

FOURTH AMENDATORY AGREEMENT

THIS FOURTH AMENDATORY AGREEMENT is made and entered into by and between the **CITY AND COUNTY OF DENVER**, a municipal corporation of the State of Colorado (the “City”) and **DEIGHTON ASSOCIATES LTD.**, a foreign corporation, whose address is 223 Brock Street North, Unit 7, Whitby, ON L1N 4H6, Canada, (the “Consultant”), jointly “the parties”.

RECITALS

A. The Parties entered into an Agreement dated **April 20, 2016**, an Amendatory Agreement dated **April 27, 2017**, a Second Amendatory Agreement dated **April 4, 2018** and a Third Amendatory Agreement dated **April 2, 2019** (collectively, the “Agreement”) for the continued refinement and enhancement of the CCD Transportation Asset Management System.

B. The Parties wish to amend the Agreement to add to the Scope of Work, extend the Term and increase compensation to the Consultant.

NOW, THEREFORE, the parties hereby amend the Agreement as follows:

1. All references to “Exhibit A, A-1 and A-2” in the existing Agreement shall be amended to read: “Exhibit A, Exhibit A-1, Exhibit A-2, Exhibit A-3 and Exhibit A-4, as applicable.” The Scope of Work marked as Exhibit A-4 is attached hereto and incorporated herein by this reference.

2. Article 3 of the Agreement entitled “**TERM**” is hereby amended to read as follows:

“**3. TERM:** The Agreement will commence on **July 1, 2020** and will expire on **June 30, 2021** (the “Term”).”

3. Article 4 (a) of the Agreement entitled “**FEE**” is amended to read as follows:

“**a. Fee:** The City shall pay, and the Consultant shall accept as the sole compensation for services rendered and costs incurred under the Agreement the amount of **ONE MILLION SEVEN HUNDRED SEVENTY- FOUR THOUSAND ONE HUNDRED FIFTY-FIVE DOLLARS AND ZERO CENTS (\$1,774,155.00)** for fees. Amounts billed may not exceed the rates set forth in **Exhibit A.**”

4. Article 4 (d-1) of the Agreement entitled “**MAXIMUM CONTRACT AMOUNT**” is amended to read as follows:

“**d. Maximum Contract Amount**

(1) Notwithstanding any other provision of the Agreement, the City's maximum payment obligation will not exceed **ONE MILLION SEVEN HUNDRED SEVENTY- FOUR THOUSAND ONE HUNDRED FIFTY-FIVE DOLLARS AND ZERO CENTS (\$1,774,155.00)** (the "Maximum Contract Amount"). The City is not obligated to execute an Agreement or any amendments for any further services, including any services performed by Consultant beyond that specifically described in Exhibit A. Any services performed beyond those in **Exhibit A** are performed at Consultant's risk and without authorization under the Agreement."

5. Article 9 (h) of the Agreement is amended to read as follows:

9. INSURANCE:

(h) Personal Automobile Insurance: Contractor shall ensure personal automobile insurance is in force with limits of \$100,000 bodily injury per person; \$300,000 bodily injury per accident; \$50,000 property damage for all vehicles used in performing services under this Agreement. Contractor represents, as material representations upon which the City is relying, that Contractor does not own any fleet vehicles and that in performing Services under the Agreement, Contractor's owners, officers, directors, and employees use their personal vehicles. Contractor shall ensure that any person operating a motor vehicle in performing Services under the Agreement shall keep in full force Personal Auto Liability coverage with minimum required limits.

6. Except as herein amended, the Agreement is affirmed and ratified in each and every particular.

7. This Amendatory Agreement will not be effective or binding on the City until it has been fully executed by all required signatories of the City and County of Denver, and if required by Charter, approved by the City Council.

[SIGNATURE PAGES FOLLOW]

Contract Control Number: DOTI-202054998-04 [PWADM-201627262-04]
Contractor Name: DEIGHTON ASSOCIATES LTD.

IN WITNESS WHEREOF, the parties have set their hands and affixed their seals at
Denver, Colorado as of:

SEAL **CITY AND COUNTY OF DENVER:**

ATTEST: By: _____

APPROVED AS TO FORM: **REGISTERED AND COUNTERSIGNED:**

Attorney for the City and County of Denver

By: _____ By: _____
By: _____

Contract Control Number:
Contractor Name:

DOTI-202054998-04 [PWADM-201627262-04]
DEIGHTON ASSOCIATES LTD.

DocuSigned by:
Robert Piane, P.Eng.
By: FA3FAD020E0A4D8...

Name: Robert Piane, P.Eng.
(please print)

Title: President / Director
(please print)

ATTEST: [if required]

By: _____

Name: _____
(please print)

Title: _____
(please print)



Deighton

Exhibit A-4

City and County of Denver

Transportation Asset Management 2020 Work Proposal

Prepared by: Deighton Associates Limited

Date: 2020-01-24



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CCD Transportation Asset Management 2019 Proposal

Introduction

The City and County of Denver (CCD) transportation asset management system began with the implementation of a dTIMS based pavement management system in 1996. Since that initial implementation, Deighton Associates Ltd., (DAL) and CCD have continuously enhanced and refined the asset management methodology and scope of assets being managed.

This proposal is provided to CCD, Department of Transportation and Infrastructure, Asset Management Division as a basis for the continued refinement and enhancement of the CCD Transportation Asset Management system.

Tasks in this Proposal

The following tasks will be considered in this proposal:

1. Alley Analysis
2. Demonstration - BI Dashboard, Crack Seal and RCI
3. Curb Ramp Application Modifications
4. Importing Completed, Committed and Bond Work
5. Data Collection Preparations
6. dTIMS BI Connector
7. Annual Software Support and Maintenance
8. Web Hosting

Each of these tasks will be summarized in the following sections and estimates of time and cost will be provided at the end of this proposal. In preparation of this proposal Deighton and CCD have agreed to “roll-over” the uncompleted work from the 2019 work proposal. The value of this

roll-over work (\$129,093.00) will be summarized as a single line in the cost proposal chart.

Alley Analysis

CCD has collected alley inventory and condition data and preliminary runs of the analysis have been executed. Based on the initial results, some modifications may need to be made to the Slurry Seal triggering algorithm. With final budget numbers from CCD the analysis can then be run, and the results and documentation delivered.

It was agreed by Deighton and CCD to only consider using data that was collected up to December 31, 2019 in the analysis. This should give a 90 to 95 percent coverage across the network of alleys.

Demonstration

Several enhancements have been made to the CCD dTIMS setup for various assets. Deighton will plan a trip to Denver to demonstrate these enhancements and train staff on their use and interpretation.

The areas to be covered will include:

- BI Dashboard
- Crack Seal Analysis and Programming
- RCI Calculations

Curb Ramp Application Modifications

Various curb ramp application modifications have been suggested by CCD staff. This task will allow for the modification and documentation of the changes to the mobile curb ramp data collection application.

The primary change will be made to the way that the inspectors record the Running and Cross slopes of the ramps. The issue with the application

concerns the measurement of the Running Slope of the curb ramp. Two measurements of Running slope need to be made. If the measured Running Slopes different by a percent greater than or equal to 1.5 then the inspector needs to be notified (by a popup or flag) that they need to measure three cross slopes and record the greatest of the three. Some modifications to the Curb Ramp dashboard will also need to be made after the modifications to the application are complete.

Deighton will need to make these modifications to the Curb Ramp application and CCD will train their inspectors on how to inspect accordingly.

The designation of a Curb Ramp as being, “Maximum Extent Feasible” (MEF), will be determined and noted outside of the Curb Ramp application. The dTIMS Curb ramp table will be modified with two new attributes that will signify a Curb Ramp’s MEF status and allow a hyperlink to a pdf of the completed MEF form.

Import Completed, Committed and Bond Work

CCD staff will summarize their completed 2019 work, Bond work and committed road work and Deighton will modify the dTIMS database to accept this data and import it to support the next strategic analysis. CCD would like the 2020 and 2021 committed work entered into dTIMS.

Data Collection Preparations

CCD will be collecting updated condition and inventory data for various assets in the 2020 calendar year. In the past Deighton has taken on the role of evaluating various vendors through an RFP process and contract with a data collection vendor that meets specific technical, scheduling and budget requirements. CCD will be assuming that responsibility this year.

CCD has decided to update their baseline condition survey across their entire road network using automated data collection technics that are provided by various vendors. This task will consist of data collection of all arterial, collector and local roadways in Denver. Data to be collected includes surface distresses, roughness, and rutting; the estimated quantity of data collection is 2550 miles. Generally, two-lane arterial and collector roadways will be surveyed with a single pass, and four-lane roads will be surveyed with one pass in each direction. Local roads will be surveyed in a single direction. Project management of the data collection will be the responsibility of CCD.

As part of the data collection services, Deighton will provide a summary of the required pavement data and prepare an empty “collect” file for use by the vendor to return the collected and processed condition.

Deighton will review a sample output from the data collection vendor to confirm the format, location referencing and units of measure. When the complete network data is received, the data will be vetted for completeness and a report to CCD will be prepared for their comment and action. Finally, Deighton will load the processed condition data into dTIMS so that it is ready for the next analysis.

Deighton advises CCD to retain a percentage of the data collection contract amount until final acceptance of the condition data is issued by Deighton.

dTIMS BI Connector

The dTIMS BI Connector is a tool serves as a bridge between your dTIMS database and MS Power BI so that you can create supportive BI reports using your dTIMS data.

This task will accomplish the deployment of the dTIMS BI Connector and relevant documentation for its use.



Annual Software Maintenance

Included in this line item is an annual fee to cover support of the users of the CCD dTIMS software and the maintenance of the dTIMS software licenses owned by CCD. The System Training task covers general system training that is intended to introduce and familiarize CCD staff with new features and functionality that is made available through maintenance enhancements made to the software.

Web Hosting

DAL is providing hosting services for the CCD dTIMS platform and all related databases. The hosting is provided by a third party that has facilities within the United States and can provide the required performance, security and backup services.

The cost of these services did not increase over last year as we secured a constant rate over a contract period with the provider.

Cost Estimate

The following is a cost estimate for the tasks described above.

We estimate that \$358,791.80 is required to deliver these services.

2020 Tasks	Estimated Cost
Alley Analysis	\$25,850.00
Demonstration	\$21,309.20
Curb Ramp App Modifications	\$38,208.50
Import Completed, Committed and Bond Work	\$43,450.00
Data Collection and Analysis	\$100,650.00
dTIMS BI Connector Tool	\$23,552.10
Annual Support and Software Maintenance	\$88,800.00
Annual Web hosting	\$16,972.00
2020 Subtotal	\$358,791.80
Less 2019 Funds	\$129,093.00
New Funding Required	\$229,698.80

Taking into consideration the 2019 funds, a balance of \$229,698.80 will need to be requested.

Schedule

The work described in this proposal is proposed to be accomplished in the 2020 fiscal year commencing when a notice to proceed is received.