have been the original intention of the property owner, the site's excellent scale, location on a major arterial road, and proximity to 400-series highways were likely the main drivers for the sale.

Further, as was shown in the 8400 Healey Road example, Canadian Tire was able to configure their site successfully to accommodate a substantial distribution centre, with limited constraints. The heritage planner on file indicated that while they have not preserved the resource successfully, it did not hinder development and was not a major deterrent to them locating in that area. By retaining the resource in the corner of the site, it allowed for a large portion of direct street frontage so that the site could contain multiple access points for the industrial operations.

All the selected case studies demonstrate that if: 1) the cultural heritage resources are considered in the early planning process, 2) developable parcel areas are large enough to support average industrial-sized buildings, and 3) each parcel has a direct circulation and access point to a main street; industrial development can be successfully configured around a cultural heritage resource retained on the property.

Key Findings for the North District Cultural Heritage Resource Strategy:

- In most cases, large-scale industrial development can be successfully accommodated and configured around cultural heritage resources. In short, industrial developers choose a site location based on the availability of large parcels and proximity to 400-series highways - which are increasingly rare - and so the presence cultural heritage resource may be moderately costly, but not a significant deterrent.
- Based on the most comparable case study to the Future Employment Area, land values did not seem to be significantly impacted by the presence of a cultural heritage resource. It is unlikely that the resources located within the Future Employment Area will have a significant impact on the land value either as the available parcels are large in scale and directly adjacent to a major 400-series highway and regional Strategic Employment Lands.
- While the parcels are generally large enough to accommodate industrial development, a primary concern is adequate access points to allow for trucks to circulate in and out of sites efficiently. To accommodate this, property owners in the Future Employment Land should consider relocating the resources to corner lots in order to unlock as much street frontage for access points as possible.

8.8 Summary

This section discussed the financial and real property implications that should be taken into consideration when repurposing a cultural heritage property into a new non-residential use within an employment area. The resulting key takeaways and recommendations are as follows:

- It is imperative that the Future Employment Area is carefully planned to ensure its employment potential is not detrimentally impacted by future planning. To attract industrial users, the development process needs to enable large, developable parcels that can maximize industrial footprints and accommodate appropriate truck circulation and access.
- The cultural heritage resources need to be situated in locations that do not hinder development, and/or create irregular development parcels with limited access points. If the resource is situated in the centre of the property, it is recommended that it be relocated and restored at a corner lot, with the subject building ideally oriented towards the street. If the resource is already located at the street, it should be reviewed on a case-by-case basis to understand if the current configuration allows for sufficient access points to the remaining property, or if it

would be financially beneficial for the property owner to relocate it to the corner lot and open up more access points and development area.

- Relocating cultural heritage resources towards the street is beneficial as it improves the building's street visibility, which increases the likelihood of attracting a commercial tenant. While restoration and relocation might be expensive for the property owner, this approach gives owners a potentially revenue-generating tenant that will serve the future employment land users.
- When conserving a heritage building with the intent of adaptive reuse, property owners must ensure they are publicly accessible and located on a large lot so that it can be flexible to the requirements and needs of a future tenant.
- Heritage properties bring value and local identity, and we do not believe the cultural heritage resources will detrimentally impact land value in the Future Employment Area. The available parcels are large and regular shaped, which can accommodate a range of small to large industrial uses. Any obstacles related to the cultural heritage resources in the area could be mostly resolved through relocations.
- A potential conflict could occur between Prestige Office uses and the cultural heritage resources. Both should be situated on corner lots with prominent street visibility. However, this could be accommodated by repurposing and integrating the resource into contemporary office space, instead of commercial space.
- If the City of Markham prefers that the resources are relocated and/or tightly clustered together, there will be significant costs required by the property owners, which might not be financially feasible for them. If the City of Markham is interested in clustering and relocating the resources, there might be benefit in acquiring the properties and alleviating some of these costs from the property owners to achieve the City's broader corporate objectives.

PART IV A Strategy for Markham

9.0 Summary

As noted earlier in this report, the City of Markham is undertaking a long-range planning exercise for a future employment area, which contains a number of identified cultural heritage resources. The City is seeking long-term direction related to the conservation of these cultural heritage resources as the study area is transformed into a business park in the future.

9.1 Study area background

The City of Markham has embarked on long-range planning for the future urban area lands within the northern area of the City of Markham. A portion of this area has been identified for employment lands, and will be known as the Markham Innovation Exchange (MiX) District. The area is currently rural in nature and contains a number of identified cultural heritage resources, some designated under the *Ontario Heritage Act* and some listed on the City's municipal heritage register.

Intended to be the next frontier for innovation and employment growth within Markham, the North District's Future Employment Area will be developed by the private sector for a wide range of non-residential uses – including prestige office, industrial, manufacturing, innovation hubs, and commercial amenities. Much of the Future Employment Area is located within the MiX District, which is comprised of nearly 2,000 acres of land, intended to attract development and investment interest from global technology companies looking to tap into the Greater Toronto Area (GTA)'s reputation as a leading North American tech talent hub.

Within the MiX District, the City of Markham owns over 400 acres, and anticipates the realization of this innovation district will hinge on various public-private partnerships.

The City of Markham is now at a crossroads between how best to preserve the ten cultural heritage resources, while also achieving its corporate-wide objectives relating to Employment Areas and realization of the MiX District. Clearly, these lands, and many of the heritage resources that define them, represent an interesting juxtaposition between the Markham's rural agricultural legacy, and its future ambitions to become a global leader in mobility, innovation, and design.

9.2 Project scope

The City of Markham retained the consultant team of MHBC Planning, urbanMetrics and George Robb Architect to assist in the development of an overall strategy as it relates to the cultural heritage resources within this area of the City.

The balancing act of conserving cultural heritage resources within high-priority employment areas is not unique to the City of Markham. Many municipalities across the Greater Toronto and Hamilton Area (GTHA) have been faced with similar scenarios, yielding a range of conservation approaches, financial implications, municipal interventions, and partnership outcomes.

The strategy of this project considered the concept planned for the MiX District, examined various options for the cultural heritage resources, and provided recommendations that both balance conservation of the identified resources with the inclusion of the lands within a planned employment area. Various options were developed, depending on the type of property and the resources present on the lands.

At City staff request, specific options for the City-owned properties within the MiX District were further investigated, to provide specificity and advice that City staff and Council can use to help ensure the cultural heritage resources are conserved in the future. Strategies have been developed for these lands which both balance current needs and future opportunities.

9.3 Findings

The assessment confirms the properties previously identified by the City of Markham do have cultural heritage value. Potential solutions to address their future conservation have been examined. The work undertaken has reviewed the concept planned for the MiX District, studied the significance of the properties, undertaken fieldwork, and examined various options for the cultural heritage resources.

Based on the study process, recommendations have been provided in order to balance the conservation of heritage resources with the future use of the lands for employment purposes. As such, the main potential outcomes for the group of properties are:

1. Retention of the heritage resources within the employment lands, with the resources being adaptively re-used. It is most desirable from a land use

compatibility perspective that the long-term intent is not to have residential uses within a business park. This option also retains the historic context of the properties, while also recognizing their value and ability to transition to land uses more compatible within a business park area.

2. Removal of the heritage resources, which would see the relocation of all or some of the buildings to either other locations within the employment lands or other locations within the City (such as Markham Heritage Estates, or similar type of site). For larger properties with multiple heritage resources, retention of only the main dwelling or some outbuildings would have an impact on the overall cultural heritage value of the property.

The following outlines the conservation approach, which includes policy changes, recommendations for each property (or group of properties), and also interim recommendations so that the important cultural heritage resources and attributes are conserved in the meantime before redevelopment of the area is undertaken. Specific advice is also provided for City-owned properties

10.0 Conservation approach

Based on the property investigations and evaluation undertaken, a general conservation approach has been determined for each of the properties within the MiX District study area. The following outlines the approach developed for each property where applicable and relevant.

The work has also identified the potential for policy revisions to the City of Markham Official Plan. The proposed policy revisions recognize that there may circumstances where the usual hierarchy of actions may not be feasible in the context of broader land use planning goals. As such, an alternative approach is discussed herein.

10.1 Recommended policy revisions

The MiX District is located within an area that the City has designated as a “Future Employment Area”. The City of Markham Official Plan stipulates that any Employment Area lands located near Highway 404 should be protected for future employment generation. These lands are considered strategic and are being carefully planned to maximize the provision of a range of jobs.

Given the Official Plan direction, the long-term policy intent for the area of the City containing the MiX District is not one with a residential character. As such, the City Official Plan hierarchy of actions related to heritage properties (i.e. retain use, adaptive re-use, relocate, demolish) is potentially in conflict with the goal of developing the MiX District for a key employment area. In addition, the research completed as part of this study has shown that there are potential conflicts created between sensitive land uses (i.e. residential) and certain types of employment uses. It would therefore not be reasonable to encourage residential uses within the area over the long-term once the MiX District is fully developed, as this could lead to potential land use conflicts

Accordingly, it is recommended that a Special Policy Area within the City of Markham Official Plan be implemented for the MiX employment area. The Special Policy Area would prioritize the adaptive re-use or relocation of cultural heritage resources within heritage properties over retaining them in situ. In addition, the policy should not require the properties to be ‘at risk’ as a reason to re-locate the buildings. The following hierarchy is suggested as a framework:

- retention of the resource on its original site, and adaptively re-use the building for a non-residential use where possible and feasible;
- relocate the resource to a sympathetic site within Markham.

A draft Official Plan Amendment is included as **Appendix IV-A** for information.

Encouraging the re-location of heritage buildings is only a reasonable policy approach if the buildings have a suitable location to be relocated to. The existing Markham Heritage Estates has approximately three lots remaining, which provides limited potential within the existing subdivision. Therefore, it would be prudent for the City to investigate expanding the current Markham Heritage Estates, or finding another location outside of the MiX District that would be suitable for this type of use. The existing City-owned property east of Warden Avenue, investigated as part of the expanded study area (property #9) appears a suitable candidate. It is also located in the same

geographic area as the heritage resources, providing a potential new location in very close proximity to the existing heritage resources.

It is acknowledged there may be other suitable locations within the City of Markham for a potential new Markham Heritage Estates. It is recommended City staff undertake an investigation into potential sites and provide advice to Council in this regard. The timing of such investigation should be concurrent with the proposed Official Plan Amendment coming forward for Council consideration.

10.2 Property-specific recommendations

The following section provides recommendations related to the different properties within the MiX District. Given the anticipated timeframe until the MiX lands are developed, a range of options can be considered. The following recommendations can therefore help to guide conservation efforts on the various properties until such time as the MiX vision is fully realized. For context, the figure below provides a map of the properties under study.

***Figure 8**: Study Area heritage resources (source: MHBC)*

As noted earlier in this report, some of the properties are currently being utilized while others are vacant. Therefore, the range of options take this into consideration.

10.2.1 Occupied properties

This group of properties represents a mixture of properties that range from those that are small in nature (less than 2 acres) and contain a single main building, to those which are of a larger size (generally approximately 100 acres) and may contain a main dwelling, other agricultural buildings, landscape features, agricultural fields or possibly other natural heritage features.

For these properties, it is recommended to retain the existing building(s) in the existing location on the property, and utilize them for the existing purposes for the foreseeable future. Existing building clusters should ideally remain intact, as well as the area immediately surrounding them. On the larger properties, the balance of the lands can continue to be used for agricultural or other compatible rural uses for the foreseeable future.

In the longer-term as the employment uses continue to develop in the area, it may be appropriate to consider adaptive re-use of the existing buildings for purposes that would compliment the overall business park use for the MiX District (e.g. restaurant or office use), or possibly relocate the building(s) per the recommended Official Plan policy revisions. It should be acknowledged there may be impacts on the overall heritage value of the property should relocation be selected.

The applicable properties are:

- Property #3: 3270 19th Avenue (Doner House)
- Property #8: 11172 Warden Avenue (SS#12 - Clayton Schoolhouse)
- Property #9: 11091 Warden Avenue (John Mustard House)
- Property #10: 3450 Elgin Mills Road East (Hilts-Ford House)

Property #3 and Property #8 are both currently used for residential purposes and can continue in that manner until such a time as the business park development is well underway. Property #9 is currently outside the urban boundary and may continue to be used for residential and agricultural purposes in the longer-term. Property #10 is currently used for residential / agricultural purposes and can continue in that manner.

10.2.2 Vacant properties

Like the occupied properties, this group of properties represents a mixture of sizes that range from those which are small in nature (less than 2 acres) and contain a single main building, to those which are of a larger size (generally approximately 100 acres). The larger properties may contain an agricultural building cluster, remnants of a previous agricultural building cluster, landscape features, agricultural fields or possibly other natural heritage features.

For these properties, it is recommended that the existing buildings be secured and 'mothballed' so that they remain in a safe manner to await a future use (see Section 10.4 for additional details). In some cases, refurbishment may be considered at this time so that the heritage resources on a particular property can be adaptively re-used as the area develops in the future. Existing building clusters should ideally remain intact, as well as the area immediately surrounding them in order to provide context. On the larger properties, the balance of the lands can continue to be used for agricultural or other compatible rural uses for the foreseeable future.

In the longer-term as the employment uses continue to develop in the area, the existing buildings could be considered for adaptive re-use for a variety of purposes that would compliment the overall business park use for the MiX District, or possibly relocated per the recommended Official Plan policy revisions. It should be acknowledged there may be impacts on the overall heritage value of the property should relocation be selected.

The applicable properties are:

- Property #1: 2780 19th Avenue (Alfred Read House)
- Property #2: 3010 19th Avenue (SS#7)
- Property #4: 3490 19th Avenue (Gormley Wideman House and Barn)
- Property #5: 3565 19th Avenue (Lewis-Jarvis House and Barn)
- Property #6: 11251 Woodbine Avenue (Hopper House)
- Property #7: 11242 Warden Avenue (Summerfeldt-McKay House)

The buildings on Property #1, Property #6 and Property #7 represent former farmhouses that are currently vacant, with the balance of the properties currently used for agricultural or industrial uses (in the case of Property #1). The house on Property #4 is currently vacant although some buildings are being used for storage purposes. Property #5 represents a farm cluster containing a house and outbuildings, all of which

are currently vacant. Property #2 is a former schoolhouse, and can either be refurbished / adaptively re-used at this time, or remain in a secure manner until such time as a use is determined.

In the case of all vacant properties, the buildings can either be refurbished / adaptively reused at this time, or be brought into a secure state and remain until such time as a use is determined or relocation can occur. It is recommended the City work with the property owners / internal staff as applicable to ensure strategies to appropriately 'mothball' the properties are implemented.

10.3 Maintenance recommendations

The properties within the MiX District study area contain a variety of cultural heritage resources, some of which are currently vacant. Since a future use for some of the buildings is not yet known and it is conceivable they could remain vacant for some time, measures are required to ensure the buildings remain in a stable condition. Cultural heritage conservation best practices recommend 'mothballing' be undertaken in such circumstances.

Mothballing refers to the temporary closing up of a building or structure to protect it from the weather as well as to secure it from vandalism (Parks Canada, 2010). This is achieved essentially by securing the building envelope, ensuring key components remain stable, and putting in place measures to monitor the building condition. The building is in a holding pattern until a future use is determined for the building. Specific to mothballing buildings, the US National Parks Service (NPS) provides a comprehensive brief outlining recommendations to prepare a building for future use. For convenience, the brief has been attached as **Appendix IV-B**.

As noted in the US NPS brief, there are a number of key building systems and elements to take into account when mothballing a building. These include:

- Documenting the building
- Preparing a condition assessment of the building
- Structurally stabilizing the building
- Controlling pests
- Securing the exterior envelope from moisture penetration
- Securing the building from vandals, break-ins and natural disasters

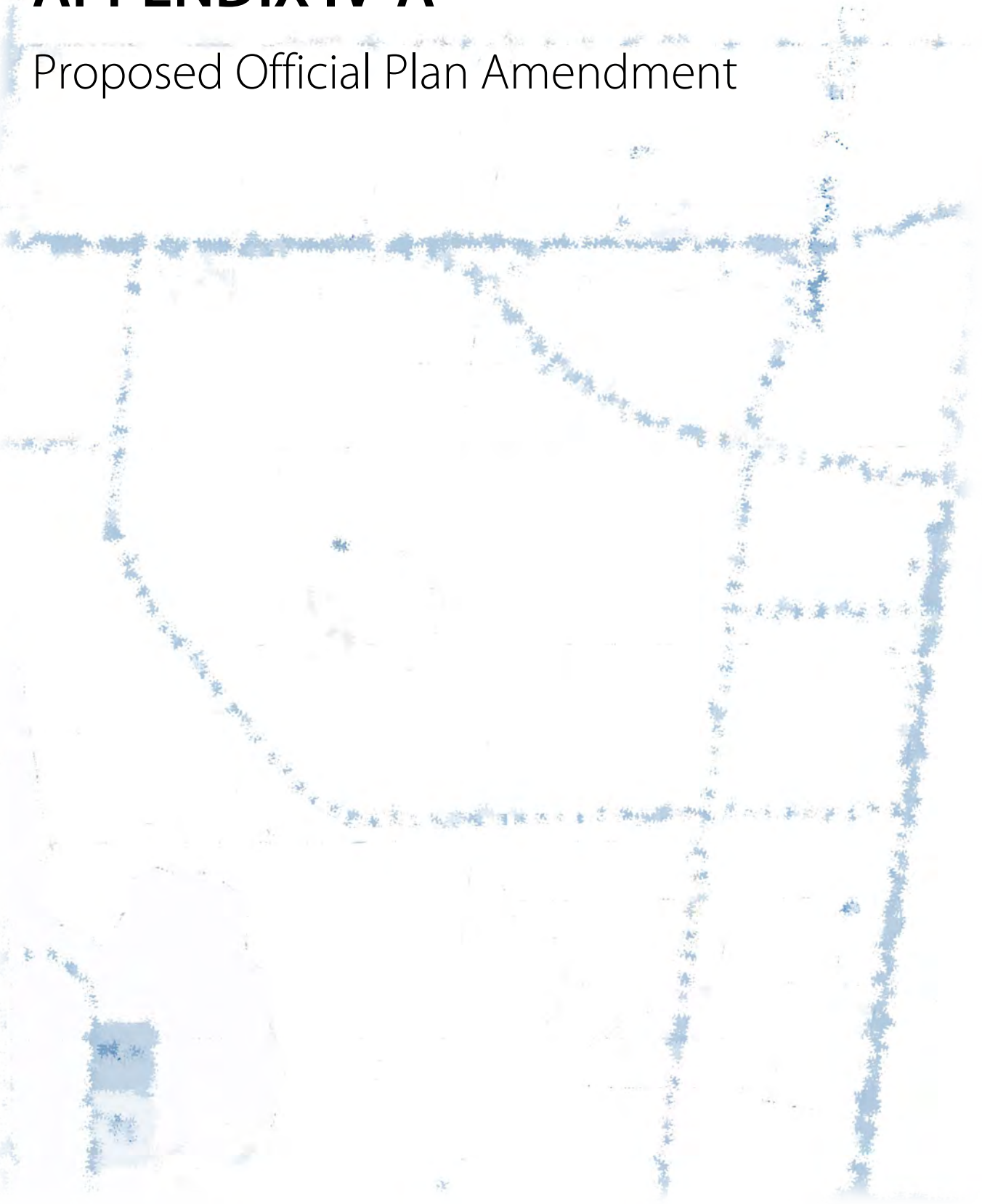
- Providing adequate ventilation to the interior
- Securing mechanical systems and utilities
- Developing a maintenance and monitoring plan

It is recommended that City of Markham staff develop a work program and checklist following the general recommendations related to mothballing for the vacant City-owned properties. Some of this work has been undertaken through the preparation of condition assessment reports on behalf of the City, which have identified immediate and future needs for the vacant City-owned properties. This information will form the basis for future development of a mothball plan related to each property.

It is important the City of Markham direct funding to these properties to ensure their future conservation and protection of City investment. Until such time as a mothball plan has been developed, it is recommended City staff ensure the properties are visited monthly by staff to ensure the buildings are secure

APPENDIX IV-A

Proposed Official Plan Amendment



CITY OF MARKHAM

OFFICIAL PLAN AMENDMENT NO. *XXX*

To amend the City of Markham Official Plan 2014, as amended

This Official Plan Amendment was adopted by the Corporation of the City of Markham, By-law No. _____ - ___ in accordance with the Planning Act, R.S.O., 1990, c.P.13, as amended, on the ___ day of _____, 20__

_____

Mayor

_____

City Clerk

THE CORPORATION OF THE CITY OF MARKHAM

BY-LAW NO. _____

Being a by-law to adopt Amendment No. *XXX* to the City of Markham Official Plan 2014, as amended.

THE COUNCIL OF THE CORPORATION OF THE CITY OF MARKHAM, IN ACCORDANCE WITH THE PROVISIONS OF THE PLANNING ACT, R.S.O. 1990, HEREBY ENACTS AS FOLLOWS:

1. THAT Amendment Number *XXX* to the City of Markham Official Plan 2014, as amended, attached hereto, is hereby adopted.

2. THAT this By-law shall come into force and take effect after the proposed Amendment is approved by York Region.

READ A FIRST, SECOND AND THIRD TIME AND PASSED THIS ___ DAY OF _____, 20____

_____ _____

CITY CLERK MAYOR

CONTENTS

PART I – INTRODUCTION

(This is not an operative part of Official Plan Amendment No. *XXX*)

PART I – INTRODUCTION

1.0 GENERAL

1.1 PART I – INTRODUCTION, is included for information purposes and is not an operative part of this Official Plan Amendment.

1.2 PART II – THE OFFIICAL PLAN AMENDMENT, constitutes Amendment No. *XXX* to the City of Markham Official Plan 2014, as amended. Part II is an operative part of this Official Plan Amendment.

2.0 LOCATION

The Amendment applies to the Markham Innovation Exchange (MiX lands), which are located within the 1,300 ha (3,200 ac) Future Urban Area of the City of Markham. The MiX lands are located generally north of Elgin Mills Road and west of Warden Avenue. The area is currently rural in nature and contains a number of identified cultural heritage resources, some designated under the *Ontario Heritage Act* and some listed on the City's municipal heritage register.

3.0 PURPOSE

The purpose of this Official Plan amendment is to create a Special Policy that will apply within the MiX employment area of the City of Markham. The proposed policies would prioritize the adaptive re-use or relocation of existing buildings over retaining them in situ.

4.0 BASIS

The MiX lands are located within an area of the City designated as 'Future Employment Area', which are protected in the Official Plan for future employment generation. The lands are being carefully planned to maximize the provision of a range of employment opportunities. Given the Official Plan direction, the long-term policy intent for the area of the City is not one with a residential character. As such, the City Official Plan hierarchy of actions related to heritage properties (i.e. retain use, adaptive re-use, relocate) is potentially in conflict with the goal of developing the MiX lands for a key employment area.

Given this potential conflict and the importance of these lands to the future employment opportunities within Markham, it is Council's desire to implement a special policy framework that will aid in the transition of this area to employment uses in the future.

PART II – THE OFFICIAL PLAN AMENDMENT

(This is an operative part of Official Plan Amendment No. *XXX*)

PART II – THE OFFICIAL PLAN AMENDMENT

1.0 THE OFFICIAL PLAN AMENDMENT

1.1 Section 9.9 of the 2014 Official Plan (Future Urban Area), as amended, is hereby amended by adding the following provision:

9.9.6
Notwithstanding Chapter 4.5.3, within the Markham Innovation Exchange (MiX), a modified hierarchy of cultural heritage resource conservation will apply. Within such area the adaptive re-use or relocation of heritage buildings is prioritized over retaining the buildings in situ and in their current use. The following modified hierarchy will be utilized:

- *Retain the cultural heritage resource on its original site, and adaptively re-use the building for a non-residential use where possible and feasible; or*

- *Relocate the resource to a sympathetic site within the City of Markham.*

Demonstration of built heritage resources on properties being under serious threat of loss is not required for properties within the MiX.

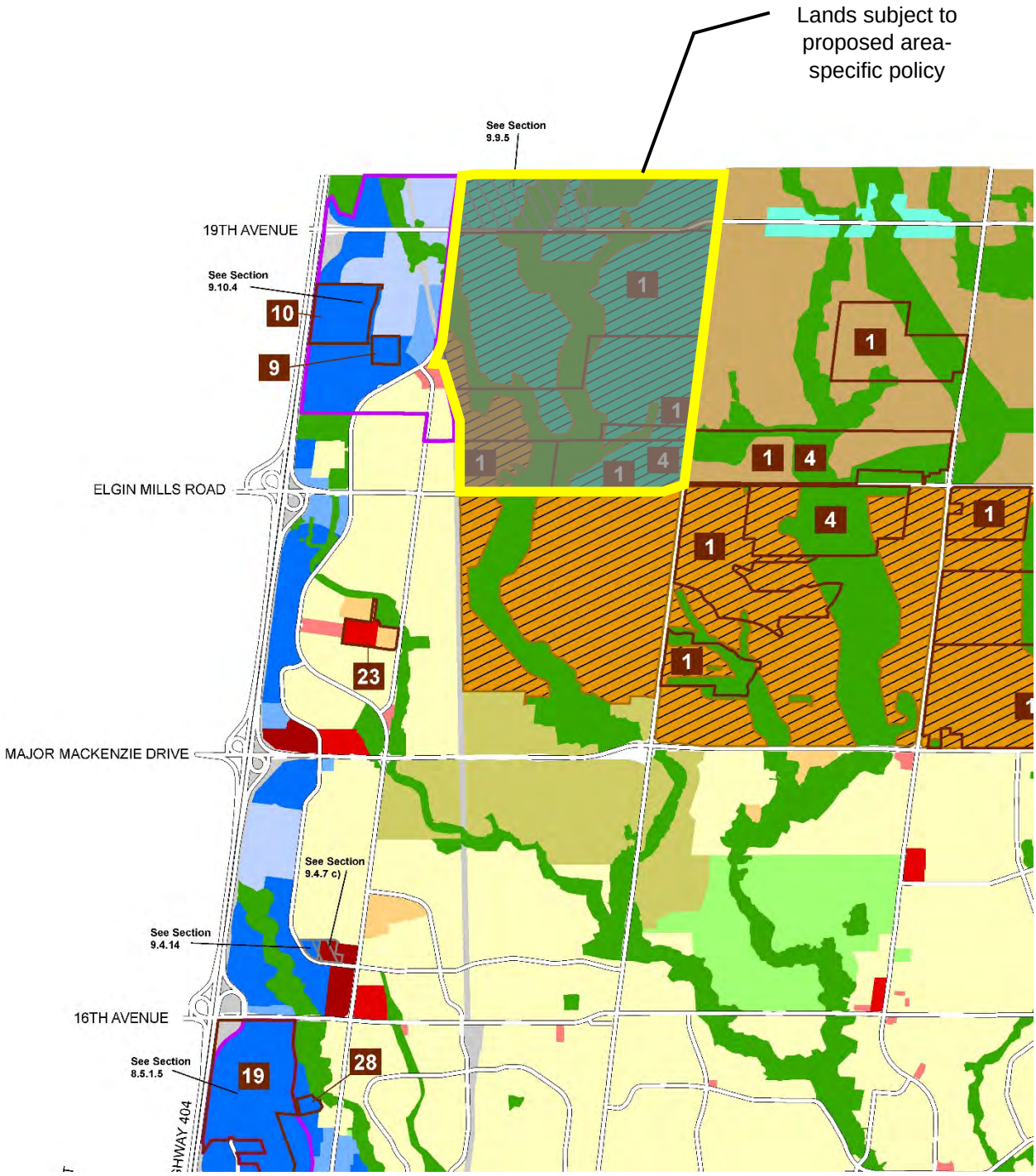
1.2 Map 3 – Land Use of the 2014 Official Plan, as amended, is hereby amended to reference a new site-specific provision, as shown on Schedule "A" attached hereto.

2.0 IMPLEMENTATION AND INTERPRETATION

The provisions of the 2014 Official Plan, as amended, regarding the implementation and interpretation of the Plan, shall apply in regard to this Amendment, except as specifically provided for in this Amendment.

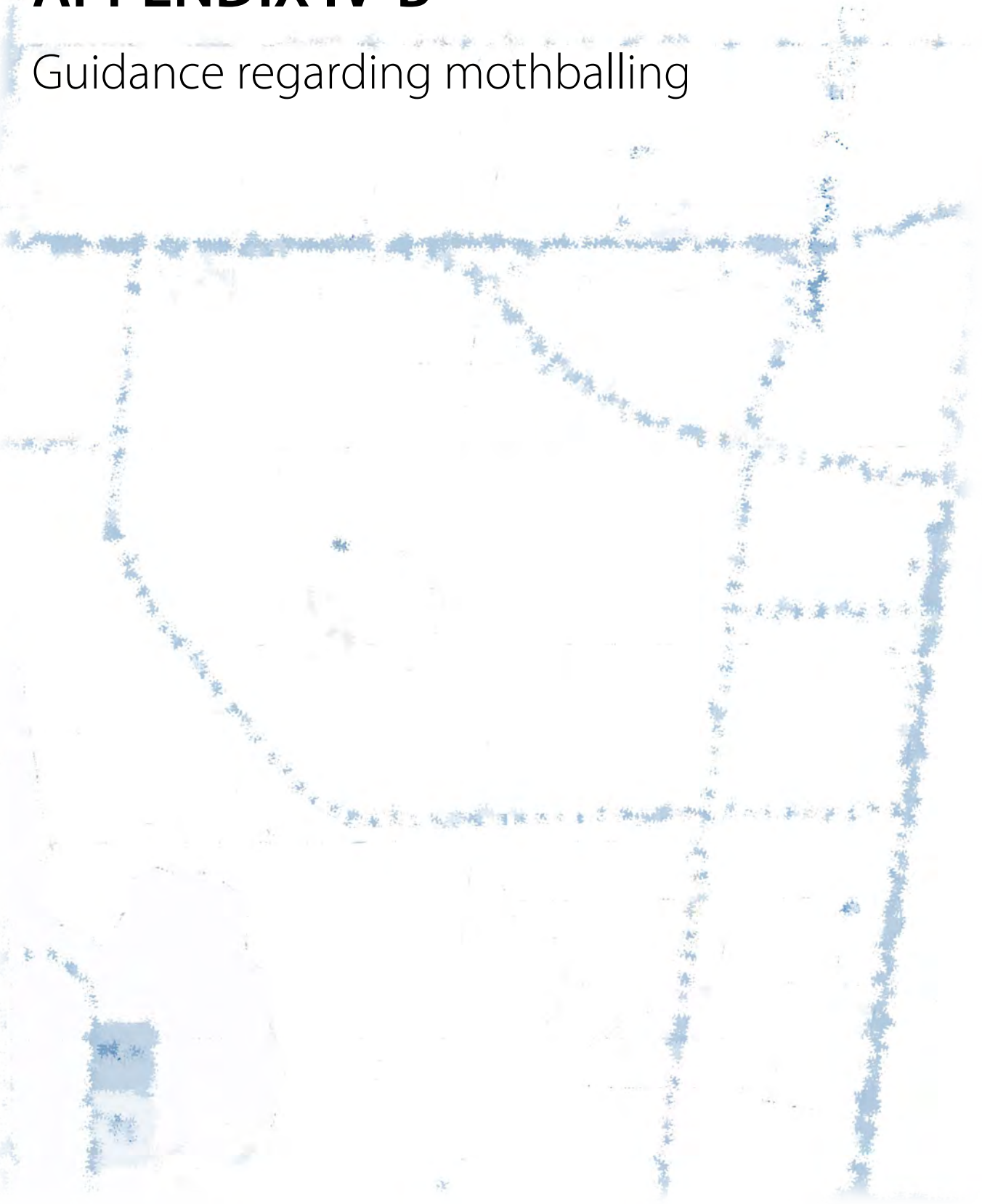
This Amendment shall be implemented by an amendment to the Zoning By-law and Site Plan approval and other *Planning Act* approvals, in conformity with the provisions of this Amendment.

Schedule "A"


Lands subject to proposed area-specific policy
See Section 9.9.5
19TH AVENUE
See Section 9.10.4
10
9
1
1
1
1
4
1
4
ELGIN MILLS ROAD
4
1
1
1
23
1
MAJOR MACKENZIE DRIVE
See Section 9.4.7 c)
See Section 9.4.14
16TH AVENUE
See Section 8.5.1.5
19
28
HIGHWAY 404

APPENDIX IV-B

Guidance regarding mothballing



Some of the web versions of the Preservation Briefs differ somewhat from the printed versions. Many illustrations are new and in color; Captions are simplified and some complex charts are omitted. To order hard copies of the Briefs, see Printed Publications.

PRESERVATION BRIEFS

31
Mothballing Historic Buildings

Sharon C. Park, AIA

Appropriately mothballed historic building. Photo: NPS files.

When all means of finding a productive use for a historic building have been exhausted or when funds are not currently available to put a deteriorating structure into a useable condition, it may be necessary to close up the building temporarily to protect it from the weather as well as to secure it from vandalism. This process, known as mothballing, can be a necessary and effective means of protecting the building while planning the property's future, or raising money for a preservation, rehabilitation or restoration project. If a vacant property has been declared unsafe by building officials, stabilization and mothballing may be the only way to protect it from demolition.

This building has been successfully mothballed for 10 years because the roof and walls were repaired and structurally stabilized, ventilation louvers added, and the property maintained. Photo: NPS files.

This Preservation Brief focuses on the steps needed to "de-activate" a property for an extended period of time. The project team will usually consist of an architect, historian, preservation specialist, sometimes a structural engineer, and a contractor. Mothballing should not be done without careful planning to ensure that needed physical repairs are made prior to securing the building. The steps discussed in this Brief can protect buildings for periods of up to ten years; long-term success will also depend on continued, although somewhat limited, monitoring and maintenance. For all but the simplest projects, hiring a team of preservation specialists is recommended to assess the specific needs of the structure and to develop an effective mothballing program.

A vacant historic building cannot survive indefinitely in a boarded-up condition, and so even marginal interim uses where there is regular activity and monitoring, such as a caretaker residence or non-flammable storage, are generally preferable to mothballing. In a few limited cases when the vacant building is in good condition and in a location where it can be watched and checked regularly, closing and locking the door, setting heat levels at just above freezing, and securing the windows may provide sufficient protection for a period of a few years.

But if long-term mothballing is the only remaining option, it must be done properly. This will require stabilization of the exterior, properly designed security protection, generally some form of interior ventilation—either through mechanical or natural air exchange systems—and continued maintenance and surveillance monitoring.

Boarding up without adequate ventilation and maintenance has accelerated deterioration of this property. Photo: NPS files.

Comprehensive mothballing programs are generally expensive and may cost 10% or more of a modest rehabilitation budget. However, the money spent on well-planned protective measures will seem small when amortized over the life of the resource. Regardless of the location and condition of the property or the funding available, the following 9 steps are involved in properly mothballing a building:

Documentation

1. Document the architectural and historical significance of the building.
2. Prepare a condition assessment of the building.

Stabilization

3. Structurally stabilize the building, based on a professional condition assessment.
4. Exterminate or control pests, including termites and rodents.
5. Protect the exterior from moisture penetration.

Mothballing

6. Secure the building and its component features to reduce vandalism or break-ins.
7. Provide adequate ventilation to the interior.
8. Secure or modify utilities and mechanical systems.
9. Develop and implement a maintenance and monitoring plan for protection.

These steps will be discussed in sequence below. Documentation and stabilization are critical components of the process and should not be skipped over. Mothballing measures should not result in permanent damage, and so each treatment should be weighed in terms of its reversibility and its overall benefit.

Documentation

Documenting the historical significance and physical condition of the property will provide information necessary for setting priorities and allocating funds. The project team should be cautious when first entering the structure if it has been vacant or is deteriorated. It may be advisable to shore temporarily areas appearing to be structurally unsound until the condition of the structure can be fully assessed. If pigeon or bat droppings, friable asbestos or other health hazards are present, precautions must be taken to wear the appropriate safety equipment when first inspecting the building. Consideration should be given to hiring a firm specializing in hazardous waste removal if these highly toxic elements are found in the building.

Documenting and Recording the Building

Documenting a building's history is important because evidence of its true age and architectural significance may not be readily evident. The owner should check with the State Historic Preservation Office or local preservation commission for assistance in researching the building. If the building has never been researched for listing in the National Register of Historic Places or other historic registers, then, *at a minimum*, the following should be determined:

- The overall historical significance of the property and dates of construction;
- The chronology of alterations or additions and their approximate dates; and,
- Types of building materials, construction techniques, and any unusual detailing or regional variations of craftsmanship.

Old photographs can be helpful in identifying early or original features that might be hidden under modern materials. On a walk-through, the architect, historian, or preservation specialist should identify the architecturally significant elements of the building, both inside and out.

By understanding the history of the resource, significant elements, even though deteriorated, may be spared the trash pile. For that reason alone, any materials removed from the building or site as part of the stabilization effort should be carefully scrutinized and, if appearing historic, should be photographed, tagged with a number, inventoried, and safely stored, preferably in the building, for later retrieval.

Documenting a building's history and assessing its condition provide information to set priorities for stabilization and repair, prior to mothballing. Photo: NPS files.

A site plan and schematic building floor plans can be used to note important information for use when the building is eventually preserved, restored, or rehabilitated. Each room should be given a number and notations added to the plans regarding the removal of important features to storage or recording physical treatments undertaken as part of the stabilization or repair.

Because a mothballing project may extend over a long period of time, with many different people involved, clear records should be kept and a building file established. Copies of all important data, plans, photographs, and lists of consultants or contractors who have worked on the property should be added to the file as the job progresses. Recording actions taken on the building and identifying where elements that have been removed are stored will be helpful in the future.

The project coordinator should keep the building file updated and give duplicate copies to the owner. A list of emergency numbers, including the number of the key holder, should be kept at the entrance to the building or on a security gate, in a transparent vinyl sleeve.

Preparing a Condition Assessment of the Building

A condition assessment can provide the owner with an accurate overview of the current condition of the property. If the building is deteriorated or if there are significant interior architectural elements that will need special protection during the mothballing years, undertaking a condition assessment is highly recommended, but it need not be exhaustive.

A modified condition assessment, prepared by an architect or preservation specialist, and in some case a structural engineer, will help set priorities for repairs necessary to stabilize the property for both the short and long-term. It will evaluate the age and condition of the following major elements: foundations; structural systems; exterior materials; roofs and gutters; exterior porches and steps; interior finishes; staircases; plumbing, electrical, mechanical systems; special features such as chimneys; and site drainage.

To record existing conditions of the building and site, it will be necessary to clean debris from the building and to remove unwanted or overgrown vegetation to expose foundations. The interior should be emptied of its furnishing (unless provisions are made for mothballing these as well), all debris removed, and the interior swept with a broom. Building materials too deteriorated to repair, or which have come detached, such as moldings, balusters, and decorative plaster, and which can be used to guide later preservation work, should be tagged, labeled and saved.

Buildings seriously damaged by storms or deterioration may need to be braced before architectural evaluations can be made. Photo: John Milner Architects. Photo: NPS files

Photographs or a videotape of the exterior and all interior spaces of the resource will provide an invaluable record of "as is" conditions. If a videotape is made, oral commentary can be provided on the significance of each space and architectural feature. If 35mm photographic prints or slides are made, they should be numbered, dated, and appropriately identified. Photographs should be cross-referenced with the room numbers on the schematic plans. A systematic method for photographing should be developed; for example, photograph each wall in a room and then take a corner shot to get floor and ceiling portions in the picture. Photograph any unusual details as well as examples of each window and door type.

For historic buildings, the great advantage of a condition assessment is that architectural features, both on the exterior as well as the interior, can be rated on a scale of their importance to the integrity and significance of the building. Those features of the highest priority should receive preference when repairs or protection measures are outlined as part of the mothballing process. Potential problems with protecting these features should be identified so that appropriate interim solutions can be selected. For example, if a building has always been heated and if murals, decorative plaster walls, or examples of patterned wall paper are identified as highly significant, then special care should be taken to regulate the interior climate and to monitor it adequately during the mothballing years. This might require retaining electrical service to provide minimal heat in winter, fan exhaust in summer, and humidity controls for the interior.

Loose or detached elements should be identified, tagged and stored, preferably on site. Photo: NPS files

Stabilization

Stabilization as part of a mothballing project involves correcting deficiencies to slow down the deterioration of the building while it is vacant. Weakened structural members that might fail altogether in the forthcoming years must be braced or

reinforced; insects and other pests removed and discouraged from returning; and the building protected from moisture damage both by weatherizing the exterior envelope and by handling water run-off on the site. Even if a modified use or caretaker services can eventually be found for the building, the following steps should be addressed.

Structurally Stabilizing the Building

While bracing may have been required to make the building temporarily safe for inspection, the condition assessment may reveal areas of hidden structural damage. Roofs, foundations, walls, interior framing, porches and dormers all have structural components that may need added reinforcement.

Interior bracing which will last the duration of the mothballing will protect weakened structural members. Photo: John Milner Architects.

Structural stabilization by a qualified contractor should be done under the direction of a structural engineer or a preservation specialist to ensure that the added weight of the reinforcement can be sustained by the building and that the new members do not harm historic finishes. Any major vertical post added during the stabilization should be properly supported and, if necessary, taken to the ground and underpinned.

If the building is in a northern climate, then the roof framing must be able to hold substantial snow loads. Bracing the roof at the ridge and mid-points should be considered if sagging is apparent. Likewise, interior framing around stair openings or under long ceiling spans should be investigated. Underpinning or bracing structural piers weakened by poor drainage patterns may be a good precaution as well. Damage caused by insects, moisture, or from other causes should be repaired or reinforced and, if possible, the source of the damage removed. If features such as porches and dormers are so severely deteriorated that they must be removed, they should be documented, photographed, and portions salvaged for storage prior to removal.

If the building is in a southern or humid climate and termites or other insects are a particular problem, the foundation and floor framing should be inspected to ensure that there are no major structural weaknesses. This can usually be done by observation from the crawl space or basement. For those structures where this is not possible, it may be advisable to lift selective floor boards to expose the floor framing. If there is evidence of pest damage, particularly termites, active colonies should be treated and the structural members reinforced or replaced, if necessary.

Controlling Pests

Pests can be numerous and include squirrels, raccoons, bats, mice, rats, snakes, termites, moths, beetles, ants, bees and wasps, pigeons, and other birds. Termites, beetles, and carpenter ants destroy wood. Mice, too, gnaw wood as well as plaster, insulation, and electrical wires. Pigeon and bat droppings not only damage wood finishes but create a serious and sometimes deadly health hazard.

If the property is infested with animals or insects, it is important to get them out and to seal off their access to the building. If necessary, exterminate and remove any nests or hatching colonies. Chimney flues may be closed off with exterior grade plywood caps, properly ventilated, or protected with framed wire screens. Existing vents, grills, and louvers in attics and crawl spaces should be screened with bug mesh or heavy duty wire, depending on the type of pest being controlled. It may be advantageous to have damp or infected wood treated with insecticides (as permitted by each state) or preservatives, such as borate, to slow the rate of deterioration during the time that the building is not in use.

Securing the Exterior Envelope from Moisture Penetration

It is important to protect the exterior envelope from moisture penetration before securing the building. Leaks from deteriorated or damaged roofing, from around windows and doors, or through deteriorated materials, as well as ground moisture from improper site run-off or rising damp at foundations, can cause long-term damage to interior finishes and structural systems. Any serious deficiencies on the exterior, identified in the condition assessment, should be addressed.

Regrading has protected this masonry foundation wall from excessive damp during its 10-year mothballing. Note the attic and basement vents, temporary stairs, and interpretive sign. Photo: NPS files.

To the greatest extent possible, these weatherization efforts should not harm historic materials. The project budget may not allow deteriorated features to be fully repaired or replaced in-kind. Non-historic or modern materials may be used to cover historic surfaces temporarily, but these treatments should not destroy valuable evidence necessary for future preservation work. Temporary modifications should be as visually compatible as possible with the historic building.

Roofs are often the most vulnerable elements on the building exterior and yet in some ways they are the easiest element to stabilize for the long term, if done correctly. "Quick fix" solutions, such as tar patches on slate roofs, should be avoided as they will generally fail within a year or so and may accelerate damage by trapping moisture. They are difficult to undo later

when more permanent repairs are undertaken. Use of a tarpaulin over a leaking roof should be thought of only as a very temporary emergency repair because it is often blown off by the wind in a subsequent storm.

If the existing historic roof needs moderate repairs to make it last an additional ten years, then these repairs should be undertaken as a first priority. Replacing cracked or missing shingles and tiles, securing loose flashing, and reanchoring gutters and downspouts can often be done by a local roofing contractor. If the roof is in poor condition, but the historic materials and configuration are important, a new temporary roof, such as a lightweight aluminum channel system over the existing, might be considered. If the roofing is so deteriorated that it must be replaced and a lightweight aluminum system is not affordable, various inexpensive options might be considered. These include covering the existing deteriorated roof with galvanized corrugated metal roofing panels, or 90 lb. rolled roofing, or a rubberized membrane (refer back to cover photo). These alternatives should leave as much of the historic sheathing and roofing in place as evidence for later preservation treatments.

Urban buildings often need additional protection from unwanted entry and graffiti. This commercial building uses painted plywood panels to cover its glass storefronts. The upper windows on the street sides have been painted to resemble 19th century sash. Photo: NPS files.

For masonry repairs, appropriate preservation approaches are essential. For example, if repointing deteriorated brick chimneys or walls is necessary to prevent serious moisture penetration while the building is mothballed, the mortar should match the historic mortar in composition, color, and tooling. The use of hard portland cement mortars or vapor-impermeable waterproof coatings are not appropriate solutions as they can cause extensive damage and are not reversible treatments.

For wood siding that is deteriorated, repairs necessary to keep out moisture should be made; repainting is generally warranted. Cracks around windows and doors can be beneficial in providing ventilation to the interior and so should only be caulked if needed to keep out bugs and moisture. For very deteriorated wall surfaces on wooden frame structures, it may be necessary to sheathe in plywood panels, but care should be taken to minimize installation damage by planning the location of the nailing or screw patterns or by installing panels over a frame of battens. Generally, however, it is better to repair deteriorated features than to cover them over.

Foundation damage may occur if water does not drain away from the building. Run-off from gutters and downspouts should be directed far away from the foundation wall by using long flexible extender pipes equal in length to twice the depth of the basement or crawl space. If underground drains are susceptible to clogging, it is recommended that the downspouts be disconnected from the drain boot and attached to flexible piping. If gutters and downspouts are in bad condition, replace them with inexpensive aluminum units.

If there are no significant landscape or exposed archeological elements around the foundation, consideration should be given to regrading the site if there is a documented drainage problem. If building up the grade, use a fiber mesh membrane to separate the new soil from the old and slope the new soil 6 to 8 feet (200 cm-266 cm) away from the foundation making sure not to cover up the dampcourse layer or come into contact with skirting boards. To keep vegetation under control, put down a layer of 6 mil black polyethylene sheeting or fiber mesh matting covered with a 2"-4" (5-10 cm.) of washed gravel. If the building suffers a serious rising damp problem, it may be advisable to eliminate the plastic sheeting to avoid trapping ground moisture against foundations.

Mothballing

The actual mothballing effort involves controlling the long-term deterioration of the building while it is unoccupied as well as finding methods to protect it from sudden loss by fire or vandalism. This requires securing the building from unwanted entry, providing adequate ventilation to the interior, and shutting down or modifying existing utilities. Once the building is de-activated or secured, the long-term success will depend on periodic maintenance and surveillance monitoring.

Securing the Building from Vandals, Break-ins, and Natural Disasters

Securing the building from sudden loss is a critical aspect of mothballing. Because historic buildings are irreplaceable, it is vital that vulnerable entry points are sealed. If the building is located where fire and security service is available then it is highly recommended that some form of monitoring or alarm devices be used.

To protect decorative features, such as mantels, lighting fixtures, copper downspouts, iron roof cresting, or stained glass windows from theft or vandalism, it may be advisable to temporarily remove them to a more secure location if they cannot be adequately protected within the structure.

Mothballed buildings are usually boarded up, particularly on the first floor and basement, to protect fragile glass windows from breaking and to reinforce entry points. Infill materials for closing door and window openings include plywood, corrugated panels, metal grates, chain fencing, metal grills, and cinder or cement blocks. The method of installation should not result in the destruction of the opening and all associated sash, doors, and frames should be protected or stored for future reuse.

The first floor openings of this historic building have been filled with cinder blocks and the doors, window sash, and frames removed for safe keeping. The security metal door features heavy duty locks. Photo: NPS files.

Generally exterior doors are reinforced and provided with strong locks, but if weak historic doors would be damaged or disfigured by adding reinforcement or new locks, they may be removed temporarily and replaced with secure modern doors. Alternatively, security gates in an new metal frame can be installed within existing door openings, much like a storm door, leaving the historic door in place. If plywood panels are installed over door openings, they should be screwed in place, as opposed to nailed, to avoid crowbar damage each time the panel is removed. This also reduces pounding vibrations from hammers and eliminates new nail holes each time the panel is replaced.

For windows, the most common security feature is the closure of the openings; this may be achieved with wooden or pre-formed panels or, as needed, with metal sheets or concrete blocks. Plywood panels, properly installed to protect wooden frames and properly ventilated, are the preferred treatment from a preservation standpoint.

This painted trompe l'eoil scene on plywood panels is a neighborhood-friendly device. Photo: NPS files.

There are a number of ways to set insert plywood panels into windows openings to avoid damage to frame and sash. One common method is to bring the upper and lower sash of a double hung unit to the mid-point of the opening and then to install pre-cut plywood panels using long carriage bolts anchored into horizontal wooden bracing, or strong backs, on the inside face of the window. Another means is to build new wooden blocking frames set into deeply recessed openings, for example in an industrial mill or warehouse, and then to affix the plywood panel to the blocking frame. If sash must be removed prior to installing panels, they should be labeled and stored safely within the building.

Plywood panels are usually 1/2"-3/4" (1.25-1.875 cm.) thick and made of exterior grade stock, such as CDX, or marine grade plywood. They should be painted to protect them from delamination and to provide a neater appearance. These panels may be painted to resemble operable windows or treated decoratively. With extra attention to detail, the plywood panels can be trimmed out with muntin strips to give a shadow line simulating multi-lite windows. This level of detail is a good indication that the building is protected and valued by the community.

If the building has shutters simply close the shutters and secure them from the interior. If the building had shutters historically, but they are missing, it may be appropriate to install new shutters, even in a modern material, and secure them in the closed position. Louvered shutters will help with interior ventilation if the sash are propped open behind the shutters.

There is some benefit from keeping windows unboarded if security is not a problem. The building will appear to be occupied, and the natural air leakage around the windows will assist in ventilating the interior. The presence of natural light will also help when periodic inspections are made. Rigid polycarbonate clear storm glazing panels may be placed on the window exterior to protect against glass breakage. Because the sun's ultraviolet rays can cause fading of floor finishes and wall surfaces, filtering pull shades or inexpensive curtains may be options for reducing this type of deterioration for significant interiors. Some acrylic sheeting comes with built-in ultraviolet filters.

A view showing the exterior of the Brearley House, New Jersey, in its mothballed condition Photo: Michael Mills, Ford Farewell Mills Gatsch, Architects.

Securing the building from catastrophic destruction from fire, lightning, or arson will require additional security devices. Lightning rods properly grounded should be a first consideration if the building is in an area susceptible to lightning storms. A high security fence should also be installed if the property cannot be monitored closely. These interventions do not require a power source for operation. Since many buildings will not maintain electrical power, there are some devices available using battery packs, such as intrusion alarms, security lighting, and smoke detectors which through audible horn alarms can alert nearby neighbors. These battery packs must be replaced every 3 months to 2 years, depending on type and use. In combination with a cellular phone, they can also provide some level of direct communication with police and fire departments.

If at all possible, new temporary electric service should be provided to the building. Generally a telephone line is needed as well. A hard wired security system for intrusion and a combination rate-of-rise and smoke detector can send an immediate signal for help directly to the fire department and security service. Depending on whether or not heat will be maintained in the building, the security system should be designed accordingly. Some systems cannot work below 32∞F (0∞C). Exterior lighting set on a timer, photo electric sensor, or a motion/infra-red detection device provides additional security.

Providing Adequate Ventilation to the Interior

Once the exterior has been made weathertight and secure, it is essential to provide adequate air exchange throughout the building. Without adequate air exchange, humidity may rise to unsafe levels, and mold, rot, and insect infestation are likely to thrive. The needs of each historic resource must be individually evaluated because there are so many variables that affect the performance of each interior space once the building has been secured.

A mechanical engineer or a specialist in interior climates should be consulted, particularly for buildings with intact and significant interiors. In some circumstances, providing heat during the winter, even at a minimal 45∞ F (7∞C), and utilizing forced-fan ventilation in summer will be recommended and will require retaining electrical service. For masonry buildings it is often helpful to keep the interior temperature above the spring dew point to avoid damaging condensation. In most buildings it is the need for summer ventilation that outweighs the winter requirements.

This exhaust fan has tamper-proof housing. Photo: Michael Mills, Ford Farewell Mills Gatsch, Architects.

Many old buildings are inherently leaky due to loose-fitting windows and floorboards and the lack of insulation. The level of air exchange needed for each building, however, will vary according to geographic location, the building's construction, and its general size and configuration.

There are four critical climate zones when looking at the type and amount of interior ventilation needed for a closed up building: hot and dry (southwestern states); cold and damp (Pacific northwest and northeastern states); temperate and humid (Mid-Atlantic states, coastal areas); and hot and humid (southern states and the tropics).

Once closed up, a building interior will still be affected by the temperature and humidity of the exterior. Without proper ventilation, moisture from condensation may occur and cause damage by wetting plaster, peeling paint, staining woodwork, warping floors, and in some cases even causing freeze thaw damage to plaster. If moist conditions persist in a property, structural damage can result from rot or returning insects attracted to moist conditions. Poorly mothballed masonry buildings, particularly in damp and humid zones have been so damaged on the interior with just one year of unventilated closure that none of the interior finishes were salvageable when the buildings were rehabilitated.

The absolute minimum air exchange for most mothballed buildings consists of one to four air exchanges every hour; one or two air exchanges per hour in winter and twice that amount in summer. Even this minimal exchange may foster mold and mildew in damp climates, and so monitoring the property during the stabilization period and after the building has been secured will provide useful information on the effectiveness of the ventilation solution.

Portable monitors are used to record temperature and humidity conditions in historic buildings during mothballing. Photo: NPS files.

There is no exact science for how much ventilation should be provided for each building. There are, however, some general rules of thumb. Buildings, such as adobe structures, located in hot and arid climates may need no additional ventilation if they have been well weatherized and no moisture is penetrating the interior. Also frame buildings with natural cracks and fissures for air infiltration may have a natural air exchange rate of 3 or 4 per hour, and so in arid as well as temperate climates may need no additional ventilation once secured. The most difficult buildings to adequately ventilate without resorting to extensive louvering and/or mechanical exhaust fan systems are masonry buildings in humid climates. Even with basement and attic vent grills, a masonry building many not have more than one air exchange an hour. This is generally unacceptable for summer conditions. For these buildings, almost every window opening will need to be fitted out with some type of passive, louvered ventilation.

Depending on the size, plan configuration, and ceiling heights of a building, it is often necessary to have louvered opening equivalent to 5%-10% of the square footage of each floor. For example, in a hot humid climate, a typical 20'x30' (6.1m x 9.1m) brick residence with 600 sq. ft.(55.5 sq.m) of floor space and a typical number of windows, may need 30-60 sq. ft. (2.75sq.m-5.5 sq. m) of louvered openings per floor. With each window measuring 3'x5'(.9m x 1.5 m) or 15 sq. ft. (1.3 sq.m), the equivalent of 2 to 4 windows per floor will need full window louvers.

Small pre-formed louvers set into a plywood panel or small slit-type registers at the base of inset panels generally cannot provide enough ventilation in most moist climates to offset condensation, but this approach is certainly better than no louvers at all. Louvers should be located to give cross ventilation, interior doors should be fixed ajar at least 4" (10cm) to allow air to circulate, and hatches to the attic should be left open.

Monitoring devices which can record internal temperature and humidity levels can be invaluable in determining if the internal climate is remaining stable. These units can be powered by portable battery packs or can be wired into electric service with data downloaded into laptop computers periodically. This can also give long-term information throughout the mothballing years. If it is determined that there are inadequate air exchanges to keep interior moisture levels under control, additional passive ventilation can be increased, or, if there is electric service, mechanical exhaust fans can be installed. One fan in a small to medium sized building can reduce the amount of louvering substantially.

If electric fans are used, study the environmental conditions of each property and determine if the fans should be controlled by thermostats or automatic timers. Humidistats, designed for enclosed climate control systems, generally are difficult to adapt for open mothballing conditions. How the system will draw in or exhaust air is also important. It may be determined that it is best to bring dry air in from the attic or upper levels and force it out through lower basement windows. If the basement is damp, it may be best to zone it from the rest of the building and exhaust its air separately. Additionally, less humid day air is preferred over damper night air, and this can be controlled with a timer switch mounted to the fan.

The type of ventilation should not undermine the security of the building. The most secure installations use custom-made grills well anchored to the window frame, often set in plywood security panels. Some vents are formed using heavy millwork louvers set into existing window openings. For buildings where security is not a primary issue, where the interior is modest, and where there has been no heat for a long time, it may be possible to use lightweight galvanized metal grills in the window openings. A cost effective grill can be made from the expanded metal mesh lath used by plasterers and installed so that the mesh fins shed rainwater to the exterior.

Securing Mechanical Systems and Utilities

At the outset, it is important to determine which utilities and services, such as electrical or telephone lines, are kept and which are cut off. As long as these services will not constitute a fire hazard, it is advisable to retain those which will help protect the property. Since the electrical needs will be limited in a vacant building, it is best to install a new temporary electric line and panel (100 amp) so that all the wiring is new and exposed. This will be much safer for the building, and allows easy access for reading the meter.

Most heating systems are shut down in long term mothballing. For furnaces fueled by oil, there are two choices for dealing with the tank. Either it must be filled to the top with oil to eliminate condensation or it should be drained. If it remains empty for more than a year, it will likely rust and not be reusable. Most tanks are drained if a newer type of system is envisioned when the building is put back into service. Gas systems with open flames should be turned off unless there is regular maintenance and frequent surveillance of the property. Gas lines are shut off by the utility company.

If a hot water radiator system is retained for low levels of heat, it generally must be modified to be a self-contained system and the water supply is capped at the meter. This recirculating system protects the property from extensive damage from burst pipes. Water is replaced with a water/glycol mix and the reserve tank must also be filled with this mixture. This keeps the modified system from freezing, if there is a power failure. If water service is cut off, pipes should be drained. Sewerage systems will require special care as sewer gas is explosive. Either the traps must be filled with glycol or the sewer line should be capped off at the building line.

Developing a Maintenance and Monitoring Plan

While every effort may have been made to stabilize the property and to slow the deterioration of materials, natural disasters, storms, undetected leaks, and unwanted intrusion can still occur. A regular schedule for surveillance, maintenance, and monitoring should be established. The fire and police departments should be notified that the property will be vacant. A walk-through visit to familiarize these officials with the building's location, construction materials, and overall plan may be invaluable if they are called on in the future.

The optimum schedule for surveillance visits to the property will depend on the location of the property and the number of people who can assist with these activities. The more frequent the visits to check the property, the sooner that water leaks or break-ins will be noticed. Also, the more frequently the building is entered, the better the air exchange. By keeping the site clear and the building in good repair, the community will know that the building has not been abandoned. The involvement of neighbors and community groups in caring for the property can ensure its protection from a variety of catastrophic circumstances.

The owner may utilize volunteers and service companies to undertake the work outlined in the maintenance chart. Service companies on a maintenance contract can provide yard, maintenance, and inspection services, and their reports or itemized

bills reflecting work undertaken should be added to update the building file.

Mothballing Checklist

In reviewing mothballing plans, the following checklist may help to ensure that work items are not inadvertently omitted.

Moisture

- Is the roof watertight?
- Do the gutters retain their proper pitch and are they clean?
- Are downspout joints intact?
- Are drains unobstructed?
- Are windows and doors and their frames in good condition?
- Are masonry walls in good condition to seal out moisture?
- Is wood siding in good condition?
- Is site properly graded for water run-off?
- Is vegetation cleared from around the building foundation to avoid trapping moisture?

Pests

- Have nests/pests been removed from the building's interior and eaves?
- Are adequate screens in place to guard against pests?
- Has the building been inspected and treated for termites, carpenter ants, rodents, etc.?
- If toxic droppings from bats and pigeons are present, has a special company been brought in for its disposal?

Housekeeping

- Have the following been removed from the interior: trash, hazardous materials such as inflammable liquids, poisons, and paints and canned goods that could freeze and burst?
- Is the interior broom-clean?
- Have furnishings been removed to a safe location?
- If furnishings are remaining in the building, are they properly protected from dust, pests, ultraviolet light, and other potentially harmful problems?
- Have significant architectural elements that have become detached from the building been labeled and stored in a safe place?
- Is there a building file?

Security

- Have fire and police departments been notified that the building will be mothballed?
- Are smoke and fire detectors in working order?
- Are the exterior doors and windows securely fastened?
- Are plans in place to monitor the building on a regular basis?
- Are the keys to the building in a secure but accessible location?
- Are the grounds being kept from becoming overgrown?

Utilities

- Have utility companies disconnected/shut off or fully inspected water, gas, and electric lines?
- If the building will not remain heated, have water pipes been drained and glycol added?
- If the electricity is to be left on, is the wiring in safe condition?

Ventilation

- Have steps been taken to ensure proper ventilation of the building?
- Have interior doors been left open for ventilation purposes?
- Has the secured building been checked within the last 3 months for interior dampness or excessive humidity?

Maintenance Chart

1-3 months; periodic

- regular drive by surveillance
- check attic during storms if possible
- monthly walk arounds
- check entrances
- check window panes for breakage
- mowing as required
- check for graffiti or vandalism
- enter every 3 months to air out
- check for musty air
- check for moisture damage
- check battery packs and monitoring equipment
- check light bulbs
- check for evidence of pest intrusion

Every 6 months; spring and fall

- site clean-up; pruning and trimming
- gutter and downspout check
- check crawlspace for pests
- clean out storm drains

Every 12 months

- maintenance contract inspections for equipment/utilities
- check roof for loose or missing shingles
- termite and pest inspection/treatment
- exterior materials spot repair and touch up painting
- remove bird droppings or other stains from exterior
- check and update building file

Summary and References

Providing temporary protection and stabilization for vacant historic buildings can arrest deterioration and buy the owner valuable time to raise money for preservation or to find a compatible use for the property. A well planned mothballing project involves documenting the history and condition of the building, stabilizing the structure to slow down its deterioration, and finally, mothballing the structure to secure it. The three highest priorities for a mothballed building are 1) to protect the building from sudden loss, 2) to weatherize and maintain the property to stop moisture penetration, and 3) to control the humidity levels inside once the building has been secured.

While issues regarding mothballing may seem simple, the variables and intricacies of possible solutions make the decision-making process very important. Each building must be individually evaluated prior to mothballing. In addition, a variety of professional services as well as volunteer assistance is needed for careful planning and repair, sensitively designed protection measures, follow-up security surveillance, and cyclical maintenance.

In planning for the future of the building, complete and systematic records must be kept and generous funds allocated for mothballing. This will ensure that the historic property will be in stable condition for its eventual preservation, rehabilitation, or restoration.

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This publication has been prepared pursuant to the National Historic Preservation Act of 1966, as amended, which directs the Secretary of the Interior to develop and make available information concerning historic properties. Technical Preservation Services (TPS), National Park Service prepares standards, guidelines, and other educational materials on responsible historic preservation treatments to a broad public.

September 1993

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Solon, Thomas E. "Security Panels for the Foster-Armstrong House." Association for Preservation Technology Bulletin. Vol XVI no. 3 and 4, 1984. (note the design of the panels, but be aware that additional louvering may be needed on other projects).

PART V Closing

11.0 Closing

The lands within the MiX District represent a key future strategic employment area for the City of Markham and the broader Greater Toronto Area. The vision of the City will provide for a vibrant area with a range of employment opportunities and economic draw. The presence of cultural heritage resources within this area presents a challenge but also an opportunity for the existing landowners in the area.

Based on the work completed, recommendations have been provided as to how the various properties could be integrated into the MiX District as the area transforms the future. A future policy change has also been recommended in order to assist in realizing the full potential of the MiX District over the next 25 years. Finally, it is recommended that City staff further investigate the potential create an expanded or additional Markham Heritage Estates to accommodate potential building relocation.

The guidance in the report will assist the City in planning for the future of this important area of the City of Markham.