



**Corporate Services**  
**Department**  
**Materiel Management**

**City of Mississauga**  
 300 City Centre Drive  
 MISSISSAUGA ON L5B 3C1  
 Tel: 905-896-5233  
 FAX: 905-615-4186

of Dundas Street West Retaining Walls, Feb 14, 2022

# Contract

**FILE END DATE**  
 2022

10.5

**Important:** The Vendor must contact the Buyer named below if the Vendor disagrees with any of the information contained herein. The City will not accept any responsibility to any Vendor for any order or any variation or change thereto unless it is issued on an official City form and approved by the Purchasing Agent. Unless otherwise provided herein, any written acknowledgment of this order or delivery of any goods or provision of any services by the Vendor in accordance with this order shall constitute acceptance of this order by the Vendor. All orders are subject to the terms and conditions stated below. The City's procurement policies and Purchasing By-law are available from Materiel Management or on-line at: <http://www.mississauga.ca/portal/business/tendersandbids>

*Vendor:*  
 HDR CORPORATION  
 100 YORK BOULEVARD  
 RICHMOND HILL ON L4B 1J8 Canada  
 Fax Number : 289-695-4601

Purchase Order Number must appear on all documents, correspondence and shipping containers covered by it.

*Ship to:*  
 AS DIRECTED

## Change to Release Order

*Submit invoice to:*  
 The Corporation of the City of Mississauga  
[cityofmississauga\\_invoicecapture@concur solutions.com](mailto:cityofmississauga_invoicecapture@concur solutions.com)

Purchasing Agent	PO Number	4500530368	
	PO Date	2021 02 23	
	PO Revised Date	2022 02 14	
	Contract Number	4600017276	City Ref: PRC001136
Purchasing Agent	Vendor Number	1025282	
	Valid from		
	Valid to		
Contract Manager	Buyer/phone	S/Centre Fleet Inv/905-615-3200 ext 3067	
	Email		

*Delivery Date:*  
 2021 02 23

*Delivery Terms:*  
 FOB DESTINATION  
*Freight*  
*Ship via*

*Payment Terms*  
 within 30 days Due net  
*Currency*  
 CAD

Contract Manager: Muneef Ahmad @ (905) 615-3200, ext. 4793, or by email at [muneef.ahmad@mississauga.ca](mailto:muneef.ahmad@mississauga.ca)

-OR-

Vicky Wei @ (905) 615-3200, ext. 3017, or by email at [vicky.wei@mississauga.ca](mailto:vicky.wei@mississauga.ca)

This Purchase Order incorporates the contract documents, including without limitation the terms and conditions of the Professional Services Agreement from Procurement Number PRC001136.

<i>Item</i>	<i>Material</i>	<i>Unit</i>	<i>Description</i>	<i>Price per unit</i>	<i>Extension</i>
<i>Order Quantity</i>					
00001		Dollars	IPE Consultant Roster Assignment		
104,266.00					

Project Name/Description: Dundas Street Retaining Wall Rehabilitation # Additional Environmental Work and Heritage Study

Vendor:  
 HDR CORPORATION  
 100 YORK BOULEVARD  
 RICHMOND HILL ON L4B 1J8 Canada  
 Fax Number : 289-695-4601

PO Number 4500530368  
 PO Date 2021 02 23  
 Page 2

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<i>Item</i>	<i>Material</i>	<i>Unit</i>	<i>Description</i>	<i>Price per unit</i>	<i>Extension</i>
<i>Order</i>					
<i>Quantity</i>					
<hr/>					
	Roster Category:Structural Engineering				
	Quote Date:February 3 2022				
	PMR:Rebecca Huang				
		1 \$		1.00	104,266.00
			HST		13,554.58
			Item Net Price		117,820.58
*** PO quantity changed ***					
*** Schedule lines changed ***					
*** Text changed ***					
			<i>Gross Price</i>		<i>104,266.00</i>
			<i>HST</i>		<i>13,554.58</i>
			<i>Purchase Order Total</i>		<i>117,820.58</i>

June 15, 2021

2546

Mr. James Hair  
HDR Inc.  
100 York Boulevard, Suite 300,  
Richmond Hill, ON L4B 1J8

Dear: Mr. Hair

**RE: Dundas St. Retaining Walls NEA  
Information Gathering Form (IGF) and Ministry of Environment, Parks and  
Conservation Consultation**

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On behalf of Natural Resource Solutions Inc. (NRSI), I am pleased to provide HDR Inc. (HDR) the following work plan and cost estimate to complete an Information Gathering Form (IGF) and associated consultation with the Ministry of Environment, Parks and Conservation (MECP) in support of the proposed Dundas Street retaining wall improvements in the City of Mississauga.

As part of a Natural Environment Assessment (NEA), NRSI completed a bat Species at Risk (SAR) habitat assessment to determine the potential presence of bat habitat within areas proposed for vegetation removal to facilitate the planned retaining wall improvements. A review of background information and a site visit completed by NRSI biologists on March 10<sup>th</sup> and 16<sup>th</sup>, 2021, identified treed features within and adjacent to the areas where vegetation removals are proposed that have the potential to provide habitat for three SAR bats, including Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-colored Bat (*Perimyotis subflavus*).

To determine whether the identified candidate habitat contains bat SAR, NRSI has begun conducting acoustic monitoring surveys, as authorized by HDR on June 1<sup>st</sup>, 2021 (pers. comm. J. Hair, June 2020). On June 10<sup>th</sup>, NRSI biologists deployed omnidirectional SMM-U1 microphones and Song Meter SM4 acoustic recorders within 10m of the best potential roost trees, as well as potential foraging and/or flyway corridors within the project area, in order to ensure the recording of high-quality calls. All bat echolocation calls recorded during passive acoustic surveys will initially be autoclassified to species level or species grouping using the software program SonoBat 4.2.2 for the North/Northeastern US, Southern Ontario Region. Any calls exhibiting characteristics of a potential bat SAR (i.e., high frequency, autoclassified as a bat SAR or possible bat SAR, not confidently identified to a species by autoclassifier) will be manually vetted by experienced and qualified NRSI biologists to species or species grouping.

Should this analysis confirm the presence of bat SAR within the project area, it will be necessary to engage in consultation with the MECP, as well as prepare and submit an Information Gathering Form (IGF) to the MECP for review. Following the review of the IGF, the MECP will provide guidance in terms of next steps and any permitting requirements to ensure the proposed vegetation removals within the project area are completed in compliance with the *Endangered Species Act* (2007).

**Meetings**

Due to the narrow scope of this workplan, it is assumed that NRSI attendance/participation in formal meetings will not be required outside of the anticipated MECP correspondence requirements. If NRSI participation in formal meetings is required, standard staff rates and travel expenses will apply.

**Cost Estimate**

Should consultation and submission of an IGF be required based on the results of the passive bat acoustic monitoring, the cost to complete this work is estimated to be **\$3,654** (excluding HST). This cost is based on the time required to prepare requisite materials for the submission of an IGF to the MECP, as well as the anticipated consultation with MECP that will be necessary in order to finalize the IGF. If additional tasks are required, these would be considered beyond the scope of this work plan. A summary of hours per task and associated staff rates has been included below.

Task Category	Staff Time (Hours)			Total Hours
	Project Manager/Senior Biologist (\$100/hr)	Terrestrial Biologist (\$80/hr)	GIS Technician (\$100/hr)	
<b><i>Core Workplan</i></b>				
IGF Development and Submission	2	20	12	34
MECP Consultation		6		
<b>Total Core Workplan Hours</b>	<b>2</b>	<b>26</b>	<b>12</b>	<b>34</b>
<b>Project Task Fees (excluding HST and expenses):</b>				<b>\$3,480</b>
<b>Subtotal (excluding HST):</b>				<b>\$3,480</b>
<b>Admin Fee (5% subtotal):</b>				<b>\$174</b>
<b>Project Total (excluding HST):</b>				<b>\$3,654</b>

Should you have any questions or comments regarding this proposal, please do not hesitate to contact the undersigned.

Sincerely,  
Natural Resource Solutions Inc.



Jack Richard, R.P.F.  
Registered Professional Forester

May 19, 2021

Project 2546

Mr. James Hair  
HDR Inc.  
100 York Boulevard, Suite 300,  
Richmond Hill, ON L4B 1J8

Dear Mr. Hair,

**RE: Dundas St. Retaining Walls NEA  
Bat Species at Risk Acoustic Surveys**

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On behalf of Natural Resource Solutions Inc. (NRSI), I am pleased to provide the following work plan and cost estimate to complete bat species at risk (SAR) acoustic surveys to inform the proposed Dundas Street retaining wall improvements in the City of Mississauga.

As part of a Natural Environment Assessment (NEA), NRSI completed a bat SAR habitat assessment to determine the potential presence of bat habitat within areas proposed for vegetation removal to facilitate the planned retaining wall improvements. A review of background information and a site visit completed by NRSI biologists on March 10<sup>th</sup> and 16<sup>th</sup>, 2021, identified treed features within and adjacent to the areas where vegetation removals are proposed that have the potential to provide habitat for three SAR bats, including Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-colored Bat (*Perimyotis subflavus*).

All three bat SAR, Little Brown Myotis, Northern Myotis and Tri-colored Bat, are listed as Endangered provincially and are afforded general habitat protection under the *Endangered Species Act, 2007* (ESA). Habitat requirements for these three species in Ontario varies by season and consists of overwintering habitat, summer habitats, and swarming habitats (EC 2015). Summer habitats include roosting habitat for maternity colonies and day roosts, foraging and travel corridor/flyway habitats (EC 2015). Although Little Brown Myotis primarily roosts and establishes maternity roost colonies in buildings, they also use natural roosting sites including, rock crevices, exfoliating tree bark, and cavities and crevices in trees (EC 2015, Humphrey and Fotherby 2019). Northern Myotis has also been observed to roost in tree cavities, hollows, and under loose bark. Tri-colored Bats are known to roost in live or dead leaf clusters, including those formed by natural causes, and those created as nests by Eastern Gray Squirrel (Humphrey and Fotherby 2019). Tree species, such as oak (*Quercus* spp.) and maple (*Acer* spp.), that tend to retain dead leaves longer are assumed to be preferred by the species. Targeted studies to determine the presence or absence of bat SAR are required to establish if the proposed vegetation removals for the retaining wall improvements have the potential to contravene Section 10 of the ESA and would subsequently require authorization from the Ministry of the Environment, Conservation, and Parks (MECP).

This proposal outlines the work and estimated costs to undertake acoustic monitoring surveys for bat SAR in each of the natural areas adjacent to the two replacement walls scheduled for replacement.

### **Work Plan**

The following work plan has been developed in keeping with *Treed Habitats – Maternity Roost Surveys* (MECP 2020), and the *Survey Protocol for Species at Risk Bats within Treed Habitats* (MNRF 2017).

### **Bat Species at Risk Acoustic Surveys**

Passive acoustic surveys will be conducted to assess the use of identified candidate bat habitats by bat SAR. Bat activity will be monitored with the use of an omnidirectional SMM-U1 microphone and Song Meter SM4 acoustic recorder (Wildlife Acoustics Inc., Massachusetts, USA). The acoustic recorder employs direct digital recording technology and is designed to collect records from the full spectrum of bat calls (15-120 kHz) for the entire duration of the monitoring period. This allows for a full analysis of activity in the vicinity of each acoustic monitoring station.

Based on the size of the treed features, the number of vegetation communities present, and the results of the leaf-off survey conducted on March 10<sup>th</sup> and 16<sup>th</sup>, 2021, a total of 8 acoustic recorders and accompanying microphones will be deployed within these features.

All acoustic monitoring stations will assess bat activity associated with potential bat species at risk habitats and will be deployed within 10m of the best potential roost trees (as determined through the bat habitat assessments) within the interior of the features or near suitable foraging areas or travel/movement corridors along feature edges.

Passive acoustic surveys will be conducted in accordance with MECP (2020) and MNRF (2017) for a minimum of ten nights with suitable weather conditions between June 1st and June 30th, commencing at sunset and continuing for five hours each evening.

### **Data Analysis and Reporting**

All bat echolocation calls recorded during passive acoustic surveys will initially be autoclassified to species level or species grouping using the software program SonoBat 4.2.2 for the North/Northeastern US, Southern Ontario Region. Any calls exhibiting characteristics of a potential bat SAR (i.e., high frequency, autoclassified as a bat SAR or possible bat SAR, not confidently identified to a species by autoclassifier) will be manually vetted by experienced and qualified NRSI biologists to species or species grouping.

A summary and interpretation of the acoustic survey results will be provided in a digital letter report. Mapping of any confirmed bat SAR habitat will be appended to the report. Confirmed bat SAR habitats will be described in terms of their potential as a development constraint. Recommendations for next steps will be provided, including consultation with the MECP, to determine appropriate measures to avoid, minimize or mitigate impacts to bat SAR and their habitat. The report will highlight anticipated future MECP permitting or authorization requirements depending on the SAR issue.

This work plan does not include additional tasks associated with obtaining any required MECP permitting or authorizations such as the preparation and submission of an Information Gathering Form or a Notice of Activity registration under O. Reg. 242/08 of the ESA.

**Meetings**

Due to the narrow scope of this workplan, it is assumed that NRSI attendance/participation in formal meetings will not be required outside of typical correspondence requirements. If NRSI participation in formal meetings is required, standard staff rates and travel expenses will apply.

**Cost Estimate**

The cost to complete this work is estimated to be **\$21,932** (excluding HST). This cost is based on establishing approximately 8 acoustic monitoring stations, completing 4 site visits (1 acoustic detector set-up visit, 2 acoustic detector data collection and status check-up visits, and 1 acoustic detector take-down visit), and the analysis required for the collected acoustic data. If additional tasks are required, these would be considered beyond the scope of this work plan. A summary of hours per task, and associated staff rates, has been included below.

Task Category	Staff Time (Hours)				Total Hours
	Project Manager/Senior Biologist/Senior Arborist (\$100/hr)	Terrestrial Biologist (\$80/hr)	GIS Technician (\$80/hr)	Junior Biologist (\$70/hr)	
<b><i>Core Workplan</i></b>					
Data Analysis		88	6		<b>94.00</b>
Agency Consultation		3.5			
Reporting	6	20			<b>26.00</b>
<b><i>Fieldwork</i></b>					
Monitoring Preparation		6			<b>6.00</b>
Acoustic Monitoring Surveys		17		28	<b>45.00</b>
<b>Total Core Workplan Hours</b>	<b>6</b>	<b>134.5</b>	<b>6</b>	<b>28</b>	<b>171.00</b>
<b>Project Task Fees (excluding HST and expenses):</b>					<b>\$13,800</b>
<b>Project Expenses (Equipment + Mileage):</b>					<b>\$7,088</b>
<b>Subtotal (excluding HST):</b>					<b>\$20,888</b>
<b>Admin Fee (5% subtotal):</b>					<b>\$1,044</b>
<b>Project Total (excluding HST):</b>					<b>\$21,932</b>

### **Schedule**

Passive acoustic surveys must be completed during the bat maternity roost period within the month of June. This work plan includes the cost to complete 10 nights of acoustic monitoring. As outlined in the survey protocol (MNRF 2017), acoustic monitoring must be completed on nights with suitable weather. Therefore, acoustic monitoring stations are recommended to be deployed for approximately 12 to 15 nights to increase the likelihood that 10 nights of acoustic data will be collected when weather conditions are favourable. The additional nights of monitoring have been provided at no extra cost.

To ensure greater than 10 nights of acoustic data are collected within the month of June, it is recommended to deploy acoustic detectors no later than June 15, 2021. Staff are available to commence work upon written authorization to proceed.

Please let me know if you would like us to undertake this work. Should you have any questions with regards to the work or cost provided, do not hesitate to contact me.

Sincerely,  
Natural Resource Solutions Inc.

A handwritten signature in black ink, appearing to read 'Jack Richard', written in a cursive style.

Jack Richard, Registered Professional Forester



**PROPOSAL**  
**Cultural Landscape Heritage Impact Assessment**  
**and**  
**Stage 1 Archaeological Assessment**

**Dundas Street Retaining Walls**  
**City of Mississauga**  
**Regional Municipality of Peel**  
**Lot 3-5, Range 1 South of Dundas Street**  
**Geographic Township of Toronto**  
**Former Peel County**

James Hair  
**HDR Inc.**  
500-1500 West Georgia Street  
Vancouver, BC, V6G 2Z6  
Phone: (604) 687-1898  
Email: [james.hair@hdrinc.com](mailto:james.hair@hdrinc.com)

By  
**Archaeological Research Associates Ltd.**  
219-900 Guelph Street  
Kitchener, ON N2H 5Z6  
Tel: (519) 804-2291 Fax: (519) 286-0493  
[www.arch-research.com](http://www.arch-research.com)

*Project #s 2021-0224 and 2021-0225*

**ORIGINAL**

**05/05/2021**

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## 1.0 INTRODUCTION

Archaeological Research Associates Ltd. (ARA) appreciates the opportunity to submit this proposal to HDR Inc. (HDR) for a Cultural Landscape Heritage Impact Assessment (HIA) as well as the Stage 1 Archaeological Assessment required as part of the design phase for two new retaining walls on Dundas Street West in the City of Mississauga. The project lands consist of an east retaining wall approximately 0.51 ha (1.26 ac) in size and a west retaining wall approximately 0.27 ha (0.68 ac) in size and are located on part of Lot 3-5, Range 1 South of Dundas Street in the Geographic Township of Toronto, Former Peel County.

As indicated by HDR, the sites fall within the Erindale Village Cultural Heritage Landscape; therefore, a Cultural Landscape Heritage Impact Assessment (HIA) will be required for the completion of this project.

Preliminary analysis in the vicinity of the subject lands indicates that the study area has potential for archaeological resources. Local indicators of archaeological potential include proximity to known archaeological sites, water sources, historic transportation routes and historic settlements. Specifically, the study area is within 1 km of four (4) registered archaeological sites and historic community of Credit, is traversed by a historic road and is adjacent to a sawmill. As per client correspondence, ARA has included a workplan and cost for a Stage 1 Archaeological Assessment in this document.

## 2.0 COMPANY PROFILE

Established in 1972, ARA is Ontario's oldest archaeological and heritage consulting firm. Our longevity flows from this abundant experience and our ongoing commitment to ethical practice. Over the past 49 years, ARA has completed well over one thousand contracts for clients in the public, private, and not-for-profit sectors across Ontario. ARA's head office is located in the City of Kitchener where it maintains a full-time staff of 26 researchers, technical writers, GIS technicians, laboratory technicians, field archaeologists and heritage specialists. Additional interns, including licenced Field Directors, university graduates, and trained field technicians are seasonally employed on field projects. ARA maintains three satellite offices, two in the City of Hamilton (Flamborough/Stoney Creek) and one in Owen Sound.

ARA is one of the few firms in Ontario that offers coordinated archaeological, marine, and cultural heritage services. Where possible, these assessments are conducted in parallel to provide a holistic approach to examining cultural heritage value; be it above ground, below ground, or underwater. Combining all three creates budgetary efficiencies and ensures that project deliverables are both seamless and comprehensive.

Our Heritage Department offers a full range of cultural heritage studies including Cultural Heritage Assessments, Built Heritage and Cultural Heritage Landscape Assessments, Heritage Impact Assessments, and Cultural Heritage Evaluation Reports. ARA has extensive experience in evaluating buildings, streetscapes and landscapes for potential development projects in all regions of Ontario. ARA has also worked on inventories and designation by-laws for municipalities including the City of Burlington and the City of Kingston. The Heritage Department is currently a Vendor of Record for CBRE Ltd., the City of Hamilton, the City of Newmarket, the Municipality of Clarington, Infrastructure Ontario, Metrolinx and Ministry of Transportation, Central Region and West Region.

Our Archaeology Department offers a variety of services including: Stage 1–4 Archaeological Assessments, Archaeological Construction Monitoring, Archaeological Management Plans, Marine Archaeological Services, Cemetery Investigations, Burial Recovery and Relocation, Collections Management, Geomatics and GIS Services, Remote Sensing and Preservation/Conservation Services. ARA's corporate experience includes projects across a number of legislative frameworks including: *the Aggregate Resources Act*, the *Environmental Assessment Act* (e.g., Class Environmental Assessments), *the Funeral, Burial and Cremations Services Act*, the *Green Energy Act* (e.g., Renewable Energy Approvals), the *Planning Act*, the *Ontario Energy Board Act* and the *Ontario Heritage Act*. ARA is registered with RAQS (MTO) and is currently a Vendor of Record for CBRE Ltd., Infrastructure Ontario, Northumberland County, Niagara Parks Commission and the Ministry of Transportation, Central and West Regions.

ARA maintains a full portfolio of policies that provide it compliance with even the strictest government requirements. These include: Workplace Health and Safety, Environmental, Privacy and Confidentiality, and Accessibility. We carry insurance policies for general liability, professional liability, and automotive in the amount of \$5,000,000.

### **3.0 VALUE ADDED**

ARA is one of the few firms in Ontario that offers coordinated archaeological, marine, and cultural heritage services. Where possible, these assessments are conducted in parallel to provide a holistic approach to examining cultural heritage value; be it above ground, below ground, or underwater. Combining all three creates budgetary efficiencies and ensures that project deliverables are both seamless and comprehensive.

ARA has taken a leading role among archaeological and heritage firms in working with Indigenous communities. ARA's core value statement acknowledges Indigenous stewardship over their own cultural properties, the ongoing trauma of Colonialism, and the duty it imposes on us to decolonize all aspects of our practice. Accordingly, as a company, ARA has been a leader in coordinating Indigenous participation in archaeological and cultural heritage studies for projects in which the Duty to Consult has been identified.

### **4.0 KEY TEAM MEMBERS**

A profile of each of the key team members are included below.

#### **4.1 Paul Racher, M.A., CAHP, RPA – Principal – Management & Senior Review**

Paul Racher is a Principal at ARA and conducts senior review for all projects under his archaeological licence. He is a former lecturer in Cultural Resource Management at Wilfrid Laurier University (WLU), has a BA in Prehistoric Archaeology from WLU and an MA in Anthropology from McMaster University. He began his career as a heritage professional in 1986. Over the three decades since, he has overseen the completion of over one thousand archaeological and cultural heritage contracts. He holds professional licence #P007 with the MHSTCI. Paul is a professional member of the Canadian Association of Heritage Professionals (CAHP) and of the Register of Professional Archaeologists (RPA). He is also a Past President of the Ontario Archaeological Society (OAS). ARA is a Vendor of Record for CBRE Ltd., Infrastructure Ontario, Ministry of Transportation Central and West Regions, and the Niagara Parks Commission. As a Principal of ARA, Paul directs the archaeology projects undertaken for these provincial agencies. As such, Paul has in-depth experience in directing archaeological work following the *Standards and Guidelines for Consultant Archaeologists* (2011) and the *Ontario Heritage Act*. Paul will oversee

*the archaeological aspect of the project and assign an experienced Project Archaeologist who will become the main client contact upon project award.*

#### **4.2 Kayla Jonas Galvin, M.A., RPP, MCIP, CAHP – Heritage Operations Manager**

Kayla Jonas Galvin, ARA's Heritage Operations Manager, has extensive experience evaluating cultural heritage resources and landscapes for private and public-sector clients to fulfil the requirements of provincial and municipal legislation, such as the *Environmental Assessment Act*, the *Standards & Guidelines for the Conservation of Provincial Heritage Properties* and municipal Official Plans. She served as Team Lead on the Ministry of Tourism, Culture and Sport's Historic Places Initiative, which drafted over 850 Statements of Significance and for *Heritage Districts Work!*, a study of 64 heritage conservation districts in Ontario. Kayla was an editor of *Arch, Truss and Beam: The Grand River Watershed Heritage Bridge Inventory* Since starting at ARA Kayla has directed over 140 cultural heritage reports. As the heritage team lead on ARA heritage retainers for MTO West and Central Regions, Infrastructure Ontario and CRBE retainer (property manager for Infrastructure Ontario), Kayla regularly provides heritage due diligence and advice for the management of heritage properties. Kayla is professional member of the CAHP, a Registered Professional Planner (RPP) and Member of the Canadian Institute of Planners (MCIP). *Kayla will oversee the heritage aspect of the project and will be assisted by an experienced heritage project manager.*

#### **5.0 RELEVANT EXPERIENCE**

ARA has extensive experience conducting heritage and archaeological assessments similar in nature and scope to the work required to complete this project throughout Ontario to complete. Five examples of projects are summarized below:

##### **2020 - Heritage Impact Assessment, Old Derry Road Bridge, City of Mississauga (Client: McIntosh Perry)**

Under a contract awarded in April 2020 by McIntosh Perry, Archaeological Research Associates Ltd. was retained to complete a Heritage Impact Assessment for the Old Derry Road Bridge (Bridge # 045002) over the Credit River in the City of Mississauga, Ontario. The structure is oriented on a west-east axis and provides vehicular and pedestrian access across the Credit River. It is located within the southwest boundary of the Meadowvale Village Heritage Conservation District. Based on the condition of the bridge and financial analysis, the preferred alternative for renewal of the Old Derry Road over Credit River Bridge is Option 2 Rehabilitation, waterproof and pave deck which aligns with Bridge Conservation Option 3. The proposed rehab of the Old Derry Road Bridge represents a non-substantive alteration as it does not significantly alter the property's appearance. Each of the bridge and HCD heritage attributes will be retained. The Preferred Option of Rehabilitation complies with the Policies and Design Guidelines put out in the City of Mississauga's *Meadowvale Village Heritage Conservation District Plan 2014*. ARA's recommendations included: that any coatings applied to the steel truss elements reflect the existing green colour of the bridge; any concrete patch repair and/or crack injection should be appropriate in colour, pattern and texture; that the bearings at the east abutment should be replaced with like materials; and, that care should be taken with heavy machinery when completing repairs and/or paving the approaches and bridge deck so as not to damage any of the bridge's heritage attributes.

### **2020 – Heritage Impact Assessment, 5150 & 5104 Ninth Line, City of Mississauga (Client: Mattamy Homes)**

ARA was retained to complete a HIA related to the South Ninth Line development at 5150 and 5170 Ninth Line, City of Mississauga as the adjacent property at 5104 Ninth Line is a listed property on the City of Mississauga's Municipal Register of Property of Cultural Heritage Value or Interest. Following consultation, historical research, field survey and evaluation against the criteria set out in Ontario Regulation 9/06 of the *Ontario Heritage Act*, the property at 5104 Ninth Line was not found to meet any of the criteria. Although the property at 5104 Ninth Line was not found to meet the criteria of Ontario Regulation 9/06, it is a historic farmhouse, as such, development considerations that are sympathetic to the existing historic fabric have been suggested. Mitigation measures were recommended for the development at 5150 Ninth Line that consider the existing historic fabric of the adjacent property at 5104 Ninth Line including slight modification to the designs to reflect the proportions, materials and design elements reflective of 5104 Ninth Line; that direct that fencing be erected during construction to ensure that there is no direct impacts to the building; that screening through the use of a privacy fence and retention of mature vegetation be considered; and that the internal road in the concept plan should be reoriented to avoid 5104 Ninth Line. The City of Mississauga approved the HIA and endorsed the recommendations.

### **2019 – Stage 1 Archaeological Assessment, South Main Street Pedestrian Bridge, City of Thorold (Client: McIntosh Perry)**

ARA carried out a Stage 1 assessment of lands with the potential to be impacted by the construction of a pedestrian linkage between South Main Street and Cross Street in the Port Robinson area, City of Thorold, Regional Municipality of Niagara, Ontario. The assessment was completed as a component of a Schedule 'B' Municipal Class Environmental Assessment. The investigation encompassed the right-of-way between roughly Rosedale Avenue and Cross Street. All field observations were made from accessible public areas; accordingly, no permissions were required for property access. At the time of assessment, the study area comprised a pedestrian bridge, part of River Street and South Main Street with associated adjacent graded embankments, portions of the right-of-way and part of the Welland River. The Stage 1 assessment determined that the study area comprised a mixture of areas of archaeological potential, previously assessed areas of no further concern and areas of no archaeological potential. Archaeological Research Associates Ltd. recommends that all identified areas of archaeological potential that could be impacted by the project be subject to a Stage 2 property assessment in accordance with Section 2.1 of the 2011 Standards and Guidelines for Consultant Archaeologists. The report is currently undergoing review by the MHSTCI.

### **2019-2020– Technical Advisory, Stage 1-2 Archaeological Assessments, QEW Credit River Bridge Improvement Project (Client: Jacobs Engineering Group)**

In 2019, ARA carried out Stage 1 and 2 archaeological assessments of lands adjacent to the Queen Elizabeth Way (QEW) Credit River Bridge in the City of Mississauga, Regional Municipality of Peel, Ontario. The QEW Credit River Bridge was identified as a Provincial Heritage Property of Provincial Significance by the Ontario Ministry of Transportation (MTO) under the Ontario Heritage Act (Part III.1) in September 2009. The assessments were undertaken in order to explore the option of a new bridge footprint if the existing bridge was going to be demolished, but demolition is no longer being considered by the province. The province is moving forward with the rehabilitation of the QEW Credit River Bridge. In addition to rehabilitating the existing bridge, the project will also include a new north bridge structure and accommodate the City of Mississauga's active transportation plan and improvements to the QEW/Mississauga Road interchange. The assessed area is not anticipated to be disturbed by the rehabilitation, and the

assessment results discussed herein are provided in fulfillment of archaeological licensing requirements. The Stage 1 assessment determined that the study area comprised a mixture of areas of archaeological potential, areas of no archaeological potential and lands recently subject to marine assessment. The Stage 2 assessment of the identified areas of archaeological potential did not result in the identification of any archaeological materials. ARA recommended that no further assessment be required within the subject lands. A Review and Entry letter in support of these recommendations was issued by the MHSTCI in March 2020.

### **2019–2020 –Technical Advisory and Heritage Impact Assessment, QEW Credit River Bridge Improvement Project (Client: Jacobs Engineering Group)**

ARA completed the Technical Advisory and Heritage Impact Assessment for the QEW Credit River Bridge Improvement Project in the City of Mississauga. The project involved presenting preliminary design considerations and an evaluation of replacement alternatives explored by the Government as part of an EA addendum. As a result of public input rehabilitation for the provincial heritage property of provincial significance (PHPPS) was determined to be the preferred option. ARA completed a Heritage Impact Assessment for the rehabilitation alternative and participated in the Design Presentation Meetings.

## **6.0 SCOPE OF WORK**

The cultural heritage components will be carried out in accordance with current best practices and requirements set out in the following legislation and guidelines: the *Ontario Heritage Act* (R.S.O. 1990); *Provincial Policy Statement* (2020); Parks Canada's *Standards and Guidelines for the Conservation of Historic Places in Canada* (2010); the former Ministry of Culture's *Ontario Heritage Tool Kit Series* (2006); the MHSTCI's *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes*; as well as the City of Mississauga's *Official Plan*, and will adhere to the *City of Mississauga's Cultural Landscape Heritage Impact Assessment (HIA) Terms of Reference* (2017).

ARA will provide its services to undertake an archaeological investigation in accordance with the MHSTCI's current *Standards and Guidelines for Consultant Archaeologists* (2011). The methods used for archaeological assessments in Ontario are laid out in a series of increasingly involved stages, including background study (Stage 1), property assessment (Stage 2), site-specific assessment (Stage 3) and mitigation of development impacts (Stage 4). For this proposal, the archaeological investigation will comprise a Stage 1 Archaeological Assessment.

A description of the work plan for each component can be found in Sections 6.1-6.2.

### **6.1 Cultural Landscape Heritage Impact Assessment**

Based on the information outlined in the City of Mississauga's *Cultural Landscape Heritage Impact Terms of Reference* (2017), it is assumed that a full heritage evaluation will not be required for the properties unless required by City staff. A Cultural Landscape HIA, is conducted to determine how the proposed development will conserve the criteria that render it a cultural heritage landscape and/or features. These criteria are established in the Cultural Landscape Inventory (2005).

The HIA process involves a site visit to the property to photograph the project location. Any existing heritage designations or listings will be identified. ARA will also consult with relevant municipal and historical groups. At minimum, this will include consultation via email with the City

of Mississauga Heritage Planner. As outlined in the City of Mississauga's Cultural Landscape *Heritage Impact Assessment (HIA) Terms of Reference* the proposed development must demonstrate how the new built form reflects the values of the identified cultural heritage landscape and its characterizations that make up that cultural landscape based on information provided by the client. The proposed development will be described based on materials provided by the client. The proposed development will then be examined for potential impacts to any identified cultural landscape criteria. This proposal includes a meeting with the client to go over preliminary mitigation measures to provide an opportunity for the suggestions to be integrated into the design concept or for rationale to be provided by the client regarding feasibility. The HIA will suggest mitigation strategies as well as any considerations for detailed design and/or construction activities to ensure the identified heritage attributes are conserved.

## **6.2 Stage 1 Archaeological Assessment**

The Stage 1 assessment will consist of comprehensive background research into the study area. This is accomplished through an examination of the archaeology, history, geography, and current land conditions in the vicinity of the project lands. This stage also generates an inventory of known archaeological sites within 1 km and previous archaeological fieldwork results within 50 m of the study area, which are used to assist in predicting zones of archaeological potential. Sources utilized during a background study include archival sources (e.g., historical publications and records), current academic and archaeological publications (e.g., archaeological studies, reports and management plans), modern topographic maps, recent satellite imagery, historical maps/atlasses, and the MHSTCI's Ontario Archaeological Sites Database.

A property inspection (site visit) will be conducted by a MHSTCI-licensed Field Director, to gain first-hand knowledge of geography, topography and current land conditions. This inspection will document any features of archaeological potential and map areas of no archaeological potential (i.e., lands disturbed by deep soil moving alterations, etc.). No private properties will be accessed during the assessment without written approval.

The results of ARA's background research as well as the analysis and evaluation of the study area's archaeological potential will form appropriate recommendations (i.e., no further work in areas of no archaeological potential and Stage 2 Archaeological Assessment for all areas of archaeological potential).

## **7.0 INDIGENOUS ENGAGEMENT AND THE ARCHAEOLOGICAL PROCESS**

Engaging Indigenous communities in archaeology is an increasingly important way of acknowledging Indigenous interests in the stewardship of their own heritage. Currently, in the archaeological assessment process, it is considered best practice to engage with local Indigenous communities as early as possible. Following the recommendations of the final report of the Truth and Reconciliation Commission of Canada (TRC) and a number of Supreme Court decisions regarding the Duty to Consult, the MHSTCI has started providing information on all archaeological projects to local First Nations communities. This has prompted at least one community, the Mississaugas of the Credit First Nation (MCFN), to reach out to proponents directly to request that they participate in all fieldwork (Stages 1 through 4) conducted within their traditional territory. To confirm, this project falls within the traditional territory of the MCFN. Other communities with a known interest in the study area include the Six Nations of the Grand River represented by the Haudenosaunee Confederacy Chiefs Council and the Six Nations of the Grand River Elected Council.



ARA recommends that the proponent consider commencing Indigenous engagement in the early stages of development and is happy to support the proponent in the process. If the proponent chooses to invite First Nations to participate at this time ARA can facilitate engagement by initiating contact with Indigenous communities and obtaining monitors if/as directed. Monitoring/participation fees would be paid directly to the First Nation(s) by the proponent and are not included in our budget.

## **8.0 PROJECT SCHEDULE**

The site visit for the HIA can occur: 1) in any season (with the exception of heavy snow that would obscure views of the landscape), 2) when detailed project mapping has been provided in electronic format including property parcels and civic address, and 3) when permission to enter the property has been granted (if necessary). It is anticipated that the site visit will take one day (including travel time) with one heritage staff member. The completion of a site visit is dependant on current recommendations from public health authorities. The draft HIA can be completed and submitted to HDR for review and comment within a timely manner following the completion of the site visit. Typically, a heritage report can be drafted within eight weeks following the completion of the site visit and receipt of all requested material from the proponent, but the exact timeline and schedule can be finalized upon project award. Following review by HDR, revisions will be incorporated into the final version of the report and will be sent to the client electronically.

The background research for the Stage 1 assessment can be initiated as soon as 1) the contract has been awarded and 2) ARA has received the name and contact information for the Approval Authority. It is anticipated that it will take two weeks to compile the research and one day to conduct the property inspection. This estimate includes the work required for the collection and review of recent archaeological reports within 50 m of the study area and compilation of the inventory of archaeological sites within 1 km. An additional week would be required to finalize the archaeological potential modelling. The property inspection will be scheduled as soon as the research has been compiled and the preliminary modelling is complete. All archaeological fieldwork, including Stage 1 property inspections, are weather dependent and ground conditions must meet MHSTCI standards (i.e., no snow cover, frozen ground, conditions of excessive moisture, etc.) at the time of assessment.

The draft Stage 1 archaeological report can be prepared and presented to HDR and the City of Mississauga for review and comment in a timely fashion subsequent to the property inspection. After the review of the Stage 1 report, a final report will be provided in electronic format and submitted to the MHSTCI for Review and Entry into the Ontario Public Register of Archaeological Reports.

## **9.0 ARA STAFF HOURLY RATES**

The estimated costs in this document have been provided by task, position, number of hours and price per hour. ARA pays travel time to all employees from the closest office location. Table 1 presents an overview of the hourly rates for ARA staff positions. Disbursements for this assignment will include a daily car allowance of \$125/day.

**Table 1: ARA Staff Hourly Rates**

<b>Position</b>	<b>Hourly Rate</b>
Principal	\$150.00
Archaeological Operations Manager	\$100.00
Indigenous Engagement and Accommodation Manager	\$100.00
Production and Deliverables Manager	\$100.00
Geomatics and Geophysics Manager (GPS and GPR Technician)	\$90.00
Project Archaeologist	\$80.00
Field Director	\$75.00
Health and Safety Manager	\$75.00
Heritage Cartographer	\$75.00
Accountant/Bookkeeper	\$75.00
Laboratory and Collections Manager	\$75.00
Researcher	\$75.00
Technical Writer	\$75.00
Field Technician	\$60.00
Laboratory Technician	\$60.00

## 10.0 PROJECT ASSUMPTIONS AND PRICING

The factors considered in the preparation of the following estimates include:

- 1) HDR will provide as many other project details as possible (i.e., preliminary design plans, Visual Impact or Screening studies and/or applicable graphics) at project commencement to assist with determining project impacts and suggested mitigation measures;
- 2) As trees are a feature of the CHL which may be impacted by the project, the proponent shall be responsible for providing an arborist report if required by City of Mississauga Staff;
- 3) ARA will consult with the City of Mississauga at project initiation regarding the scope of the HIA and to obtain any available information. If, as a result of this conversation, the scope of the HIA changes a revised proposal will be drafted;
- 4) The HIA site visit will take one-day with one heritage staff member to complete and can occur in any season (with the exception of heavy snow that would obscure views of the landscape) once detailed project mapping has been provided in electronic format including and when permission to enter the properties has been granted;
- 5) The property is associated with a Cultural Heritage Landscape (Erindale Village);
- 6) This proposal includes a meeting with the client to go over preliminary mitigation measures to provide an opportunity for the suggestions to be integrated into the preferred concept or for rationale to be provided by the client regarding feasibility;
- 7) As required by the City of Mississauga *Cultural Landscape Heritage Impact Assessment Terms of Reference*, the proponent will outline how the proposed development will conserve the cultural heritage landscape or features;
- 8) Due to the COVID-19 pandemic, municipal files and/or research and library archives may be inaccessible;
- 9) The cost estimate for the heritage assessment includes consultation via email with relevant heritage stakeholders (i.e., City and/or historical societies) to obtain information about the study areas. Additional meetings with HDR or heritage stakeholders can be scheduled and charged out for time and materials;
- 10) As per ARA's *COVID Safety and Work Process Manual*, it is requested that all meetings be held virtually;
- 11) The heritage cost estimate includes the submission of the draft report and the incorporation of one set of consolidated comments from the City of Mississauga c/o HDR to produce a final report. If additional drafts of the heritage report are required, including

- the incorporation of the results of other technical reports beyond those provided at project initiation, or revision of the report to acknowledge the implementation of any mitigation measures suggested in the draft report, costs can be revised accordingly by mutual consent;
- 12) HDR will provide the name and contact information for the Approval Authority (upon contract award);
  - 13) Background research can commence upon contract award;
  - 14) The entire west retaining wall study area and a portion of the east retaining wall study area has been previously subjected to a Stage 1 assessment and the recommendations of that assessment will be summarized in our report;
  - 15) ARA can schedule the Stage 1 property inspection once background research is complete and permission to enter has been granted (if required);
  - 16) All archaeological fieldwork, including Stage 1 property inspections, are weather dependent and ground conditions must meet MHSTCI standards (i.e., no snow cover, frozen ground, conditions of excessive moisture, etc.);
  - 17) ARA would be happy to facilitate engagement by notifying Indigenous stakeholders of the project and our fieldwork as/if directed by the proponent (Indigenous monitoring fees would require direct payment by HDR or the City of Mississauga and have not been included in this estimate);
  - 18) If Indigenous monitors are engaged to participate in archaeological fieldwork, a change order may be requested for the coordination of fieldwork activities and the production of a Record of Indigenous Engagement to be submitted to the MHSTCI with the Stage 1 report;
  - 19) If ARA is delayed in the performance of its work by a stop work order issued by a court or other public facility, labour dispute, pandemic restrictions, adverse weather conditions, extreme heat, any public protest, blockade agitation, or threat, or any other cause beyond ARA's control (any one or more of the foregoing being a "Delay Event"), then ARA will be afforded a reasonable extension of time commensurate with any such Delay Event;
  - 20) All ARA staff will be required to follow internal COVID-19 health and safety protocols and procedures and separate travel during site visits has been considered to maintain social distancing;
  - 21) If efficiencies are found over the course of the project associated cost savings will be reflected in our invoicing; and
  - 22) If requirements for the project differ from what has been assumed in this document, costs can be revised accordingly by mutual consent.

The total estimated cost for all tasks that may be required to conduct the Heritage Impact Assessment are listed in Table 2. The total estimated cost for all tasks that may be required to conduct the Stage 1 Archaeological Assessment are illustrated in Table 3. ARA reserves the right to reallocate time as necessary to complete the project on time and on budget.

**Table 2: Heritage Impact Assessment Cost Estimate**

<b>HDR – Dundas Street Retaining Walls</b>					
<b>Heritage Impact Assessment – Project #2021-0225</b>					
Activity		Position	Number of Hours	Price per Hour	Total
Task 1	Project Management	Heritage Manager	5	\$100.00	\$500.00
		Project Manager	5	\$80.00	\$400.00
Task 2	Site Visit	Project Manager	8	\$80.00	\$640.00
Task 3	Stakeholder Consultation	Project Manager	4	\$80.00	\$320.00
Task 4	Data Analysis & Report Preparation	Heritage Manager	6	\$100.00	\$600.00
		Project Manager	22	\$80.00	\$1,760.00
		Technical Writer	20	\$75.00	\$1,500.00
Task 5	Cartography	Heritage Cartographer	8	\$75.00	\$600.00
Task 6	Q/A & Senior Review	Principal	2	\$150.00	\$300.00
Task 7	Admin	Bookkeeper	1	\$75.00	\$75.00
Activity – Total					\$6,695.00
<b>Disbursements</b>					
			Units	Unit Price	Total
Company Car (Daily Rate)			1	\$125.00	\$125.00
Disbursements – Total					\$125.00
<b>HIA Total</b>					<b>\$6,820.00 + HST</b>

**Table 3: Stage 1 Archaeological Assessment Cost Estimate**

<b>HDR – Dundas Street Retaining Walls</b>					
<b>Stage 1 Archaeological Assessment – Project #2021-0224</b>					
Activity		Position	Number of Hours	Price per Hour	Total
Task 1	Project Coordination	Operations Manager	2	\$100.00	\$200.00
		Project Archaeologist	4	\$80.00	\$320.00
Task 2	Background Research	Researcher	8	\$75.00	\$600.00
Task 3	Property Inspection	Field Director	6	\$75.00	\$450.00
Task 4	Cartography	Heritage Cartographer	8	\$75.00	\$600.00
Task 5	Report Preparation & MHSTCI Consultation	Deliverables Manager	6	\$100.00	\$600.00
		Technical Writer	12	\$75.00	\$900.00
Task 6	Q/A & Senior Review	Principal	2	\$150.00	\$300.00
Task 7	Admin	Accountant/Bookkeeper	1	\$75.00	\$75.00
Activity – Total					\$4,045.00
<b>Disbursements</b>					
			Units	Unit Price	Total
Company Car Allowance (Daily Rate/Vehicle)			1	\$125.00	\$125.00
Disbursements – Total					\$125.00
<b>Stage 1 Total</b>					<b>\$4,170.00 +HST</b>

## 11.0 OVERALL FEE SCHEDULE

The total combined price for heritage and archaeological work outlined for the project is summarized in Table 4 below.

**Table 4: Overall Archaeological and Heritage Fee Schedule**

Overall Project Fee Schedule	
Project Component	Cost Estimate
Heritage Impact Assessment	\$6,820.00
Stage 1 Archaeological Assessment	\$4,170.00
<b>Grand Total</b>	<b>\$10,990.00 + HST</b>

## 12.0 DECLARATION AND SIGNATURE

This proposal is certified accurate according to 1) the project information provided with the email on April 29 and April 30, 2021, 2) previous experience conducting similar projects and 3) the project assumptions on which it is based. Should the contract be awarded, ARA is fully committed to this assignment and has no conflicts of interest with respect to this project. If you have any questions regarding this proposal, please contact our office.

### ARCHAEOLOGICAL RESEARCH ASSOCIATES LTD.



**Paul Racher, MA, CAHP, RPA**  
Principal - Management and Senior Review

	Project Management			Total Hr.	Sub-Contractor
	PM	Lead	Admin.		
<b>Approved Roster Rate</b>	\$ 185.00	\$ 185.00	\$ 70.00		
<b>Project Management - Sub-Consultants</b>					
Administration of Sub-Consultant contracts	20	5	20	20	
Review of Sub-Consultant deliverables	35	8		35	
<b>Sub-Consultants</b>					
NRSI					\$ 25,586.00
ARA					\$ 10,990.00
<b>Total Hour</b>	55	13	20		
<b>Total Cost</b>	<b>\$ 10,175.00</b>	<b>\$ 2,405.00</b>	<b>\$ 1,400.00</b>	<b>\$ 13,980.00</b>	<b>\$ 36,576.00</b>

<b>Project Management</b>	<b>\$ 13,980.00</b>
<b>Sub-Consultants</b>	<b>\$ 36,576.00</b>
<b>Total</b>	<b>\$ 50,556.00</b>