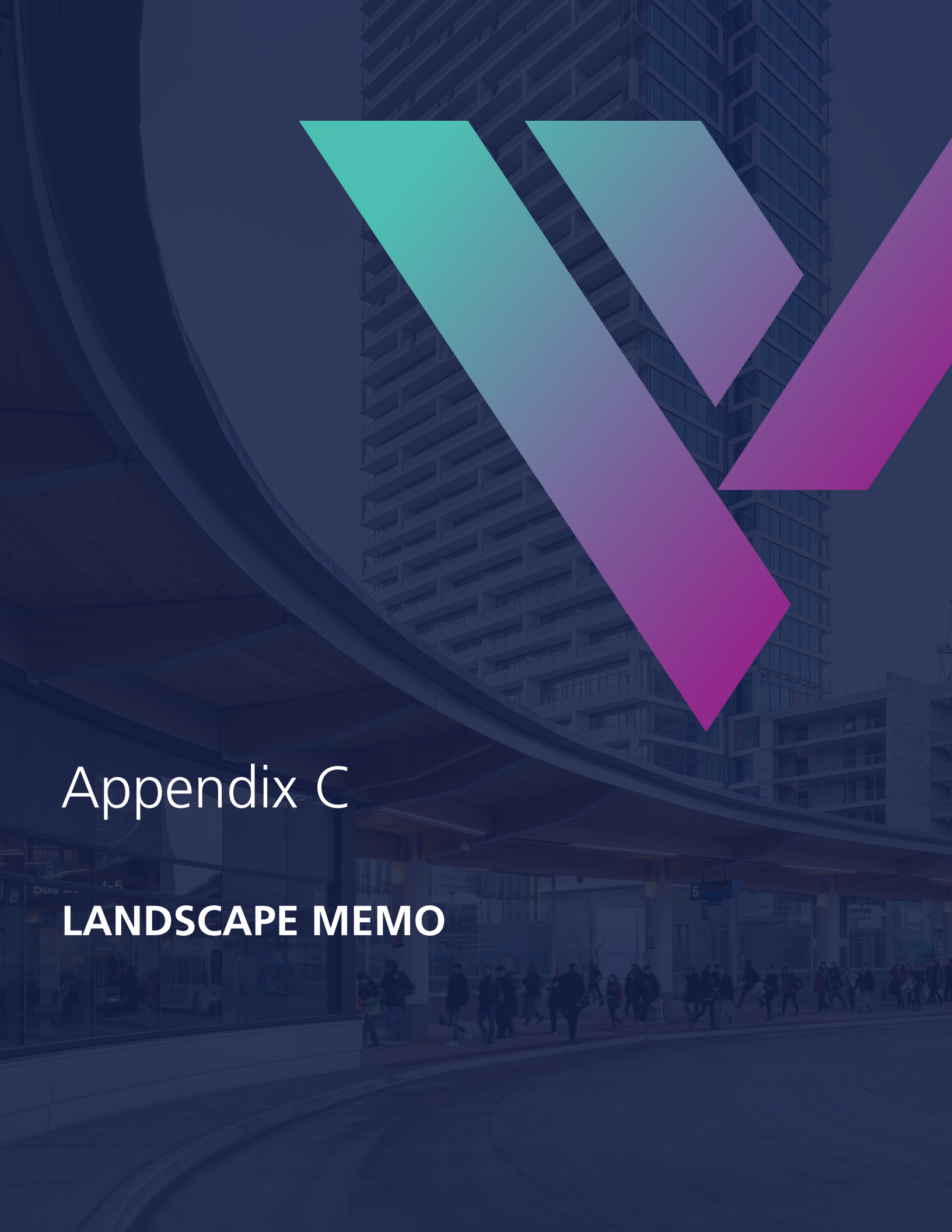

Appendix C

LANDSCAPE MEMO

VMC
Schedule 'C' Class Environmental Assessment (EA) Studies for the Extensions of Interchange Way and Millway Avenue

Landscape Memo

FINAL
June 2025

DOWNTOWN
vaughan
METROPOLITAN CENTRE

Signatures and Disclaimers

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1 Introduction

WSP Canada Inc. (WSP) has been retained by the City of Vaughan to assist in the Municipal Class Environmental Assessment (MCEA) process for the extensions of Interchange Way from Commerce Street to Creditstone Road, and Millway Avenue from Highway 7 to Interchange Way. WSP is also assisting the City in updating the Transportation Master Plan (TMP) to confirm transportation needs, supportive policies, and a phasing strategy to 2051 with a focus on street connectivity, accessibility, and support for multi-modal mobility (i.e., walking, cycling, transit, ride share). This memo will focus on the streetscape and landscape design for the MCEA roadway extensions.

The purpose of this memo is to document and demonstrate the project process and findings. The memo provides a summary of existing conditions, land uses for the corridor and surrounding connecting areas, and an overview of related transportation and urban planning-related documentation and their application to Interchange Way and Millway Avenue. The memo also describes the preferred design alternative and considerations for the implementation of the future streetscape.

1.1 The Vaughan Metropolitan Centre

The Vaughan Metropolitan Centre (VMC) is an Urban Growth Centre, as identified in the Growth Plan for the Greater Golden Horseshoe and is identified as a Regional Centre in the York Region Official Plan. The total VMC study area is shown below in Figure 1: VMC Secondary Plan Study Area.

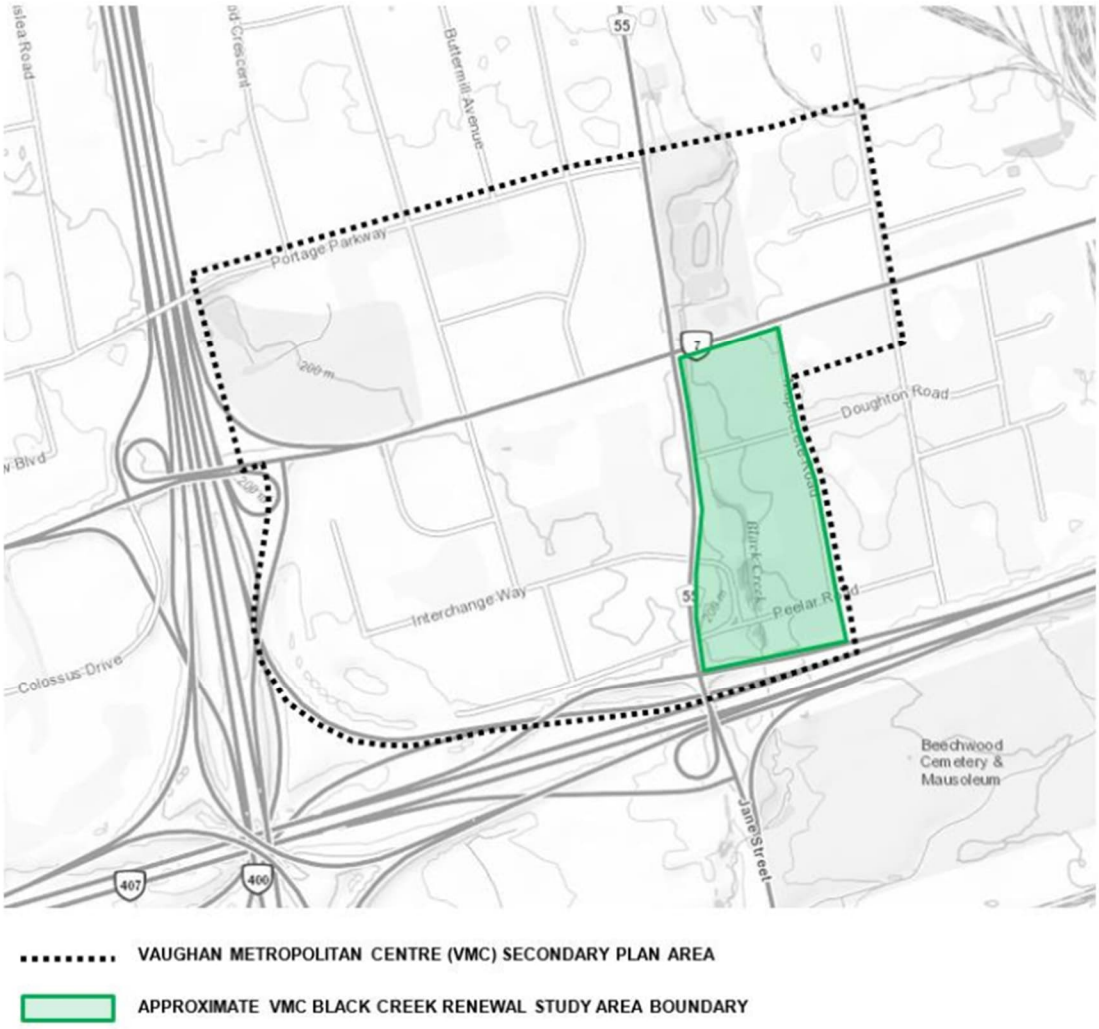

Figure 1: VMC Secondary Plan Study Area

The original VMC Secondary Plan envisioned accommodating a minimum of 25,000 residents and 11,500 jobs by 2031 and is the subject of a detailed Secondary Plan (currently being updated). The VMC is also identified in Vaughan's Official Plan at the top of the hierarchy of centres and will be a major focus for intensification for a wide range of residential, office, retail, cultural, and civic uses, including the tallest buildings and most intense concentration of development within the City. Through the Secondary Plan and other existing Master Planning documents the VMC is envisioned as a future downtown for the City, centered on the subway station at Highway 7 and Millway Avenue. The

concentration of the highest densities and widest mix of uses in Vaughan will enable the development of a multifaceted and dynamic place. As the VMC develops, this MCEA provides an opportunity to build on existing Master Plans and policy documents to promote pedestrian-friendly, transit-oriented, complete streets.

1.2 Study Area

As illustrated in Figure 2: VMC Interchange Way and Millway Avenue MCEA Study Area, the study area for the Interchange Way and Millway Avenue MCEA is bounded by Creditstone Road to the east, Highway 400 to the west, Highway 7 to the north, and 407 ETR to the south.

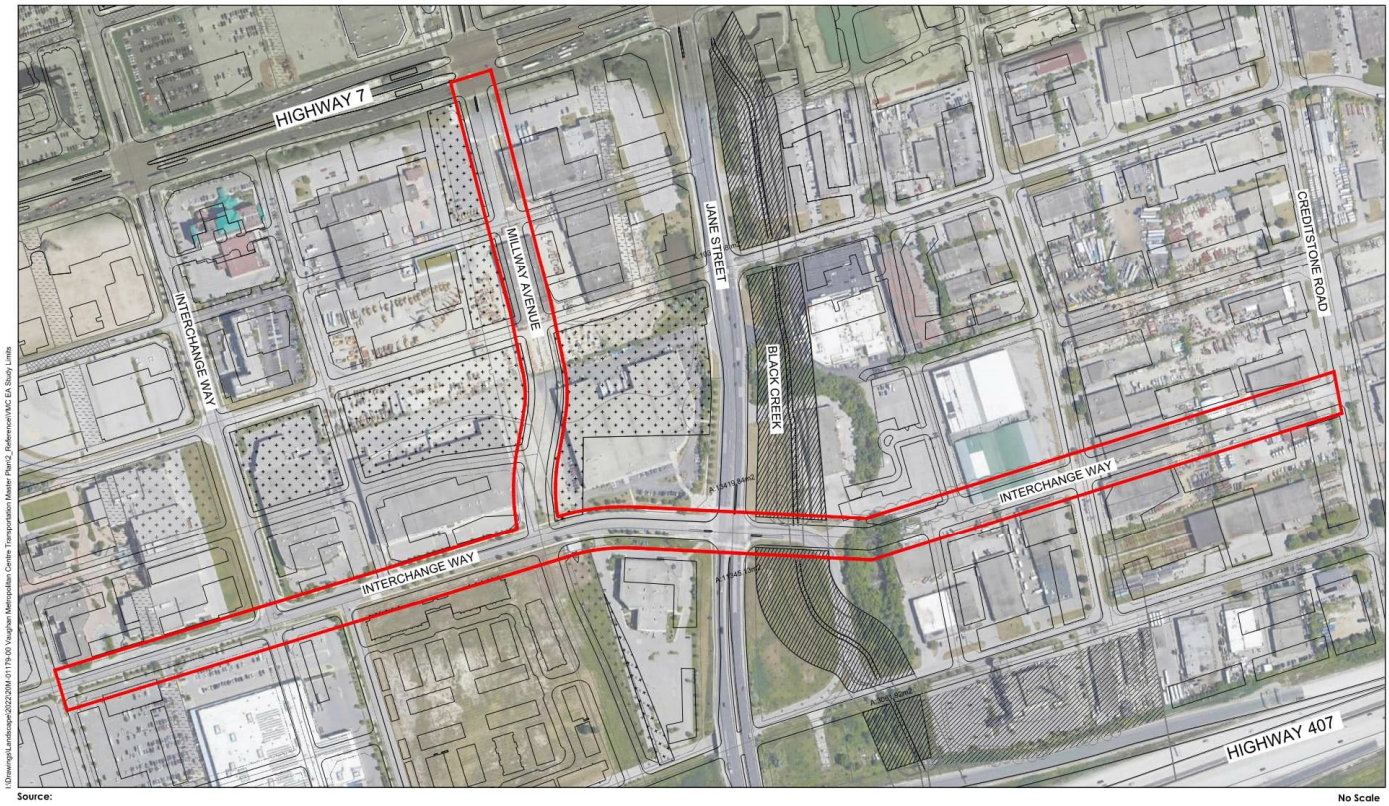

Figure 2: VMC Interchange Way and Millway Avenue MCEA Study Area

2 Existing Conditions and Background Review

2.1 Background Review

A background review of current and draft policy and master planning documents was completed to provide a fulsome background analysis and snapshot of the current planning framework within which this MCEA falls. The sections below include summaries of these documents and information sources.

2.1.1 Background Information Sources

Primary sources of information reviewed through this process are listed below, with a full list of references provided at the end of this report:

- Aerial photography of the Study Area
- Photographs taken during field visits (2021)
- Existing Conditions Report (WSP, 2021b)
- Stage 1 Archaeological Assessment (WSP, 2021a)
- Cultural Heritage Report (WSP, 2022a)
- Provincial Planning Policies
  - A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020)
  - Provincial Policy Statement (2020)
- Regional Planning Policies
  - York Region Official Plan (2022)
  - York Region Transportation Master Plan (2022)
- City of Vaughan Policy Framework
  - City of Vaughan Official Plan (2010 & Ongoing Update)

- City of Vaughan Transportation Master Plan: A New Path (2012)
- Vaughan Transportation Plan (2019 & Ongoing Update)
- Pedestrian and Bicycle Master Plan Update (2020)

— VMC Policy Framework and Background Studies

- VMC Secondary Plan (partially approved 2021, Urban Strategies Inc. & Aecom, 2017)
- VMC Streetscape and Open Space Plan (2018)
- VMC Urban Design Guidelines (2016)
- VMC Transportation Master Plan (2012 & Ongoing Update)
- VMC and Surrounding Area Transportation Study (2013)
- VMC Culture and Public Art Framework (2015)

— Black Creek Renewal Detailed Design (Ongoing)

- Portage Parkway Class EA Study: Widening and Easterly Extension to Creditstone Road
- Weston Road and Highway 7 Secondary Plan and Transportation Master Plan (Ongoing)
- Concord GO Centre Secondary Plan (2015), Concord GO Centre Mobility Hub Study (Ongoing) and Concord GO Centre Transportation Master Plan (Ongoing)

2.1.2 Provincial Planning Policies

A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020)

A Place to Grow: Growth Plan for the Greater Golden Horseshoe ("Growth Plan"), 2020, was prepared and approved under the *Places to Grow Act* (2005), a legal framework that implements the Province's vision for managing growth within the Greater Golden Horseshoe (GGH). Amendment 1 to the Growth Plan was approved by Council to take effect in August 2020.

The GGH is a dynamic and diverse area, and one of the fastest growing regions in North America. By 2051, the Region of York is forecast to grow by 2 million people and

approximately 1 million jobs. Section 2.2.3 of the Growth Plan identifies the VMC as one of 25 Urban Growth Centres, which are strategic focal points for growth and intensification. Urban Growth Centres are intended to:

- Be focal areas for investment in regional public service facilities, as well as commercial, recreational, cultural, and entertainment uses.
- Accommodate and support the transit network at the regional scale and provide connection points for inter- and intra-regional transit.
- Serve as high-density major employment centres that will attract provincially, nationally, or internationally significant employment uses; and
- Accommodate significant population and employment growth.

The VMC area is to achieve a minimum density target of 200 residents and jobs combined per hectare by 2031 or earlier. It is anticipated that, as the VMC redevelops and intensifies, surrounding employment lands will also be the focus of redevelopment and intensification with increased employment growth.

Provincial Policy Statement (2020)

The Provincial Policy Statement ("PPS"), 2020, is issued under the *Planning Act* and provides policy direction for the use and management of land and infrastructure, opportunities for employment and residential development, and protecting the natural environment and resources. Sections of the PPS that are applicable to the VMC streetscape include:

- Part IV Vision for Ontario's Land Use Planning System – The development of land should be optimized to promote efficient use of land, resources and public investment in infrastructure and public service facilities. These land use patterns promote mixed uses including residential, employment, recreation, parks, and open space. The supporting transportation infrastructure is to provide choices and promote increased use of active transportation as well as transit before other modes of travel. This is in support of building livable and healthy communities.
- Part V Policies – Specifically, Sections 1.1.5, 1.6.7 and 1.6.8. Section 1.1.5 Building Strong, Healthy Communities promotes the planning of public streets to be safe, meet the needs of pedestrians, foster social interaction, and facilitate active transportation and community connectivity. Section 1.6.7 and 1.6.8 outline the

policies for infrastructure and public service facilities under transportation systems and corridors. Emphasis is on safe streets which are energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.

2.1.3 Regional Planning Policies

York Region Official Plan (2022)

The purpose of the York Region Official Plan ("YROP") (approved by Ministry of Municipal Affairs and Housing in 2022 pending minor changes due to Provincial Bill 150 and proposed Bill 162) is to provide a long-term strategic policy framework for guiding growth and development, with opportunities for more detailed planning by local municipalities. The YROP is the result of a Municipal Comprehensive Review, completed in order the ensure the Plan continues to accommodate for the future planned growth within the Region.

The 2022 YROP outlines key goals relevant to the streetscape, including:

- Enhanced mobility systems using a "people and transit first approach" to connect land use and transportation planning utilizing York Region Master Plans for transportation, transit, and all forms of active transportation.
- Standards that advance requirements for sustainable communities and buildings, water and energy conservation and management, low or no carbon energy systems, waste reduction, compact and mixed-use development, green building, and urban design in order to mitigate and adapt to climate change including striving towards net-zero greenhouse gas emissions.
- A natural heritage legacy based on protection of a linked and enhanced Regional Greenlands System and water resource system.

York Region Transportation Master Plan (2022)

The York Region Transportation Master Plan ("YRTMP"), 2022, builds on the Regional Official Plan and sets out the infrastructure and policy requirements required to build and maintain the transportation system. This includes planning and policies for additional road

and transit infrastructure, and a system of sidewalks and trails to facilitate active transportation. The YRTMP objectives include:

- Make the best use of infrastructure and services.
- Encourage all types of travel.
- Provide a resilient and adaptable transportation network.
- Enhance partnerships.
- Actively engage and share information; and
- Align project costs.

The VMC is recognised as a Mobility Hub in the YRTMP, as defined in the Metrolinx Regional Transportation Plan. Some of the policies and recommendations in the YRTMP state that the Region will implement a Rapid Transit network (which has since been constructed along Highway 7) and continue to improve and expand the services outside the RT network. The YRTMP states that it will continue to collaborate with local municipalities as they develop and implement their active transportation plans and work with local municipalities to proactively review ways to make existing communities more complete through interventions addressing both land use and transportation systems.

2.1.4 City of Vaughan Policy Framework

City of Vaughan Official Plan (2010 & Ongoing Update)

The City of Vaughan Official Plan ("VOP"), 2010 includes goals for sustainable city-building, while managing projected growth to 2031. Initiated and passed by Council and partially approved by the Ontario Municipal Board, it will shape the future of the City. The overall Growth Management Strategy in the VOP consists of three main components:

- Vision 2020 – the City's Strategic Plan.
- Green Directions – the City's Sustainability Master Plan; and
- A Plan for Transformation – the City's new Official Plan.

The main principles of Vaughan's vision and the resultant policies are summarized through eight key themes, including a Vibrant and Thriving Downtown and A Green and Sustainable City.

With respect to the goal of a vibrant and thriving downtown, the VMC is envisioned to become the City of Vaughan's downtown core – the highest density node within the City and a focus for civic activities, business, shopping, entertainment, and living. The VMC can accommodate a significant amount of Vaughan's planned residential and employment growth and it is an appropriate location for major Institutional uses. Through planning, design, programming, and investment, the VMC will be the focus of Vaughan's identity.

The VOP 2010 provides direction in transforming the transportation network within the City. The OP notes the following transportation policies applicable to the VMC TMP Study:

- To establish a comprehensive transportation network that allows a full range of mobility options, including walking, cycling, and transit;
- Developed as a pedestrian-friendly and transit-oriented place, providing a variety of housing options, and diverse employment opportunities;
- A transit-modal split of 50% during peak periods is targeted for the VMC study area and Regional Intensification Corridors by 2031;
- Land-use planning decisions within Intensification Areas should maximize the use of existing and planned transit infrastructure taking into account potential impacts on nearby neighbourhoods; and
- To consider the coordination of central bicycle parking facilities, which may also include supporting amenities such as lockers, showers, and changing facilities in the VMC.

At the time of the preparation of this Landscape Memo, the City of Vaughan has committed to an Official Plan Review. The Official Plan Review is intended to build on the comprehensive policy structure established by the VOP 2010. The resulting Plan will take into consideration the changing Provincial policy regime and the evolving circumstances and issues that will influence planning in the Greater Golden Horseshoe to 2041 and beyond. The intent is to produce a 'made in Vaughan' response to the future, prepared with public input and consultation on the desired long-term vision. The Official Plan is a key component of the City's overall growth management strategy to 2041.

City of Vaughan Transportation Master Plan: A New Path (2012)

The City of Vaughan's Transportation Master Plan ("TMP"), 2012, identified key transportation issues and provided strategic direction on options to set the stage for

development of a long-range transportation vision through to the year 2031. In 2019 the City initiated an update to the 2012 TMP as part of the new Growth Management Strategy and City's Official Plan. Refer to Vaughan Transportation Plan (2019 & Ongoing update) below.

Vaughan Transportation Plan (2023)

In 2023, the City of Vaughan completed an update to the 2019 Transportation Master Plan: A New Path. Vaughan is a dynamic city that is growing quickly, and has recognized the need for more transportation options to accommodate this increased population. The new Vaughan Transportation Plan (VTP) identifies and highlights projects to meet the needs of current and future residents, businesses and visitors as Vaughan grows for the next 20 years, including innovative, accessible, and functional transportation options. The Plan investigates alternatives, such as new cycling infrastructure, improved use of emerging and innovative technologies, and better use of new roads to improve the quality and sustainability of travel.

Pedestrian and Bicycle Master Plan (2020)

The 2020 Pedestrian and Bicycle Master Plan focuses on creating a more walkable and bikeable city. The Master Plan focuses on the following four key themes that emerged as community priorities:

- Safety through physically separated pedestrian and cycling infrastructure.
- Infrastructure will be advanced in a cost-effective yet timely manner.
- Connectivity through prioritizing initiatives, such as Vaughan Super Trail, VMC Separated Cycling Network, mini networks, and intensification areas; and
- Awareness and Culture will be fostered through ongoing education and outreach, as well as expanding active transportation policies in applicable City plans.

The Pedestrian and Bicycle Master Plan includes recommendations to prioritize the buildout of the VMC Separated Cycling Network as part of the key theme "Connectivity" and to implement pedestrian facilities on both sides of every street within 800 meters of the VMC study area. The Separated Cycling Network prioritizes space for cycling, with more than 20 kilometres of physically separated cycling facilities and multi-use recreational trails planned for.

2.1.5 VMC Policy Framework and Background Studies

VMC Secondary Plan (2021)

The VMC Secondary Plan Review began in 2008 as part of the City's Growth Management Strategy: Vaughan Tomorrow. The VMC Secondary Plan ("VMCSP") was approved by Council to form part of Volume 2 of the VOP 2010 and was partially approved by the Ontario Municipal Board in December 2015, December 2016, February 2017, June 2017, and the Local Planning Appeal Tribunal in May 2021. Some area-specific parts of the VMC Secondary Plan remain under appeal and not in-effect at the time of writing of this technical memo.

In 2020 City initiated an update to the VMCSP. At the time of writing the Secondary Plan update is ongoing; the VMCSP remains the applicable policy.

The following principles described the long-term vision for the VMC: Transit-oriented; Walkable; Accessible; Diverse; Vibrant; Green; and Beautiful. Section 4 of the Plan discusses the VMC streets and transportation network and outlines specific policies regarding transportation in general, public transit, the street network, streetscaping, the bicycle network, and parking. The intent of these policies is to:

- Develop a multi-modal transportation system in the VMC that is efficient, safe, and convenient and supports planned land uses.
- Encourage routine use of existing and planned transit services by residents and workers in the VMC and Vaughan citizens generally.
- Encourage walking or cycling for most daily trips within the VMC.
- Establish and maintain logical and direct connections to the surrounding network of streets and highways.
- Encourage the diversion of through traffic, particularly truck traffic, to peripheral streets.
- Ensure the provision and efficient use of parking facilities, including parking structures and on-street parking, required to support the planned land uses; and
- Ensure planned and appropriate transportation infrastructure, including public transit facilities and streets, is coordinated with development and supports the urban design objectives for the VMC.

VMC Secondary Plan Update (Ongoing)

In September 2020, the City of Vaughan initiated an update to the VMC Secondary Plan (VMCSP) to address provincial and regional policy updates, and to respond to the rapid growth that has exceeded expectations resulting in a residential intensity that was not anticipated when the VMCSP was initially developed. The Secondary Plan update will also consider a boundary expansion to potentially include additional lands in the area, as well as review the current height and density permissions and land-use plan. Ultimately, this update will result in a revised secondary plan that supports the development of the VMC as a complete community to 2051 and beyond. Highlights from the VMCSP Update include expanding the VMC boundaries to approximately follow the Protected Major Transit Station Areas (PMTSA) boundaries, and making the required changes to the Plan to set parameters for minimum heights and densities without prescribed maximums.

Updates to the VMC Secondary Plan policy framework will continue to recognize the VMC as the City's priority intensification area and downtown, while ensuring the area continues to develop as a complete community and support the City's strategic priorities as outlined in the 2018-2022 Term of Council Service Excellence Strategic Plan. The VMCSP update is being carried out concurrently with an update to the VMC Transportation Plan (2012). The VMC Transportation Plan update will confirm the transportation needs of the VMC and is further discussed in the following section of this report.

In addition to the VMC TMP update, a number of supporting studies are taking place at the same time and will inform the VMC Secondary Plan review, including the following, discussed in further detail in the succeeding sub-sections:

1. Vaughan Official Plan Review
2. VMC Parks and Wayfinding Master Plan
3. Integrated Urban Water Plan

Vaughan Official Plan Review

The City of Vaughan has committed to an Official Plan Review. This is further discussed in Section 2.1.4.

VMC Parks and Wayfinding Master Plan

The City of Vaughan is undertaking the VMC Parks and Wayfinding Master Plan to prepare a master plan and implementation strategy for the timely development of parks and open space in the VMC. This involves developing a wayfinding signage strategy to simplify navigation throughout the area.

The VMC Parks and Wayfinding Master Plan will build on existing groundwork to enable the implementation of a diverse, multi-functional, and seamlessly interconnected parks and open space network. The goals of the study are to:

- Assess the parks and open spaces proposed for the VMC.
- Define the character and design of the parks and open spaces proposed for the VMC.
- Create a phasing and implementation plan for the delivery of the parks and open spaces proposed for the VMC alongside development; and
- Develop a wayfinding strategy and design, produce prototypes and install the first signage elements for the VMC area as part of a pilot project.

As residential development applications exceed targets in the VMC, the number of visitors and commuters in the workforce will expand and result in an urgent need to build its public space. The VMC Parks and Wayfinding Master Plan will address these challenges and guide the development of a connected system of parks and open spaces as well as reinforce physical and visual connections and wayfinding.

The plan will embrace opportunities to make meaningful public places, enhance natural features, locate public art, improve multi-modal mobility, and increase the vibrancy of the emerging downtown. It will also develop and implement a coherent signage system that extends throughout the downtown's parks and open spaces and across transportation modes.

Further, the wayfinding component of this study recognizes that a comprehensive public realm signage and wayfinding system is a core service of the City for its residents, businesses, and visitors. A Signage and Wayfinding Master Plan was developed in 2024 which will guide signage and wayfinding within the VMC. The VMC Parks and Wayfinding Master Plan study makes detailed recommendations and future, downtown-wide implementation will follow as the VMC continues to develop.

Integrated Urban Water Plan

The Integrated Urban Water Plan study evaluates servicing plans for current and future developments and identifies alternative solutions and sustainability initiatives. The study integrates current sustainability, resiliency, and climate change adaptation/mitigation initiatives identified in Green Directions Vaughan and the Official Plan Review. The Plan also takes into consideration Major Transit Station Areas (MTSAs), as per York Region's Municipal Comprehensive Review, to create new tools based on best practices.

Based on the findings of the study, the Integrated Urban Water Plan includes water, wastewater, and stormwater strategies and sustainable green initiatives. The study identifies and evaluates long-term strategies, initiatives, programs, and projects to meet servicing needs for the growth and protection of Vaughan's Natural Heritage Network.

VMC Transportation Master Plan (2012 & Ongoing Update)

The scope of the VMC Transportation Plan included identifying appropriate population and employment projections and necessary road network improvements for the 2031 planning horizon. This involved classification of roadway segments and identification of required rights-of-way, identification of TDM programs, transit, and cycling initiatives. The transportation plan also addressed the needs of the 2021 planning horizon and developed an implementation strategy for the necessary improvements. For more information refer to Existing Conditions Report (WSP, 2021b).

VMC and Surrounding Area Transportation Study (2013)

The purpose of the VMC and Surrounding Areas Transportation Study (2013) is to further define the transportation infrastructure needed to facilitate planned (and potential) development within the VMC and surrounding areas, based on the approved Secondary Plan, that will ensure feasibility from a technical perspective. For more information refer to Existing Conditions Report (WSP, 2021b).

VMC Streetscape and Open Space Plan (2018)

The VMC Streetscape and Open Space ("SOS") Plan outlines a comprehensive landscape framework for the implementation of the public realm identified for the VMC. Building on

the vision and principles set out in the VMC Secondary Plan, outlined above, the following goals were identified for the SOS Plan:

- Create a unique identity for the VMC.
- Develop a strong public realm framework and green infrastructure system.
- Develop a connected urban centre.
- Promote high quality design; and
- Develop a healthy and safe community.

The Plan discusses streetscape designs for pedestrian priority zones ("PPZ"), the cycling and transit network, and road classification landscape treatments. PPZs are designed as pedestrian-first places that may include features such as flexible spaces, raised intersections, special surface and/or curb treatments, accent lighting, street furnishings, public art, and weather protection. The Plan designated the following areas as PPZ:

- The primary mobility hub around the subway station, transit square, bus terminal and Millway Avenue Promenade.
- Streets around schools, community centres, cultural and civic buildings;
- Streets that run between park blocks.
- Shopping and entertainment streets to promote pedestrian activity and public life; and,
- Mews, which are pedestrian-first streets that may or may not include vehicle traffic/ service access.

Cycling Network

Cycling facilities in the VMC street network will seamlessly connect with transit facilities, parks, and open spaces to support multi-modal transit connections and to promote cycling. The SOS Plan recommends both on-road and off-road facilities in addition to cycling amenities, such as bike lock-up facilities and a bike-share rental program.

Transit Network

As an Anchor Mobility Hub, the VMC is an important destination and transfer point in the regional system, integrating subway, regional rapid transit, and local bus services. The VMC intends to provide appropriate walking distances to transit stops and/or stations.

VMC Urban Design Guidelines (2016)

The VMC Urban Design Guidelines, which were completed in 2016, are intended to facilitate the implementation of the VMC Secondary Plan by setting a framework for built form excellence. Several 'Character Areas' are outlined in these guidelines, which are based on the land use vision introduced in the previous VMC Secondary Plan precincts. They share common building typologies, interfaces with proposed open spaces, and approaches to access and circulation. The Character Areas relevant to the study area include:

- Highway 7 (Avenue Seven), which is planned to become the central spine of the VMC and transformed into a grand avenue. Some urban design strategies include wide setbacks to build a wide boulevard that should accommodate all users and uses, and strong and consistent streetscape design with enhanced street furnishing.
- Millway Avenue, which is poised to become the cultural and social spine for the VMC that connects the subway and BRT station with the bus terminal. It is intended to be a bustling pedestrian zone and will require wide pedestrian throughways.

Black Creek Renewal Detailed Design (Ongoing)

The VMC Black Creek Renewal Class EA study (2018) considered different potential alignments and physical forms for the Black Creek Renewal between Highway 7 and Highway 407. The EA was based on the preferred solution determined through the Black Creek Storm Water Optimization Study Master Plan Class EA, to reduce flooding and flood damages, improve water quality, and limit stream bank erosion. The Environmental Study Report (ESR) was completed in 2018. The Black Creek Renewal Detailed Design Study is currently ongoing. The Interchange Way and Millway Avenue MCEA could potentially disturb part of the Black Creek corridor in proximity to Peelar Road. This will be further expanded on in Detailed Design.

Portage Parkway Class EA Study: Widening and Easterly Extension to Creditstone Road

In 2016, the City of Vaughan completed an EA Study for two (2) road projects: The Portage Parkway Widening and the Extension to Creditstone Road, which was identified as a strategic network improvement from the 2012 TMP: A New Path. The EA is now complete, and a portion of the Portage Parkway extension (up to Black Creek) has been implemented

east of Jane Street as part of ongoing development. The Interchange Way and Millway Avenue MCEA is within proximity (approx. 1km away) to the Portage Parkway Class EA Study area but no anticipated impacts will occur.

Weston Road and Highway 7 Secondary Plan and Transportation Master Plan (Ongoing)

The Weston Road and Highway 7 Secondary Plan and TMP ("Weston 7 TMP") provides policy direction for the new Primary Growth Centre located to the west of the VMC study area. The City of Vaughan concluded Phase 1 of the Weston 7 Secondary Plan in June 2019, which developed the vision and guiding principles for growth and development in the study area.

Following the commencement of Phases 2 and 3 of the Secondary Plan in May 2020, the City initiated the Weston 7 TMP in November 2020 to develop a long-range planning and implementing framework based on the identification of a multi-modal transportation network, policies, and phasing strategy for improved accessibility and connectivity, for all forms of transportation in support of future growth and transformation.

The Weston 7 TMP was initiated in November 2020 and is ongoing. The Weston 7 TMP is being carried out in accordance with the Municipal Engineers Association Municipal Class Environmental Assessment (as amended 2015) and will satisfy Phases 1 and 2 of the MCEA. The Interchange Way and Millway Avenue MCEA is within proximity (approx. 850m away) to the Weston 7 Study area but no anticipated impacts will occur.

Concord GO Centre Secondary Plan (2015), Concord GO Centre Mobility Hub Study (Ongoing) and Concord GO Centre Transportation Master Plan (Ongoing)

The Concord GO Centre Secondary Plan (2015) provides policy direction for the potential new Concord GO Centre station area, located on Highway 7 east of the CN McMillan Rail Yard. In 2015 the City's Council deferred 2 areas in the Secondary Plan as the Concord GO Station was not approved by Metrolinx due to a negative business case as a result of delays to upstream riders and low ridership concerns. As such, Council directed the City to undertake a Study to provide a business case for a GO Station within Concord.

In January 2020, the City of Vaughan initiated the Concord GO Mobility Hub Study to provide a business case for a GO Station within Concord. The area is envisioned to be mixed-use commercial to support the station. Concord is planned to be a major growth area with 10,000 people and 7,000 jobs per hectare. A Transportation Master Plan (TMP) for the Concord GO Centre Secondary Plan area was initiated in January 2020 to confirm the transportation needs. The Studies are being carried out concurrently. The Concord GO Centre TMP was initiated to develop a multi-modal transportation network by assessing options for street connectivity, accessibility, and mobility. The Study also considers the impact of a new potential GO Train Station in the Concord GO study area.

VMC Culture and Public Art Framework (2015)

Within the VMC Cultural and Public Art Framework (CAPA), Millway Avenue is envisioned as a main retail corridor that will be a vibrant social and cultural hub, receiving the highest level of streetscape enhancements including public art integration.

Along Millway Ave., there is an opportunity to incorporate integrated works into the design of paving, lighting, and furnishings, with potential installations in quieter areas where visitors can sit and relax outdoors. A commissioned artist should be part of the public realm design team to develop site-specific, permanent integrated artworks. These pieces should form a cohesive collection, connected through thematic concepts, functionality, or material choices. They should be designed at a pedestrian scale and meticulously crafted with tactile elements. Storytelling through poetry and text are encouraged. Integrated works may include site furnishings, lighting, bike racks, paving, tree grates, and other infrastructure.

2.2 Physiography, Topography and Views

The study area is located in the Peel Plain physiographic region which covers approximately 300 square miles over the central areas of the Regional Municipalities of York, Peel, and Halton. The Peel Plain physiographic region consists of mainly shale and limestone covered in clay and is fairly well-drained due to the large deep river and stream valley crossings. The soil type in this region is suitable for agricultural purposes due to the brown peel clay followed with a sub-surface layer of brown-grey loam that can be found across the study area (WSP, 2021a).

The topography of the study area is generally flat, sloping slightly from north to south with a north-south ridgeline aligning approximately with Millway Avenue. Substantial glacier sediments can also be found in numerous areas due to the historic lakes that use to occupy the ecoregion. For additional details, refer to the project Archaeological Assessment Report (EDA Collaborative Inc. et al., 2018); (WSP, 2021a).

2.2.1 Potential Significant Views

The below areas all contribute to significant views within the Study Area.

In Figure 2, the intersection at Interchange Way/Peelar Road and Jane Street offers northern views of the Vaughan skyline and forms part of the entry sequence into the Vaughan Metropolitan Centre.

Figure 3: Looking north towards Jane Street on Interchange Way/Peelar Road

Figure 3 shows significant views from the intersection of Millway Avenue and Highway 7, looking north towards the VMC subway station and skyline.

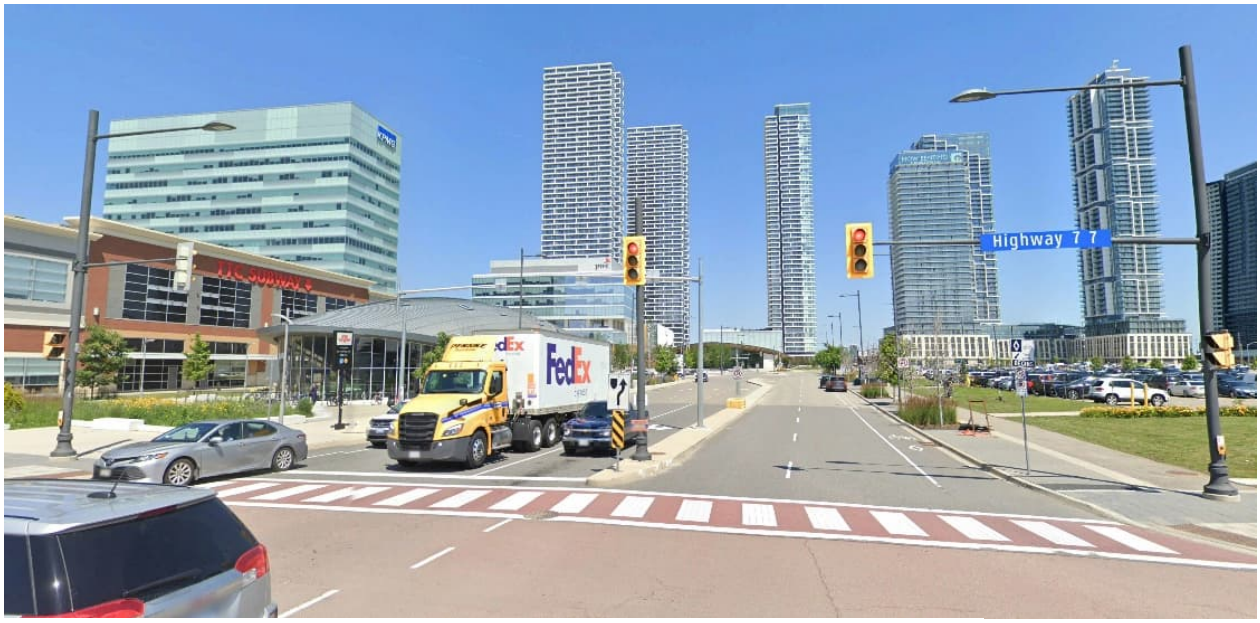

Figure 5: Looking north towards Millway Avenue on Highway 7

Figure 4 shows northern views from Interchange Way and future Millway Avenue

Figure 4: Looking north towards future Millway Avenue on Interchange Way

intersection.

Other potentially significant views include:

- At Peelar Road just east of Jane Street, there is a view of the Black Creek watercourse (running north-south) with numerous mature trees. This area is a potential focal point of the VMC as the VMC Streetscape and Open Space Plan aims to integrate the design and restoration of the Black Creek area as an integral part of the green public infrastructure.
- The view from Millway Avenue and the future south urban park (south of the future Doughton Rd.) looking north.
- The view from Millway Avenue and Doughton Road looking north along the pedestrian promenade to the west.

2.3 Natural Heritage

The City of Vaughan is located between the Great Lakes – St. Lawrence Lowlands and Carolinian floristic regions, which both fall under the Mixed Wood Plains Ecozone and the Lake Erie-Lake Ontario Ecoregion (7E). The VMC is located in Ecodistrict 7E-4 and Zone 5b of the Natural Resources Canada Plant Hardiness Zone Map. The Mixed Wood Plains Ecozone is predominately covered by deciduous and mixed deciduous forest, with smaller amounts of meadow, thickets, and wetland communities. Tree species found within this Deciduous Forest Region includes Black Walnut, Sycamore, Swamp White Oak, Eastern White Pine, Tamarack, Eastern Red Cedar, and Eastern Hemlock. Indigenous tree species can be found in this Ecoregion such as Sugar Maple, American Beech, Eastern White Pine, Yellow Birch, Red Maple, Basswood, and Red Oak. This region also marks the northern limit of the Tulip-Tree, Cucumber-Tree, Pawpaw, Red Mulberry, Kentucky Coffee-Tree, Black Gum, Blue Ash, Sassafras, Mockernut Hickory, Pignut Hickory, Black Oak, and Pin Oak species. (EDA Collaborative Inc. et al., 2018); (WSP, 2021a).

The Black Creek is also located within the VMC and is a tributary of the Humber River and part of its watershed, connecting the Toronto area with Lake Simcoe to the north, and the Trent-Severn waterway to the northeast (WSP, 2021a). With a lack of other significant natural features in the VMC study area, the Black Creek corridor has the potential to

become a prominent naturalized feature (Urban Strategies Inc. & Aecom, 2021). Refer to 2.7 for additional information on Natural Heritage and Landscape Character.

2.4 Cultural Heritage

Since its settlement, the VMC landscape has evolved from an agricultural setting to an industrial landscape and, ultimately, into the prominent downtown hub that it is today. Around 1800, the community of Edgeley was established at the northeast area of Jane Street and Highway 7 intersection by settlers from Somerset County, Pennsylvania. A sawmill was one of the first establishments in Edgeley in the early 1800s, and later more mills were developed to produce cider and shingles. A general store was also located in that area, where the Edgeley post office was until 1960. On the northwest corner of Highway 7 and Jane Street, buildings included a hotel, two slaughterhouses, a chopping mill, and a community centre (EDA Collaborative Inc. et al., 2018). In 1954, the VMC study area was predominantly rural with agricultural uses. By the late 1960s and 1970s, major construction such as Highway 400 and the area southeast of Highway 7 and Jane Street were developed. By 1977 extensive grading, landscaping, and disturbance to the area southwest of Highway 7 and Jane Street was observed. Development northwest and northeast of Highway 7 and Jane Street occurred from 1987 to 1989. By 1992 Highway 407 began construction. Due to the significant commercial and infrastructure development, none of the former Edgeley communities or community buildings remain. However, many of the VMC street names today celebrate the history of Edgeley (e.g. Edgeley Boulevard, Millway Avenue, Apple Mill Road, Applewood Crescent.) (WSP, 2022a).

The Black Creek is a designated Canadian Heritage River and is a part of the Toronto Carrying Place, which was a significant route used for indigenous trade from the mouth of the Humber River in Lake Ontario to the Holland Marsh in the north. European explorers also often used this trade route to travel inland. The Creek has a long history of human occupation. It used to supply water power for nearby settlers. Today former buildings from the Edgeley community can still be found at the Black Creek Pioneer Village (EDA Collaborative Inc. et al., 2018); (WSP, 2021a).

A number of cultural heritage assessments have been completed for portions of the study area, however those located and reviewed as part of this study have not identified any Built

Heritage Resources (BHRs) or Cultural Heritage Landscapes (CHLs) with known or potential cultural heritage value or interest (WSP, 2022a).

The Stage 1 Archaeological Assessment (WSP, 2021a) indicates that one designated heritage property is located within the surrounding area of the MCEA's study limit, and no other listed or designated heritage properties are found within 300 meters of the study area. There are two cemeteries within 300 meters of the study area. Refer to the Stage 1 Archaeological Assessment Report for more details (WSP, 2021a).

2.5 Land Use

Figure 7: Edges of the Black Creek

Figure 6: The Black Creek waterway

As previously mentioned, the VMC sits in the center of a major regional industrial area and transportation network. It is bounded by Highway 407 to the south and Portage Parkway to the north. On the east, it is bounded by MacMillan Rail Yard and employment lands, which separate the VMC from the Concord West community. It is bounded by Highway 400 to the west and beyond the highway, a primary Intensification area is located at Weston Road and Highway 7 intersection (west side of Highway 400) (EDA Collaborative Inc. et al., 2018).

The portion of the study area east of Jane Street is characterized by primarily small lot industrial and commercial land uses constructed post-1970 with surface parking lots arranged to a grid street pattern and residential towers (under construction). This area is close to the MacMillan Rail Yard and has contributed to Vaughan's industrial economy for

Figure 8: The Black Creek waterway, cont'd

decades. Black Creek has been largely urbanized and travels north-south through the study area parallel to the east side of Jane Street. The banks of the creek are lined with mature trees that obscure views to the waterway.

The portion of the study area west of Jane Street is composed of contemporary large lot commercial and industrial land uses, parking lots, and residential towers (under construction). An IKEA store surrounded by surface parking lots and a large lot under construction with a multi-storey residential tower and townhomes are located north of Exchange Avenue/Peelar Access Road and south of the Interchange Way/MCEA study boundary.

2.6 Active Transportation

2.6.1 Pedestrian Network

The existing pedestrian network within the wider VMC area has sidewalks on most major and minor roadways, excluding the industrial areas in the southeast quadrant. Highway 7, New Park Place, Apple Mill Road, and Millway Avenue (between Portage Parkway and Highway 7) have all been re-designed to provide active transportation facilities and improved conditions for pedestrians.

Along the existing segment of Interchange Way, west of the intersection with Jane Street, the available sidewalks appear to be 1.8 meters wide and are separated from traffic by green space. For 200 meters west of the intersection with the (north-south) Interchange Way the sidewalks are adjacent to the street and appear to be 1.8 meters wide. The westernmost blocks have a sidewalk on the south side of Interchange Way only. The remainder of the study area does not have existing sidewalks or pedestrian connections.

2.6.2 Active Transportation Network

There are multiple existing cycling facilities located within the VMC area, with the highest order facilities introduced as part of the recently re-designed corridors. The cycling facilities identified in the VMC study area are:

- Pocket bike lane (bike lane sandwiched between vehicular through or left turning lanes on the left side and vehicular right turning lane on the right side) of Highway 7 between Millway Avenue and Jane Street.
- Physically separated bike lanes on both sides of Apple Mill Road extending between Applewood Crescent and Millway Avenue; and
- Varying cycling facilities (buffered/in-boulevard bike lanes) on the Millway Avenue segments between Portage Parkway and Highway 7.

The provisions for cyclists turning left, i.e., left-turn bicycle boxes, are available at the intersections along the recently resurfaced-corridors and are listed below:

- East and west approaches of intersections located east of Applewood Crescent along Highway 7; and
- All the approaches of Millway Avenue and Apple Mill Road intersection.

Within the Interchange Way and Millway Avenue MCEA Study Area there are currently no designated cycling facilities (WSP, 2021b).

2.7 Landscape Character

The existing character of the broader Study Area is predominately industrial and commercial. The landscape along Interchange Way from Commerce Street to Jane Street consists mainly of street tree and shrub plantings in medians. There are no notable naturalized woodlots or ecologically significant areas as the surrounding land uses are built-up and consist of mostly industrial buildings, vacant lands, and parking lots.

The character of the landscape east of Jane Street is also mainly industrial, except for Black Creek. Black Creek consists of a variety of tree species, some of which are invasive. Based on the Tree Preservation Charts prepared by WSP for the field works conducted on October 28th and November 4th, 2021, invasive species include Manitoba Maple, Common

Buckthorn, and Russian Olive. Native species include Black Cherry, Canada Poplar and Green Ash, while other species include Crack Willow and the general Hawthorn species.

Appendix A – Photo Record illustrates the existing landscape character along the corridor.

3 Landscape Design and Restoration

3.1 Proposed Works

This MCEA has resulted in confirmed alignments for transportation routes and land use planning. As changes may occur in land use and environmental conditions over time, it is expected that the current conditions and assumptions may need to be re-visited at the time of Detail Design. The following impact and mitigation review is general to reflect this preliminary planning stage. A refined impact assessment may be undertaken during the Detail Design phase once the roadway profiles are set and the design is refined, which will be based on conditions that exist at that time.

Proposed works include widening of Interchange Way from two to four lanes, extension of Interchange Way east of Jane Street to Creditstone Road, and the construction of a new Millway Avenue extension from north of Interchange Way to south of Highway 7. Millway Avenue will be classified as a Special Collector Road, serving as a mobility hub with adjacent retail, commercial, transit, high-density residential, and public spaces. Interchange Way will be classified as a Major Collector Road, with multi-modal transportation prioritized through the accommodation of transit and pedestrian/cycling infrastructure.

As per the VMC Streetscape and Open Space Plan and the City Wide Streetscape Implementation Plan, Millway Avenue is recognized as a Premium Level of Service street up to Interchange Way, then Standard Urban Level of Service from Interchange Way to Exchange Avenue. All of Interchange Way is recognized as a Standard Urban Level of Service street. The Landscape Streetscape Concept Plan shown in Appendix C shows landscape design treatments for the preferred alignment (Option 1) of Millway Avenue and the preferred alignment (Option 2) of Interchange Way.

The improvements will include the following features:

- Widening of the Interchange Way from two to four lanes with a center median barrier.
- New 1.8-meter-wide raised cycle tracks on both sides along Interchange Way and Millway Avenue.
- Decorative paving and other enhancements along Millway Avenue, as outlined in the SOS Plan.
- Re-alignment of Black Creek and new Interchange Way overpass.
- Drainage and stormwater management improvements including the construction of two new Stormwater Management Ponds near the E-N-Ramp and S-N-Ramp, and potential Low Impact Development (LID) measures; and
- Illumination improvements and relocation of impacted utilities.
- Potential for decorative paving at intersections and transit stops, to respect broader VMC character.

Anticipated direct and indirect impacts of these works are outlined in detail in Section 3.1.7.

The sections below describe design elements that should be incorporated into the landscape and streetscape design to align with the City of Vaughan's vision for the VMC.

Based on the vision from the Vaughan Secondary Plan and Vaughan Streetscape and Open Space Plan, the streetscape and landscape design will have consideration for the following guidelines and elements:

3.1.1 Planting

The following guidelines apply to planting within the Interchange Way and Millway Avenue MCEA:

- All trees should be salt, disease, drought, and pest resistant, with a preference for native varieties. Refer to the Recommended Tree Species list in Appendix B.
- In accordance with Vaughan Forestry's guidelines for new plantings, biodiversity is encouraged by limiting the planting of the same tree genus to a maximum of four trees (or 4%) in a row or in the same area, and no more than 10% of the same genus across the entire site.
- To ensure diversity within the urban canopy, it is advised that new plantings should not exceed 2% representation of the following genera: Acer, Gleditsia, and Tilia.

- Larger-form trees are preferred, except in areas of conflict with overhead hydro or buildings.
- Where possible, a double row of trees should be planted in parallel to enhance the pedestrian realm.
- Street tree spacing should generally be between 5-9 meters (m) on center (o.c.). This would generally reflect 5m o.c. spacing for small trees, 7-8m o.c. for medium trees and 8-9m o.c. for large trees.
- Street trees should be offset a minimum of 9m o.c. from intersecting curb faces. Additionally, trees planted at street intersections should have large canopies and high branching to maximize visibility for pedestrians and motorists.
- Trees should be planted minimum 2m from the curb and in medians that are 4m or wider (from curb face to curb face).
- Tree plantings should have sufficient distance from utilities to minimize disruption.
- Tree planting should be in accordance with CPTED guidelines for safety.
- Street tree planting methods include:
    - Open tree pits with a planted surface cover (preferrable dimension of 3m length parallel to the curb, and a minimum of 1.5m clear width perpendicular to the curb). There shall be a preference for open planting areas where space permits.
    - Tree grates for trees planted in hard surfaces (especially in high traffic areas) are encouraged.
    - Curb-height planters.
    - Seat-height planters.
    - Boulevard planting in landscape amenity zones. A minimum of two trees per planter is recommended.
- Provide a minimum growing medium volume of 20m^3 in a shared tree pit or 30m^3 of growing medium in a stand-along tree pit. Provide a minimum soil depth as per City of Vaughan tree planting details current at the time of planting.
- Soil cells are encouraged in areas of high pedestrian traffic and limited space, and for any area where there is a potential for soil compaction.
- Provide continuous tree pits in high traffic pedestrian areas for maximum soil area to allow roots to spread and provide ample exposure to water and air.

- Boulevard shrub planting should be located in raised open planters (min. 200cm ht. curb) to protect planting from salt spray and foot traffic.

3.1.2 Furnishings

The following guidelines apply to furnishings within the Interchange Way and Millway Avenue MCEA:

- A family of unifying furnishings such as benches, bike racks, bollards, bus shelters, kiosks, newspaper vending machines, trash receptacles, and special lighting should be used to create a strong sense of identity at VMC. This may reflect a contemporary design style as a recognizable, unifying theme, as outlined in the VMS SOS Plan. Contemporary (modern) furnishings typically feature clean, crisp lines, a simple colour palette (often a single colour or monochromatic scheme), and materials such as metal, glass, and steel.
- Furnishings should be comfortable to use and accessible, low-maintenance, vandal resistant, weather resistant, and easily replaceable.
- All furnishings should include tamper-proof systems and be surface-fixed, where appropriate.
- Use of sustainable products and materials is encouraged.

3.1.3 Paving

The following guidelines apply to paving/hardscape areas within the Interchange Way and Millway Avenue MCEA:

- Millway Avenue is classified as a Premium Level of Service street and as a result, decorative unit paving may be used within the ROW.
- Interchange Way is classified as a Standard Urban Level of Service street and as a result, no unit paving is permitted. Concrete sidewalks and concrete amenity zones are allowed.
- Paving treatments can add interest and consistency to streetscapes using pattern, colour, and texture.
- A common paving palette (similarities in colour, paver sizes, and/or layouts) should be used to present unity within the VMC.

- Special paving treatment should be considered for Millway Avenue in areas like crosswalks and corner paving to delineate those areas and communicate priority pedestrian areas.
- Flush curbs across the sidewalk and road may be utilized in key areas (i.e., at the approach to the VMC station on Millway Avenue) to promote pedestrian priority and provide a spillover area for activities and public events.

3.1.4 Lighting

The following guidelines apply to lighting within the Interchange Way and Millway Avenue MCEA:

- Street lighting should be coordinated with street trees so that they are not in conflict. Street lights can be placed half-way in between trees.
- Lighting fixtures should be based on intended use; street lighting (6-7m high), pedestrian lighting (4-5m high), smaller parks and open space lighting (less than 3m), and feature lighting (such as uplighting, or other decorative lighting fixtures to highlight important features or public art) should be considered along both corridors.
- As per the VMC Streetscape and Open Space Plan, tall mast light poles between 20-25m high should be used for Millway Avenue pedestrian promenade. Iconic lighting elements and decorative or accent lighting are intended to be utilized for Millway to reflect it's premium status as per the VMC SOS Plan.
- All lighting should have low horizontal luminance, minimal glare, and low light pollution.

3.1.5 Public Art

The use of public art along the streetscape is intended to help increase interest and design quality within the VMC. The following guidelines apply to public art within the Interchange Way and Millway Avenue MCEA:

- Public art can be displayed on or be an integral design component of a variety of streetscape elements, such as furnishings, paving, fencing, information displays, and

utility elements such as manhole covers. The future Detail Design stage will explore potential public art locations in consultation with the City.

3.1.6 The Black Creek

The Black Creek is a major natural feature of the VMC. The City's vision for the revitalized Back Creek is to "create an iconic landscape destination that creates value and identity for the new downtown." It should be a central open space corridor that provides stormwater management, ecological diversity, recreation amenities, and a special frontage development opportunity. The following guidelines apply to Black Creek within the Interchange Way and Millway Avenue MCEA:

- The riparian corridor should be protected and enhanced.
- Improved stormwater management measures are required to address flooding issues.
- Tree planting and vegetation restoration should occur at the edges of the crossing to reinforce the ecological features and maximize biodiversity.
- The upgraded stormwater pond and new naturalized creek channel should also be designed with the integration of future trails, parks, and open spaces in mind.

3.1.7 Low Impact Development Measures

Low Impact Development (LID) measures are designed to improve stormwater quality and reduce stormwater quantity. LID measures may be considered adjacent to parks and open spaces. Planters for trees and shrubs that allow infiltration, structural soil cells for water storage, and overflow drains should also be considered.

Within the Interchange Way and Millway Avenue MCEA, there is a potential for LID measures on Interchange Way at the Black Creek crossing and on Millway Avenue at South Urban Park, as identified based on information contained in the Vaughan Metropolitan Centre Master Plan (City of Vaughan, 2021).

3.2 Anticipated Impacts

In general, based on the Tree Preservation Charts prepared by WSP for the field works conducted on October 28th and November 4th, 2021, the plant community surrounding Black Creek are comprised of invasive species such as Manitoba Maple, Common Buckthorn, and Russian Olive, and native species such as Black Cherry, Canada Poplar, and Green Ash. Other species include Crack Willow and the general Hawthorn. There may be impacts to higher quality vegetation types, including species which are candidates of potential significance.

Along Interchange Way, the plant communities are primarily comprised of Elm, Maple, Spruce, Oak, Linden, Lilac, and Honey-Locust species. There are several invasive specs present such as the Manitoba and Norway Maple.

3.2.1 Direct Impacts

The only direct impacts are anticipated to be on vegetation. Vegetation impacts will mainly affect the Black Creek corridor in proximity of Peelar Road, which consists of a variety of native, introduced, and invasive species. Based on the Tree Preservation Charts prepared by WSP for the field works conducted on October 28th and November 4th, 2021, invasive species include Manitoba Maple, Common Buckthorn, and Russian Olive. Native species include Black Cherry, Canadian Poplar, and Green Ash, while other introduced species include Crack Willow and the general Hawthorn species. Along Interchange Way, existing trees along the street may be impacted. This may include a variety of trees, including though not limited to Silver Maple, Norway Maple, Red Maple, Hedge Maple, Red Oak, Accolade Elm, Littleleaf Linden, Blue Spruce, White Spruce, and Norway Spruce.

3.2.2 Indirect Impacts

In addition to direct impacts required for construction removals, there is potential for indirect impacts to retained vegetation and wildlife habitat features within and bordering the right-of-way (ROW). Vegetation beyond the anticipated construction footprint may be disturbed during or after construction and changes in drainage patterns may impact dependent vegetation. Potential indirect effects to adjacent vegetation features that may occur during the construction period include the following:

- Release of construction-generated sediment/garbage into the Black Creek channel.
- Soil compaction and vegetation clearing/damage beyond the working limits.

Potential indirect effects to adjacent vegetation features that may occur following the construction period include:

- Damage from excessive or improper application of herbicides and pesticides for ROW maintenance requirements.
- Increased potential of introduction of non-native species due to accidental spreading through construction activities (e.g., movement of materials via vehicle tire, etc.).
- Contaminants from spills and highway runoff.
- Damage to bordering natural vegetation from roadway maintenance activities such as salting and sanding, structure/culvert repairs, and/or ditch cleanout. Salt runoff and salt spray drift into vegetated areas may result in the loss of vegetation vigor and in extreme cases, vegetation dieback and spread of salt tolerant flora (halophytes).

Post-construction monitoring, as detailed in Section 3.3.6 should have regard for these potential impacts. With proper mitigation, including good maintenance practices, these indirect effects can be managed during and after construction and during operation. General mitigation measures provided in Section 3.3 are anticipated to be sufficient to minimize foreseeable impacts.

3.3 Mitigation Measures

3.3.1 Invasive Species

Invasive species management recommendations, in particular to prevent spread of Reed Canary Grass and Norway Maple are outlined in the Terrestrial Report, (WSP, 2022b). The guidelines in the Ontario Invasive Plant Council document: Clean Equipment Protocol for Industry should be followed (WSP, 2022b). This document is available at https://www.ontarioinvasiveplants.ca/resources/technical-documents/. General measures include:

- Ensuring equipment is clean prior to entering the site and prior to entering another site.
- Cleaning equipment at least 30m away from any watercourse/water body or natural vegetation (clean on a mud-free, gravel covered and hard surface or well-maintained grassy area).
- Using compressed air and high-pressure hose in combination with a stiff brush or broom.
- Paying special attention to cleaning the underside of vehicles and in areas where dirt clods or plant materials may collect (wheel arches, guards, radiators, etc.).

In addition, soil contaminated with invasive seeds should only be disposed of at a site where the material can be contained, monitored, and, if necessary, treated, or at an appropriate municipal staging or disposal location.

3.3.2 Sediment Control

To prevent migration of sediment into watercourses and natural areas, implement erosion and sediment controls prior to construction and monitor regularly to ensure they remain in place and are functioning properly during construction. Ensure sediment control measures remain in place until groundcover plantings (i.e., seeded areas) have become established. Additionally, the following mitigation measures apply in relation to sediment control:

- Protect existing vegetation that is to be retained as per Ontario Provincial Standard Specification (OPSS) 805: Construction Specification for Temporary Erosion and Sediment Control Measures.
- Disturbed areas (i.e., open soil areas created during construction) will be stabilized and re-vegetated with appropriate seed mixes as soon as possible following construction. Where appropriate and feasible, side slopes will be vegetated with native plant species to reduce erosion, improve slope stability, increase infiltration, and reduce overland flow. Low maintenance, salt tolerant, and hardy materials as recommended in Appendix B shall be specified.

3.3.3 Grading

In addition to mitigation measures recommended from further assessment, the following mitigation measures shall be followed, where applicable:

- Existing surface and groundwater flow patterns will be carefully studied so that proposed grading can be designed to maintain these patterns to the greatest extent possible.
- Where possible, side slopes should not exceed 3:1 (horizontal : vertical). Where conditions require slopes greater than 3:1 the application of erosion blankets are to be considered in addition to seeding to maintain a stable slope and minimize erosion until seed becomes established.

3.3.4 Edge Management

Edge management is intended to utilize edge plantings to buffer exposed core riparian areas from environmental elements such as wind, pests and disease, sun, and salt spray. Consideration for potential encroachment of these elements, and other potential positive and negative impacts will be incorporated into the restoration approach.

Edge management mitigation measures include:

- Construction limits is to be used to minimize the removal of existing vegetation, wherever feasible, and will be staked out prior to construction commencement (including clearing and grubbing) in forested areas.
- Trees, shrubs, and other vegetation not specified for removal is to be preserved.
- Erosion and Sediment Control (ESC) fencing is to be erected to mark the vegetation clearing zones and prevent encroachment into vegetation beyond ESC fencing.
- Ensure the use of appropriate vegetation clearing techniques (i.e., felling away from retained vegetation communities) to avoid impacts/damage to sensitive areas. Vegetation removal will follow OPSS.MUNI 201 (clearing) and OPSS.MUNI 801 (tree protection).
- Beyond the edge that is disturbed, additional understorey plantings may be incorporated within the ROW adjacent to the existing natural area to buffer it from anticipated impacts.

- Retain good native soil and seedbank wherever possible in areas where clearing is proposed. Seedbank and soil that has invasive species present should be treated as contaminated. Refer to the Terrestrial Report (WSP, 2022b) for more detail.
- Stabilize and re-vegetate all exposed surfaces as soon as possible, and use native seed mixes which include impacted species, wherever feasible. These seed mixes are to be developed in the Detail Design stage. Seeding shall be conducted in accordance with OPSS.MUNI 804.
- Immediately following construction, edge management plantings is to be undertaken in areas as identified in the Landscape Plan, as refined through Detail Design. These areas should:
    - Include narrow 'no-grubbing' zones at the treeline (in order to stimulate suckering from cut roots and stumps).
    - Arrange edge plantings to establish a gradient from the exposed edge, decreasing in height and size from taller species to shrub and herbaceous species as you move away from the treeline.
    - Establish buffer plantings with groups of native trees and shrubs along the new edges to increase shade, reduce wind, and the effects of other contaminants such as salt spray.
    - Re-plant using native species of the same species proposed to be removed. Species selection shall consider factors such as salt tolerance, longevity and hardiness of plant material, and seasonal interest. Invasive or exotic species should not be utilized in any circumstance. Appendix B provides a list of appropriate tree species to be considered.
    - In sloped areas, select colony forming/suckering and deep-rooted plant species to assist with slope stabilization and organize plantings in large masses to promote dense colony formation and enhance visual quality.

3.3.5 Wildlife

Mitigation measures for wildlife are outlined in greater detail in the Terrestrial Report (WSP, 2022b). In general, mitigation measures related to landscape include:

- Implement sediment control measures as noted in Section 3.3.2.

- Ensure that timing constraints are applied to avoid all vegetation clearing (including grubbing and removal of trees/shrubs/grasses) during the breeding bird season (approx. April 1 to August 31).
- Ensure no active bird nests will be removed/disturbed during the identified breeding bird window (approximately April 1 to August 31) in accordance with the *Migratory Birds Convention Act* (1994).
- To avoid impacts to potential bat maternity colonies in treed habitats, no tree removals are permitted during the bat maternity season (i.e., April 1 to September 30). Vaughan may consider completing a pre-clearing contract for removal of trees (i.e., removals to be completed October 1 to March 31).
- All disturbed areas will be restored to pre-construction conditions, where feasible.

3.3.6 Monitoring

Regular environmental monitoring/inspection are to be implemented throughout construction to ensure that environmental protection measures are implemented, maintained, and repaired, and that remedial measures are initiated where warranted. Monitoring is to include an Environmental Inspector to observe, inspect, and ensure proper installation and maintenance of mitigation measures noted above during construction and for a specified period of time following the completion of construction.

3.3.7 Noise

Noise studies have not been conducted at this stage and will be reviewed during the Detail Design stage. Should Noise Mitigation be determined to be required during Detail Design, landscape mitigation measures can be considered including coniferous plantings as screening or as living walls.

4 References

City of Vaughan. (2021, September). VMC Parks and Wayfinding Master Plan. City of Vaughan.

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WSP. (2022a, March). *Cultural Heritage Report. Vaughan Metropolitan Centre Schedule 'C' Class Environmental Assessment.* City of Vaughan.

WSP. (2022b, TBD.). *Natural Enviornmental Assessment Report. Vaughan Metropolitan Centre Schedule 'C' Class Environmental Assessment.* City of Vaughan.

Appendix A

Photo Record

Figure 1: Interchange Way looking east towards IKEA

Figure 2: Interchange Way looking west

Figure 3: Interchange Way looking east towards Jane Street

Figure 4: Interchange Way looking west towards Mobilio Residences

Appendix B

Suggested Plant Species

The plant species list below was developed using the City of Vaughan Pre-Approved Species List and Region of York Top Performing Tree Species List. In addition, no single tree species should make up more than 5% of the tree population, no genus to make up more than 10%, and no family to make up more than 20%. Refer to the Vaughan Metropolitan Centre Streetscape and Open Space Plan for more information (EDA Collaborative Inc. et al., 2018).

Trees (Full Form)			
Botanical Name	Common Name	Native to Ontario	Tolerances
Acer saccharinum	Silver Maple	Y	Moderate salt spray/soil, moist to dry soils
Acer plataniodes 'Columnare'	Columnar Maple	N	Moderate drought tolerances, well-drained soils
Aesulus glabra	Ohio Buckeye	Y	Moderate drought tolerant, moist soils
Carya cordiformis	Bitternut Hickory	Y	Moderate salt spray, moist to well-drained soils
Celtis occidentalis	Common Hackberry	Y	Moderate salt spray/soil, moist to dry soils
Gingko biloba	Ginkgo	N	Moderate to high salt spray/soil, moist to dry soils
Gleditsia triacanthos var. intermis	Thornless Honeylocust	Y	Moderate to high salt spray/soil, Moist to average soils
Gymnocladus dioica	Kentucky Coffeetree	Y	Moderate salt spray/soil, Moist to average soils

Platanus x acerifolia	London Plane Tree	N	Moderate salt spray/Moist to well-drained soils
Quercus bicolor	Swamp White Oak	Y	Moderate salt spray/moist to well-drained soils
Quercus macrocarpa	Bur Oak	Y	Moderate salt spray/soil, moist to dry soils
Quercus robur x alba 'Crim-schmidt'	Crimson Spire Oak	N	Moist to well-drained soils
Quercus robur 'Fastigiata'	Pyramidal English Oak	N	High salt spray/well-drained soils
Ulmus americana 'Valley Forge'	Valley Forge Elm	Y	Moderate salt spray/soil, moist to dry soils

Trees (Hydro Acceptable)			
Botanical Name	Common Name	Native to Ontario	Tolerances
Amelanchier spp.	Serviceberry	Y	Moderate salt spray/soil, moist to dry soils
Cercis canadensis	Red Bud	Y	Moist to average soils
Pyrus calleryana	Ornamental Pear	N	Moderate to high salt spray/soil, moist to average soils
Quercus robur 'Fastigiata'	English Pyramidal Oak	N	Moist to average soils
Syringa reticulata 'Ivory Silk'	Ivory Silk Lilac	N	Moderate salt spray/soil, moist to average soils

Appendix C

Landscape Plan

LEGEND

- PROPOSED STREET TREES
- PROPOSED TRANSIT SHELTERS
- BOULEVARD WITH POTENTIAL FOR BIOSWALES AND OTHER LID MEASURES, AS APPROPRIATE
- POTENTIAL AMENITY ZONE, MAY INCLUDE:
  - BENCHES
  - BIKE RACKS
  - WASTE RECEPTACLES
- DECORATIVE PAVEMENT (ONLY ON MILLWAY AVENUE)
- SIDEWALK
- BIKE LANES
- CONCRETE PAVING
- PROPERTY LINE
- RIGHT OF WAY
- EASEMENT LINES

No.	DESCRIPTION	DATE	BY	APPROVED
2	FINAL LANDSCAPE PLAN	JUNE 2025	S.T.	J. S.
1	FINAL LANDSCAPE PLAN	APRIL 2024	K. L.	J. S.

REVISIONS

SCALE:

0 5 10 20 30 40
SCALE 1:500 (m)

MC TMP - ENVIRONMENTAL ASSESSMENT
INTERCHANGE WAY AND MILLWAY AVENUE

CITY FILE No. ##########

LANDSCAPE PLAN

DESIGN BY: J.S.	DATE: APRIL 2024	CHECKED BY: J.S.
DRAWN BY: K.L.	PROJECT No. 20M-01179-00	APPROVED BY: J.S.
		DWG. No. 1

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MILLWAY AVENUE

LEGEND

- PROPOSED STREET TREES
- PROPOSED TRANSIT SHELTERS
- BOULEVARD WITH POTENTIAL FOR BIOSWALES AND OTHER LID MEASURES, AS APPROPRIATE
- POTENTIAL AMENITY ZONE, MAY INCLUDE:
  - BENCHES
  - BIKE RACKS
  - WASTE RECEPTACLES
- DECORATIVE PAVEMENT (ONLY ON MILLWAY AVENUE)
- SIDEWALK
- BIKE LANES
- CONCRETE PAVING
- PROPERTY LINE
- RIGHT OF WAY
- EASEMENT LINES

No.	DESCRIPTION	DATE	BY	APPROVED
2	FINAL LANDSCAPE PLAN	JUNE 2025	S.T.	J. S.
1	FINAL LANDSCAPE PLAN	APRIL 2024	K. L.	J. S.

REVISIONS

SCALE:

0 5 10 20 30 40

SCALE 1:500 (m)

wsp

VAUGHAN

MC TMP - ENVIRONMENTAL ASSESSMENT
INTERCHANGE WAY AND MILLWAY AVENUE

CITY FILE No. ##########

LANDSCAPE PLAN

DESIGN BY: J.S.	DATE: APRIL 2024	CHECKED BY: J.S.
DRAWN BY: K.L.	PROJECT No. 20M-01179-00	APPROVED BY: J.S.
		DWG. No. 2

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