

SECOND AMENDATORY AGREEMENT

THIS SECOND AMENDATORY AGREEMENT is made 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, L1N 4H6, Ontario, Canada, (the “Consultant”), jointly “the parties”.

RECITALS:

WHEREAS, the Parties entered into an agreement dated April 20, 2016 and an Amendatory Agreement dated April 27, 2017 to provide continued refinement and enhancement of the CCD Transportation Asset Management system (“Agreement”); and

WHEREAS, the Parties desire to amend the Agreement to add to the scope of work, extend the term and increase compensation to the Consultant.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and obligations herein set forth, the Parties agree as follows:

1. All references to “**Exhibit A and Exhibit A-1**” in the existing Agreement shall be amended to read “**Exhibit A, Exhibit A-1 and Exhibit A-2.**” The Scope of Work marked as **Exhibit A-2** 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 January 1, 2016 and will expire on December 31, 2018 (the “**Term**”).”

3. Article 4 of the Agreement entitled “**COMPENSATION AND PAYMENT**” subsection (a) of the Agreement entitled “**Fee**” is amended to read as follows:

“4. **COMPENSATION AND PAYMENT:**

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 THREE HUNDRED FORTY FIVE THOUSAND FOUR HUNDRED SIXTY DOLLARS AND NO CENTS (\$1,345,460.00.00)** for fees. Amounts billed may not exceed the rates set forth in **Exhibit A.**”

4. Article 4 of the Agreement entitled “**COMPENSATION AND PAYMENT**” subsection (**d-1**) of the Agreement entitled “**Maximum Contract Amount**” is amended to read as follows:

“4. **COMPENSATION AND PAYMENT:**

d. **Maximum Contract Amount**

(1) Notwithstanding any other provision of the Agreement, the City’s maximum payment obligation will not exceed **ONE MILLION THREE HUNDRED FORTY FIVE THOUSAND FOUR HUNDRED SIXTY DOLLARS AND NO CENTS (\$1,345,460.00.00)** (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. Except as herein amended, the Agreement is affirmed and ratified in each and every particular.

[SIGNATURE PAGES FOLLOW]

Contract Control Number:

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:

By _____

By _____

By _____



Contract Control Number: PWADM-201627262-02

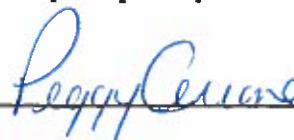
Contractor Name: DEIGHTON ASSOCIATES LIMITED

By:  P. ENEG

Name: ROBERT PIANE P. ENG.
(please print)

Title: PRESIDENT
(please print)

ATTEST: [if required]

By: 

Name: Peggy Cerrone
(please print)

Title: Financial Administrator
(please print)



City and County of Denver

Transportation Asset Management 2018 Work Proposal

Prepared by: Deighton Associates Limited

Date: 2017-12-04

Table of Contents

| | |
|--|---|
| Introduction..... | 3 |
| Tasks in this Proposal..... | 3 |
| CCD Alley Analysis | 4 |
| dTIMS BI Implementation | 4 |
| PMS Analysis Enhancements and Validation | 5 |
| Curb Ramp MEF Form | 6 |
| Web Hosting..... | 7 |
| Cost Estimate..... | 7 |
| Schedule | 8 |

CCD Transportation Asset Management 2018 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 Public Works, Street Maintenance 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. CCD Alley Analysis
2. dTIMS BI Implementation
3. PMS Analysis Enhancements and Validation
4. dTIMS Training
5. Mobile Hardware Configuration
6. dTIMS OM for Crack Sealing
7. Curb Ramp Maximum Extent Feasible (MEF) Form
8. Web Hosting
9. Annual Software Support and Maintenance

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.

CCD Alley Analysis

A recent contract successfully delivered a mobile alley data collection application to CCD. The application was used by CCD inspectors to collect inventory and distress data on allies that are managed by CCD. This task will enable DAL to work with CCD to design, configure and execute an alley analysis with in dTIMS.

The alley analysis will be designed, in conjunction with CCD staff, to use the data that is collected by CCD inspectors using the dTIMS mobile application deployed in the 2017 contract. The analysis design documents will be forwarded to CCD for their comment prior to the commencement of the development of the dTIMS analysis parameters.

The deliverable of this task will be a fully configured dTIMS BA alley analysis that will generate a multi-year, optimized set of alley rehabilitation recommendations.

dTIMS BI Implementation

dTIMS Business Intelligence (BI) leverages an agencies investment in dTIMS by providing Key Performance Indicators (KPIs) in a dashboard format that provides quick, actionable insights into their asset management data.

dTIMS BI allows agencies to quickly realize the business value of their data and expands an agencies current dTIMS solution to bring insight across all assets, in real-time.

This task will have DAL design a dTIMS BI implementation that will utilize data from the Pavement, Curb Ramp and Alley implementations in dTIMS BA and dTIMS OM. CCD will play a vital role in the design of the dTIMS BI by participating in a design workshop that will ensure that the resulting dashboard will be relevant to CCD.

Following the design workshop, DAL will design the dTIMS BI dashboard and submit the design documents to CCD for comment and refinement. Once the design is finalized, the configuration of dTIMS BI will commence. The deliverable of this task will be a fully deployed, Web based dTIMS BI dashboard that will include tabs for Pavements, Curb Ramps and Allies. An example of a dTIMS BI dashboard developed for an existing client is shown below.



PMS Analysis Enhancements and Validation

The two areas where CCD has asked that DAL review the dTIMS BA pavement analysis includes the addition of a Crack Sealing treatment and the modification of the current Concrete street analysis.

Crack Seal

The current dTIMS BA pavement setup does not have a Crack Seal treatment. CCD would like the analysis to be enhanced by adding a Crack Seal treatment, with all the related analysis parameters, so that the benefit

of the Crack Sealing program that is being implemented can be included in the dTIMS analysis.

CCD also wants these generated Crack Seals to be the basis for future Crack Seal work in the field. For the most part, CCD crack sealing is triggered based on the time from the last major treatment.

Concrete Streets

Concrete streets are considered in the current dTIMS BA analysis but CCD has asked DAL to do a verification of the deterioration curves, resets and the treatments that are triggered by the analysis.

The results of the review and verification will be summarized and presented to CCD comment before any modifications are made to the dTIMS BA configuration for concrete paved streets.

The deliverable of this task will be an enhanced CCD pavement management system that will see the inclusion of an asphalt crack sealing treatment and a revised set of concrete pavement analysis parameters.

Curb Ramp MEF Form

CCD has asked DAL to include a Maximum Extent Feasible (MEF) form as part of the mobile Curb Ramp application. The MEF form will contain a summary of the data on the Curb Ramp that has been designated as MEF. The form will contain any photos that were taken and any inspection comments. CCD will be consulted for their input on the content of the MEF form before any development work in started.

The MEF form will be generated automatically by dTIMS OM and be emailed to a designated supervisor for their review and sign off.

The sign off on the MEF Curb Ramp will close the Inspection activity and remove the MEF Curb ramp from future dTIMS analysis.

The deliverable of this task will be the addition of an MEF form within the dTIMS OM application with a related workflow which will automatically forward the forms to the supervisor that is responsible for the sign off on the MEF form.

Web Hosting

DAL has been requested to provide an estimate for the annual hosting of the dTIMS platform and all related databases. The hosting will be 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 the hosting service is provided as a contingent amount that will only be requested if the hosting services are provided to expedite the deployment of the CCD dTIMS platform and databases.

Cost Estimate

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

We estimate that \$411,867.00 is required to deliver these services.

| Task | Estimated Cost |
|--|-----------------------|
| CCD Alley Analysis | \$80,944.00 |
| dTIMS BI Implementation | \$118,723.00 |
| PMS Analysis Enhancements and Validation | \$82,500.00 |
| Curb Ramp MEF Form | \$46,200.00 |
| Annual Software Support and Maintenance | \$83,500.00 |
| Total | \$411,867.00 |
| Annual Web Hosting (Contingency) | \$16,972.00 |

Schedule

The work described in this proposal will be accomplished in the 2018 fiscal year commencing when a notice to proceed is received.