



Corporate Services
Department
Materiel Management

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

Contract

FILE END DATE

2022

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>

Release Order

Vendor:
HDR CORPORATION
100 YORK BOULEVARD, STE 300
RICHMOND HILL ON L4B 1J8
Fax Number : 289-695-4601

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

Ship to:
AS DIRECTED

Invoice to:
The Corporation of the City of Mississauga
Finance Department
300 City Centre Drive
Mississauga ON L5B 3C1

Purchasing Agent
Muneef Ahmad

Purchasing Agent

PO Number 4500506908
PO Date 2019 11 01
PO Revised Date
Contract Number 4600017276
Vendor Number 1025282
Valid from
Valid to
Buyer/phone S/Centre Fleet Inv/905-615-3200 ext 3067
Email

City Ref: PRC001136

Contract Manager

Delivery Date:
2019 11 01

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

-OR-

Vicky Wei @ (905) 615-3200, ext. 3017, or by email at 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.

Item	Material	Unit	Description	Price per unit	Extension
Order Quantity					
00001		Dollars	IPE Consultant Roster Assignment		140,140.00

Project Name/Description: Dundas Street Retaining Wall Rehabilitation
Roster Category: Structural Engineering

Vendor:
 HDR CORPORATION
 100 YORK BOULEVARD, STE 300
 RICHMOND HILL ON L4B 1J8
 Fax Number : 289-695-4601

PO Number 4500506908
 PO Date 2019 11 01
 Page 2

<i>Item</i>	<i>Order Quantity</i>	<i>Material</i>	<i>Unit</i>	<i>Description</i>	<i>Price per unit</i>	<i>Extension</i>
Quote Date:2019/10/11						
PMR:Dagmar Breuer						
			1 \$		1.00	140,140.00
				HST		18,218.20
				Item Net Price		158,358.20
				Gross Price		140,140.00
				HST		18,218.20
				Purchase Order Total		158,358.20



October 11, 2019

Dagmar Breuer
 City of Mississauga
 300 City Centre Drive
 Mississauga, ON L5B 3C1

RE: Mississauga Roster Assignment

Detailed Design and Construction Administration Services for the Rehabilitation of the Dundas Street Retaining Walls (East and West) located on the north side of Dundas Street approximately 200m and 750m east of Mississauga Road

Dear Ms. Breuer,

In response to the City's request for the detailed design and construction administration services for the Rehabilitation of Dundas Street Retaining Walls (East and West), the following services will be completed as part of Roster Assignment. HDR agrees to perform the tasks agreed during the meeting held on Wednesday October 02, 2019 and as described below. We understand that the City wishes to replace two retaining walls on Dundas Street in the City of Mississauga.

The lump sum fee required to carry out for the Dundas Retaining Wall Replacement is **\$140,140** (excluding HST). Our time-task summary/fee table is attached at the end of this work plan.

Below please find HDR's assumptions, exclusions, staffing, and a list of deliverables for the Roster Assignment as well as project management and coordination.

Project Management

Work plan	<ul style="list-style-type: none"> Oversee the entire project and manage day to day activities The main contact for the City and sub-consultants Project Manager will attend key milestone meetings Progress calls will occur bi-weekly, unless otherwise required Progress meetings can be phone calls, approximately ½ hour long
Staffing	<ul style="list-style-type: none"> Goby Jeyagoby, P.Eng., Project Principal Eldwin Yau, P.Eng., Project Manager
Deliverables	<ul style="list-style-type: none"> Project Work Plan and Design Schedule QC Plan Monthly Invoices, progress reports and schedule updates

Meetings

Work plan	<ul style="list-style-type: none"> The HDR Project Principal and Project Manager will attend the start-up meeting and key Milestone meetings (30%, 90%) with the City The HDR project manager will attend all progress meeting with the City (3 progress meeting assumed) The HDR project manager will attend all internal meetings
Assumptions/ Exclusions	<ul style="list-style-type: none"> All meeting with the City will take place in the City's office
Staffing	<ul style="list-style-type: none"> Goby Jeyagoby, P.Eng., Project Principal Eldwin Yau, P.Eng., Project Manager
Deliverables	<ul style="list-style-type: none"> Meeting Agendas Meeting Notes

Data Collection

Work plan	<ul style="list-style-type: none"> Review background documents, including: structural inspection reports, existing drawings and any preliminary reports Conduct initial site visit
Assumptions/ Exclusions	<ul style="list-style-type: none"> City has no utility information available for these two sites City will perform any Tree Survey or Arborist Reports that may be required City will obtain permits for any identified trees to be removed as part of the proposed works, and undertake removal of the trees that may be required No other Environmental Specialist Reports are required
Staffing	<ul style="list-style-type: none"> Eldwin Yau, P.Eng., Bridge Engineer Alicia Biggs, P.Eng., Roadway Engineer City of Mississauga
Deliverables	<ul style="list-style-type: none"> Permits/Arborist reports as required – City of Mississauga

Detailed Condition Survey Inspection

Work plan	<ul style="list-style-type: none"> HDR has retained Bridge Check Canada to carry out the detailed condition survey of the retaining walls Detailed condition survey inspection to be carried prior to the preliminary design Detailed visual inspection for the two retaining walls including area of sever corrosion, missing section, cracks, rotation, deflection, separation, loss of bolt and loss of backfill materials Detailed visual inspection for the sidewalk in areas on top of the retaining walls including cracks, settlement, rotation, areas of undermining and separation between concrete and asphalt Detailed inspection of the steel hand railings on top of the retaining wall including loose connection, rust and impact damage Document all defects described above on drawings Prepare draft detailed inspection reports including inspection summary, photos and inspection drawings Prepare final inspection report and implement comments from the City.
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Assumptions/ Exclusions	<ul style="list-style-type: none"> • It is assumed the City will clear the trees, bushes and any vegetation prior to the inspection • The retaining walls covered with vegetation will hinder a close up visual inspection to assess their condition as such portions of the walls will not be inspected and identified on the report • Rope inspection maybe required in some locations at the east retaining wall. The condition will be determined during the site visit
Staffing	<ul style="list-style-type: none"> • Eldwin Yau, P.Eng., Project Manager (HDR) • Alireza Keramati, Inspection Project Manager (Bridge Check Canada) • Mohammad Abdollahi, Inspection Manager (Bridge Check Canada) • Savio DeSouza, Inspection QA/QC (Bridge Check Canada) • City of Mississauga
Deliverables	<ul style="list-style-type: none"> • Draft and final structural inspection reports • Vegetation removal by City of Mississauga

Utility Locations

Work plan	<ul style="list-style-type: none"> • HDR to undertake utility locates and identify exploration requirements • City will coordinate and engage subcontractor to undertake any exploration required to identify the depth of any/all conflicted utilities • HDR will incorporate utility exploration information to produce an existing conditions map • HDR to prepare Composite Utility Plans and show existing utilities City will circulate composite utility plan to Utilities to confirm information • HDR to prepare Utility Relocation Plans and show conflicts • City will circulate information related to impacts to Utilities and coordinate for relocations, if required
Assumptions/ Exclusions	<ul style="list-style-type: none"> • City has no utility information • It is not anticipated that the illumination poles will be relocated, but will be supported in place during retaining wall work • Utility conduits and junction boxes for illumination will be retained in place, and supported during construction • Potholing, Level A, if required. Additional cost will be required • No Entry into confined spaces • No Measurement of MH inverts • No Pumping water in manhole • Utility relocations are not anticipated
Staffing	<ul style="list-style-type: none"> • Alicia Biggs, P.Eng., Roadway Engineer • City of Mississauga
Deliverables	<ul style="list-style-type: none"> • CAD Utility File Drawing • Composite Utility Plans • Utility Impact Plans • SUE and coordination with utility companies for utility conflicts and relocation

Topographic Survey

Work plan

- Survey to include the roadway curb (both sides of the road), centerline (including the elevation on centerline, medians, all pavement markings, and guiderail in median) to the retaining wall face, and beyond the retaining wall face to the right-of-way line plus 5m or at least 15m from the face of the wall
- Capture all of the key features that may be potentially impacted by replacement of the wall, or access along the roadside to reach the wall. These features may include all breaks on the ground surface, locations of all manholes, catch basins, signs, illumination poles, hydro poles, guiderail, etc.
- Capture the location and dimension of trees within the survey area
- Capture the location of the utilities and included in the survey files

Assumptions/
Exclusions

- The City will be coordinating and conducting the topographic survey
- Utilities shall be located prior to the survey
- **West Retaining Walls:** The survey in will begin from the east end of the Credit River Bridge and extend to the entrance of the Erindale Park. The limit of survey diagram is presented below:



- **East Retaining Wall:** The survey will begin from approximately 100m away from the west end of the retaining wall in the Erindale Park parking lot. The survey will end at approximately 100m away from the east end of the retaining wall near the Dundas St W and Dundad Crescent intersection. The limit of survey diagram is presented below:



Staffing	<ul style="list-style-type: none"> • Eldwin Yau, P.Eng., Project Manager/Bridge Engineer • Alicia Biggs, P.Eng., Roadway Engineer
Deliverables	<ul style="list-style-type: none"> • 2D topographic survey with breaklines, 3D surface of the original ground, and the point file used to create the surface

Geotechnical

Work plan	<ul style="list-style-type: none"> • A visual examination the slope will be carried out to document existing conditions and identify evidence of slope instability • Determine the subsurface soil and ground water condition • Conduct borehole testing • Moisture content determinations will be carried out on all recovered samples, and grain size distribution analyses and Atterberg Limits testing will be conducted on selected samples • Representative soil samples will be submitted to an accredited laboratory for chemical analysis of selected parameters outlined in Ontario Regulation 153/04 (metals and inorganics, and petroleum hydrocarbon compounds if suspected) to evaluate disposal requirements for excavated material. The corrosivity of the soils will also be tested • The results of the investigation will be summarized in a Geotechnical Investigation Report
Assumptions/ Exclusions	<ul style="list-style-type: none"> • The City will provide access for the borehole testing including removal of temporary barrier wall • The global stability of the slope will be reviewed based on the information presented in the preliminary report as well as the results of the visual site examination. If stability issues are observed, additional investigation may be recommended • Will not include groundwater testing or a hydrogeological assessment for the purposes of construction dewatering discharge requirements, an MECP EASR submission, or PTTW application • The City will provide permit for the geotechnical investigation
Staffing	<ul style="list-style-type: none"> • Eldwin Yau, P.Eng., Project Manager/Bridge Engineer (HDR) • Murray Anderson, Geotechnical Lead (Thurber Engineering)
Deliverables	<ul style="list-style-type: none"> • Draft and final geotechnical report

Structural Design

Work plan	<ul style="list-style-type: none"> • Review all background information including inspection reports, studies, drawings, etc. • Review condition survey report prepared by Bridge Check Canada. • Develop retaining wall replacement alternatives. Three alternatives will be investigated as follows: <ol style="list-style-type: none"> 1. Partial replacement to the deteriorated retaining walls. The new retaining walls will provide an additional 15 years of service life to the existing retaining walls. 2. Remove and replace the entire existing retaining walls. The new retaining walls shall have a minimum service life of 15 years.
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	<p>3. Remove the existing retaining walls and install new retaining walls in the ultimate location to accommodate proposed Dundas BRT/LRT future development. Detailed design of this option is not included in our fee estimate as part of this assignment.</p> <ul style="list-style-type: none"> • Assess and evaluate structural alternatives, including technical feasibility, protection of environment, economics (cost and life cycle costs), and constructability and reduced maintenance requirements • Summarize quantities/costs for life cycle cost analysis, including high-level utility and roadway reinstatement costs • Prepare draft structural design memo and general arrangement of the preferred option for 30% submission • 30% submission to be reviewed and approved by the by the City • Carry out retaining wall replacement design in accordance with CHBDC, the Structural Manual and Ministry Standards. The detailed structural design will be carried out by a Professional Engineer, registered in the Province of Ontario, and will be independently checked by a Professional Engineer, registered in the Province of Ontario • The Detail Design will be coordinated and checked with other functional design disciplines to make certain that the structural work is integrated into the overall design package and reflects final designs for drainage, environmental, geotechnical, and roadway components • Prepare contract drawings for the proposed works; Contract drawings will be prepared in accordance with current City standards, and will be checked by the Design and Checking Engineers, who will sign and affix their seals on the drawings. The design and preparation of contract drawings, documents and quantities will be subject to HDR’s quality control and quality program that will be developed for the project, which will include an independent review by Engineers from our Structural group • Prepare list of tender items and related special provisions
<p>Assumptions/ Exclusions</p>	<ul style="list-style-type: none"> • The retaining walls will likely need to be replaced with a new retaining wall on a new alignment in about 15 years’ time to accommodate proposed Dundas BRT,. Therefore the rehabilitation design for the retaining wall in its current alignment only need to provide a service life of 15 years • Viability of partial retaining wall replacement option should be confirmed upon completion of detailed condition survey and may limit the retaining wall choices such that proper tie-in between the existing and new retaining wall could be achieved • City will provide the proposed Right of Way to accommodate the Dundas BRT so that approximate length and location of the new wall could be identified • Sidewalk width will remains the same for all alternatives • All drawings will be prepared in MicroStation
<p>Staffing</p>	<ul style="list-style-type: none"> • Eldwin Yau, P.Eng., Project Manager/Bridge Engineer • Tony Zhang, P.Eng., Design Check Engineer • Vera Rogacheva, Structural Drafter • Selva Balasundaram, P.Eng., QA/QC

Deliverables	<ul style="list-style-type: none"> • Draft and final structural design memo • Structural drawings and contract documents
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Roadside Design

Work plan	<ul style="list-style-type: none"> • Review design surface and produce existing condition cross sections • Develop Draft Design Criteria and Preliminary Design (30%) Drawings of the preferred design (1:500 scale), including cross sections • Complete design in roll plan for presentation and review • Summarize 30% review comments in comment response table and confirm response/approach • Prepare Final Design Criteria and 60% Design Drawings. Prepare initial quantities, cost estimate, and special provisions • Summarize 60% review comments in comment response table and confirm response/approach • Finalize design, and prepare Pre-Tender Package, including drawings, cost estimate, construction schedule, and specifications
Assumptions/ Exclusions	<ul style="list-style-type: none"> • Traffic Management Plans are not required. Contractor will manage work zone in accordance with Book 7, and will submit plans as part of their construction requirements • Pavement marking plans are not required • Horizontal/vertical alignment, location of existing curb line, and stormwater network of existing roadway will be maintained • Guiderail will be removed to complete wall work, and shown for reinstatement on design plans • The sidewalk will be closed during construction, and accommodations to route pedestrians during construction are not required • Illumination plans are not required • Streetscape plans are not required • Design will be completed in MicroStation • Permits, if required, will be obtained by the City • No changes to the SWM network or outfalls is anticipated • Permissions to Enter are not required • Property acquisition plans are not required • Pavement design report is not required • SWM analysis or drainage reports are not required • Permits for construction are not required • Plans anticipated: New construction, removals, up to 2 detail sheets
Staffing	<ul style="list-style-type: none"> • Alicia Biggs, P.Eng., Roadway Engineer • Yang Cheang, P.Eng., QA/QC
Deliverables	<ul style="list-style-type: none"> • Draft Design Criteria, 30% Design Drawings, Cross Sections • Final Design Criteria, 60% Design Drawings, Cross Sections, Quantities, Draft Special Provisions • Pre-Tender Package and Signed Drawings

Contract Administration

Work plan	<ul style="list-style-type: none"> The contract administrator will coordinate contract schedule, attend construction meetings, prepare meeting minutes, process invoices, and communicates between the contractor, the City and the consultant The inspector will carry out field quality assurance test, review contract plans and specifications for compliance with the latest codes and specifications and prepare inspection reports
Assumptions/ Exclusions	<ul style="list-style-type: none"> Assumed eight weeks of construction in 2020 for both retaining walls Contract Administrator – on part time basis, 1 day/week (8 hours per day) Field Inspector – on part time - 3 days/week (10 hours per day assumed including travel time)
Staffing	<ul style="list-style-type: none"> TBD
Deliverables	<ul style="list-style-type: none"> Meeting Minutes Construction Records/Diary Progress payment certificates Defects/Deficiency List

Design Fee

Project Management	\$ 6,000
Structural Design	\$ 43,700
Roadway Design	\$ 21,240
Condition Survey	\$ 5,100
Condition Survey - Rope Access Personnel (Provisional)	\$ 6,500
Geotechnical Investigation and Reporting	\$ 24,100
Construction Service	\$ 30,400
Expense	\$ 3,100
Total (Excluding HST)	\$ 140,140

We confirm that the HDR team members and our sub-consultants is committed to delivering a successful project while functioning as your trusted advisor. We look forward to the opportunity to serve the City.

Thank you for your consideration.

Sincerely,
HDR Corporation



Tyrone Gan, P.Eng.
Senior Vice President
Regional Transportation Director, Canada

Time Task Matrix

- PM - Project Manager
- SE - Senior Bridge Engineer
- IE - Intermediate Bridge Engineer
- JE - Junior Bridge Engineer/EIT
- IC - Intermediate Civil Engineer
- JC - Junior Civil Engineer/EIT
- IN - Inspector
- CA - Contract Administrator

	Project Management		Structural				Civil/Road		Construction		Total Hr.	Sub-Contractor
	PM	Admin.	SE	IE	JE	Tech. / Drafter	IC	JC	IN	CA		
Rate	\$ 185.00	\$ 70.00	\$ 175.00	\$ 140.00	\$ 100.00	\$ 100.00	\$ 140.00	\$ 100.00	\$ 100.00	\$ 100.00		
Project Management												
Start-Up Meeting	2	2									4	
Project/QC Plan	1			4							5	
Project Management	16										16	
Core Project Team Meetings (4 Meetings)				4			4				8	
Metting with The City (3 Meetings)	9	3	9								21	
Preliminary Design												
Initial Site Visit			4	4							8	
Background Information Review			2	4			6				12	
Condition Survey			4								4	\$ 5,100
Condition Survey - Rope Access Personnel (Provisional)											0	\$ 6,500
Geotechnical Investigation & Reporting			2	4							6	\$ 24,100
Develop Design Options			2	8			8				18	
Cost Estimate and Life Cycle Analysis			2	16			4				22	
Prepare Structural Design Memo			4	24	16						44	
Utility Coordination/Composite Utility Map							12	4			16	
Preliminary Design Drawing (GA)			2	4		32					38	
Detailed Design												
Prepare Design Criteria							2				2	
Conduct Detailed Design			8	40	16	60	30	60			214	
Utility Coordination/Utility Relocation Plan							12	8			20	
Detailed Construction Cost Estimate					4		2				6	
Detailed Construction Schedule			2								2	
Tender Document Preparation			4	12			8	4			28	
Prepare Final Design Package		2		2	4		4	2			14	
QA/QC	4						4				4	
Construction Service												
Construction Support Services		4	8		12	16						
Construction Inspection									240			
Contract Administration										64		
Total Hour	32	11	53	126	52	108	96	78	240	64	860	
Total Cost	\$ 5,920	\$ 770	\$ 9,275	\$ 17,640	\$ 5,200	\$ 10,800	\$ 13,440	\$ 7,800	\$ 24,000	\$ 6,400	\$ 101,245	\$ 35,700

Project Management	\$ 6,000	4%
Structural Design	\$ 43,700	31%
Roadway Design	\$ 21,240	15%
Condition Survey	\$ 5,100	4%
Condition Survey - Rope Access Personnel (Provisional)	\$ 6,500	5%
Geotechnical Investigation and Reporting	\$ 24,100	17%
Construction Service	\$ 30,400	22%
Expense	\$ 3,100	2%
Total	\$ 140,140	100%