REVIVAL AND SECOND AMENDATORY AGREEMENT

THIS REVIVAL AND SECOND AMENDATORY AGREEMENT is made between the **City and County of Denver** (the "City"), a municipal corporation of the State of Colorado, and **DEIGHTON ASSOCIATES LTD.,** a foreign corporation doing business at 11 Stanley Court, Unit 1, Whitby, Ontario, Canada L1N 8P9 (the "Consultant"), jointly "the parties".

RECITALS:

WHEREAS, the City and the Consultant entered into an Agreement dated March 23, 2010, and an Amendatory Agreement dated April 4, 2012 (the "Agreement");

WHEREAS, the Agreement expired by its terms on December 31, 2012;

WHEREAS, the City and the Consultant desire to amend the Agreement to revive the Agreement, increase funds and extend the term of the Agreement;

NOW THEREFORE, in consideration of the premises, and the mutual covenants and obligations herein contained, the parties agree as follows:

1. The Agreement is hereby revived.

2. All references to "…Exhibits A and A-1…" in the Agreement shall be amended to read: "…Exhibits A, A-1, and A-2.

3. Paragraph 3 entitled **"Term",** of the Agreement, is hereby deleted in its entirety and replaced with:

> **"3. Term.** The term of this Agreement commenced on December 14, 2010 and shall expire on December 31, 2013, unless sooner terminated, upon final completion of the Project."

4. In Section 4 entitled "**COMPENSATION AND PAYMENT,"** Paragraphs a and d(1) of the Agreement, entitled "**Fee**" and "**Maximum Contract Amount:"** are hereby amended to read in their entirety 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 **EIGHT HUNDRED THREE THOUSAND FOUR HUNDRED TWO AND 00/100 DOLLARS ($803,402.00)**. Amounts billed may not exceed the budget set forth in Exhibits A, A-1, and A-2."

"d(1) <u>Maximum Contract Amount</u>.
(a) Notwithstanding any other provision of the Agreement, the City's maximum payment obligation will not exceed **EIGHT HUNDRED THREE THOUSAND FOUR HUNDRED TWO DOLLARS AND 00/100 ($803,402.00)** (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 Exhibits A, A-1, and A-2. Any services performed beyond those in Exhibits A, A-1, and A-2 are performed at Consultant's risk and without authorization under the Agreement."

5. As herein amended, the Agreement is revived, reaffirmed and ratified in each and every particular.

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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-CE01113-02

Contractor Name: DEIGHTON ASSOCIATES LIMITED

By: Vicki Deighton

Name: Vicki Deighton
(please print)

Title: CEO
(please print)

ATTEST: [if required]

By: Peggy Cerrone

Name: Peggy Cerrone
(please print)

Title: Financial Administrator
(please print)

EXHIBIT A-2

2011-020 Denver 2013 Program and Maintenance Management System Pilot Final Rev.

City and County of Denver, Department of Public Works, Street Maintenance Division

Prepared by: Dan Roberts
Dan.roberts@deighton.com
Thursday, November 08, 2012

Deighton Associates Limited
4500 Cherry Creek South Drive, Suite 1010, Denver, CO 80246
Tel: (303) 758-1792
www.deighton.com

Proposal

Deighton Associates is pleased to provide this Scope of Work for Asset Management services for Denver Street Maintenance. This proposal includes, as part of the work to be performed, a pilot project that will provide Street Maintenance a functional and integrated maintenance management solution using the Major Machine Patching, Pothole Patching, and Paving Work Programs as test cases on which to build out the full maintenance management solution for the Division. In addition, this scope includes running the 2013 analysis and generating the 6 year plan, conversion and upgrade of Denver Street Maintenance's existing condition data collection application to the dTIMS Inspections Module.

In addition, the proposal includes time for cleanup and archive of the PMS database, creation of new workflows to automate additional processes, creation of new SQL Reporting Services standard reports, and implementation of the Deighton external file functionality to simplify updates to annual costs and other parameters.

Scope of Work

New tasks covered under this scope consist of Tasks 1 through 6, as described below.

Task 1: 2013 Analysis and Six Year Plan

Task 1 consists of the completion of the pavement management analysis for 2013, recommendations for the 2013 work program, and preparation of a new 6 year plan for Denver. Denver staff will be responsible for updating construction histories and applying condition resets; Deighton will review and update changes to the street network, along with treatment costs and triggers. The analysis configuration will be modified to allow selection of the primary treatment in a local sector and application of that treatment to all of the segments in that sector to match the current business practice used by Street Maintenance. A final report will be generated and presented to Street Maintenance.

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Task 2: Pothole Patching Work Program

Denver Public Works Street Maintenance Division is responsible for the maintenance of 1,880 centerline miles of streets and 5,135 alleys in the City and County of Denver. To support this mission, Street Maintenance has a Pothole Patching work program that repairs over 100,000 potholes per year. Approximately 3% of these repairs are performed as a result of service requests by citizens and customers; 97% of the work is performed as pro-active patching.

Street Maintenance currently uses a custom-built maintenance management solution using a Microsoft Access database. This database is over 10 years old and is currently not supported by the City's Technology Services department. The City and County of Denver uses Oracle's CRM solution as its enterprise solution for service requests; this system is not integrated with the Street Maintenance Microsoft Access database, so staff must re-enter data from the CRM into the Street Maintenance database in order to manage the service requests.

Street Maintenance uses dTIMS CT for infrastructure asset management and work program planning. The current maintenance management solution used by Street Maintenance is not integrated with dTIMS CT, so work programs would have to be manually re-entered into the maintenance management solution in order to show up on a work order request list. Because of the amount of work involved in performing this manual re-entry, the work is instead managed separately by staff and the maintenance management database is not used to manage planned work.

Task 2 consists of the implementation of work orders for the Pothole Patching Program. A summary of the how the system is proposed to work is as follows:

Step 1: (dTIMS Work Order Module). Each morning, the supervisor will review his resources and note availability. Trucks are assigned to districts as primary and secondary; staff is assigned to trucks and can change assignment. The application should retain the previous day's assignments until changed by the supervisor.

Step 2: (dTIMS Work Order Module). The top priority Work Orders are those that come from citizen complaints via Denver's 311 Customer Service Center. (Making these the top priority reduces Denver's exposure to claims filed for damage to vehicles caused by potholes). Denver uses PeopleSoft / Oracle's CRM to manage service requests generated in the Customer Service Center. Initially, Street Maintenance administrative staff will manually re-enter service requests as work orders in dTIMS;

eventually, a web service will be created to automate this process. Assignment of work orders will be automated based on geographic location; Denver's Pothole Patching program uses 6 districts and typically these reactive work orders are assigned to the primary truck for the district until the "To Do" list for that truck is full, and then work orders are assigned to the secondary truck. It is important that point locations (based on address) for potholes be associated with the applicable inventory street segment.

Step 3: (dTIMS Work Order Module). Most of the work performed by the pothole repair program is assigned by the supervisor. The application will allow the supervisor to select local sectors and arterial/collector "supersegments" to assign to trucks. The supervisor will be able to sort and promote/demote the sections using a "move up / move down" type function. Eventually, pothole repair work may be generated in dTIMS CT using condition data.

Step 4: (dTIMS Work Order Module). Staff will access the sorted work orders with basic information about the pothole work order including location, size, etc. When the crew is ready to begin work on a work order they will select a status of "in progress". Upon completion the crew will provide date of completion, area completed, tons of material used, and total hours of work on the repair. Once the form is filled out, the crew will select "complete" on the form. This will initiate an automatic workflow to reset the condition index for the segment adjacent to the location, and store the data on cost of repairs for that segment. (Eventually, this will be used in the budget analysis in dTIMS CT).

Task 2 includes preparation of 3 basic reports and a one to two page "User Guide" in pdf format.

Task 3: Major Machine Patching Inspections and Work Orders

Deighton recently completed the development of a major machine patching program in dTIMs for Denver Street Maintenance. A draft construction program is the resultant product.

Task 3 consists of the implementation of the dTIMS Inspections and Work Orders modules, configured for the Major Machine Patching Program. A summary of the how the system is proposed to work is as follows:

Step 1: **(dTIMS Inspection Module).** Inspection requests will be generated from the optimized construction program. Assignment will be simplified by assigning all inspections to single inspector. No prioritization is required but data should be sorted by neighborhood sector, street name, and from name.

Step 2: **(dTIMS Inspection Module).** Inspections will be completed using a simple form that includes basic information – location and PCI. The inspector will have the option to accept or defer the segment for work in the current year.

Step 3: **(dTIMS Work Order Module).** Once the inspections are complete, the work program will be finalized and work order requests will be generated. The supervisor will be able to sort and promote/demote the sections using a "move up / move down" type function.

Step 4: **(dTIMS Work Order Module).** The supervisor will access the sorted work orders using a form with basic information about the work order including location, length, width, etc. When the supervisor is ready to begin work on a work order he will select a status of "in progress". Upon completion the supervisor will provide date of completion, area completed, tons of material used, and total hours of work on the section. Once the form is filled out, the supervisor will select "complete" on the form. This will initiate an automatic workflow to reset the PCI, individual conditions indices, year of last work, and type of last work.

Task 3 includes preparation of 3 basic reports and a one to two page "User Guide" in pdf format.

Task 4: Paving Program Inspections and Work Orders

Task 4 consists of the implementation of inspections and work orders for the Various Paving Programs. This will build upon the work performed in Task 3 but will incorporate multiple supervisors, multiple roles, and multiple work programs. A summary of the how the system is proposed to work is as follows:

Step 1: **(dTIMS Inspection Module).** Inspection requests will be generated from the optimized construction programs. Assignment will be simplified by assigning all inspections to single inspector. No prioritization is required but data should be sorted by neighborhood sector, street name, and from name.

Step 2: **(dTIMS Inspection Module).** Inspections will be completed using a simple form that includes basic information – location and PCI. The inspector will have the option to accept or defer the segment for work in the current year.

Step 3: **(dTIMS Work Order Module).** Once the inspections are complete, the work program will be finalized and work order requests will be generated. Supervisors will be able to sort and promote/demote the sections using a "move up / move down" type function.

Step 4: **(dTIMS Work Order Module).** Supervisors will access the sorted work orders using a form with basic information about the work order including location, length, width, etc. When the supervisor is ready to begin work on a work order he will select a status of "in progress". Upon completion the supervisor will provide date of completion, area completed, tons of material used, and total hours of work on the section. Once the form is filled out, the supervisor will select "complete" on the form. This will initiate an automatic workflow to reset the PCI, individual conditions indices, year of last work, and type of last work.

Task 4 includes expansion of the 3 basic reports designed in Task 1, and a one to two page "User Guide" in pdf format.

Task 5: Condition Data Collection Application

Task 5 consists of the conversion of Denver's existing Condition Data Collection application to the new dTIMS Inspections module. By performing this conversion, data will now be automatically updated during the data collection process, reducing the risk of lost data and errors during synchronization. Use of the new module will also standardize platforms being used in the agency, and will save time during the data collection process by eliminating the need to manually synchronize data in the office at the end of each work day.

Task 6: 2013 PMS Support Activities

Task 6 consists of five primary tasks:

1. Database cleanup and archive: removal and archival of unused parameters and expressions, editing of existing objects to simplify documentation, and data validation and updating.
2. Implementation of dTIMS External Functions to simplify annual changes to costs and other parameters. This includes making modifications to expressions in order to use the external lookup function.
3. Edits to existing workflows to include resets for concrete repairs and major machine patching, and creation of new workflows to automate processes used by Street Maintenance.
4. Creation of standard reports using SQL Reporting Services, to streamline generation of periodic reports.
5. Two user conference registrations for the 2013 conference.

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Pricing

The cost chart on the following page summarizes the resources required for each of the tasks.

Task	Description	Duration		Consulting	Travel	Cost
		Office	Site			
1	**2013 Analysis and Updated 6 Year Plan**					
1.1	Update Construction History			$ -		$ -
1.2	Apply Condition Resets			$ -		$ -
1.3	Review and Update Network Changes	4		$ 6,720.00		$ 6,720.00
1.4	Review and Update Treatment Costs and Triggers	3		$ 5,040.00		$ 5,040.00
1.5	Modify Sector Analysis to select primary treatment	4		$ 6,720.00		$ 6,720.00
1.6	Run Analysis	6		$ 10,080.00		$ 10,080.00
1.7	Generate Final Report	5		$ 8,400.00		$ 8,400.00
1.8	Present Recommendations	1		$ 1,680.00		$ 1,680.00
					Subtotal: Task 1	**$ 38,640.00**
2	**Pothole Patching Program**					
2.1	System Configuration	13		$ 21,840.00	$ 1,950.00	$ 23,790.00
2.2	Report Design	2		$ 3,360.00	$ -	$ 3,360.00
2.3	User Guides	1		$ 1,680.00	$ -	$ 1,680.00
2.4	System Delivery and Installation		1	$ 1,680.00	$ -	$ 1,680.00
2.5	On-Site Launch Support		2	$ 3,360.00	$ -	$ 3,360.00
					Subtotal: Task 2	**$ 33,870.00**
3	**Major Machine Patching Work Orders and Inspections**					
3.1	System Configuration	10		$ 16,800.00	$ -	$ 16,800.00
3.2	Report Design	2		$ 3,360.00	$ -	$ 3,360.00
3.3	User Guides	1		$ 1,680.00	$ -	$ 1,680.00
3.4	System Delivery and Installation		1	$ 1,680.00	$ -	$ 1,680.00
3.5	On-Site Launch Support		0	$ -	$ -	$ -
					Subtotal: Task 3	**$ 23,520.00**
4	**Paving Program Work Orders and Inspections**					
4.1	System Configuration	5		$ 8,400.00	$ -	$ 8,400.00
4.2	Report Design	1		$ 1,680.00	$ -	$ 1,680.00
4.3	User Guides	1		$ 1,680.00	$ -	$ 1,680.00
4.4	System Delivery and Installation		1	$ 1,680.00	$ -	$ 1,680.00
4.5	On-Site Launch Support		0	$ -	$ -	$ -
					Subtotal: Task 4	**$ 13,440.00**
5	**Conversion of Data Collection Application to dTIMS Inspections Module**					
5.1	System Configuration	10		$ 16,800.00	$ -	$ 16,800.00
5.2	Report Design	2		$ 3,360.00	$ -	$ 3,360.00
5.3	User Guides	1		$ 1,680.00	$ -	$ 1,680.00
5.4	System Delivery and Installation		1	$ 1,680.00	$ -	$ 1,680.00
5.5	On-Site Launch Support		0	$ -	$ -	$ -
					Subtotal: Task 5	**$ 23,520.00**
6	**2013 PMS Support Activities**					
6.1	Database Cleanup, Archive	15		$ 25,200.00	$ -	$ 25,200.00
6.2	Full implementation of External Functions	5		$ 8,400.00	$ -	$ 8,400.00
6.3	dTIMS workflow Updates and Added workflows	5		$ 8,400.00	$ -	$ 8,400.00
6.4	Custom SQL Report Development	13		$ 22,610.00	$ -	$ 22,610.00
6.5	User Conference Registration (2)			$ 2,400.00	$ -	$ 2,400.00
					Subtotal: Task 6	**$ 67,010.00**
	TOTALS: Tasks 1, 2, 3, 4, 5 and 6					**$ 200,000.00**

Note that software maintenance and licensing fees (valued at $69,000 for the Inspections Module, Work Order Module, and 25 named users) will be waived for the first 6 Months, including implementation, of the pilot.

Schedule

Work on this proposal will begin as follows:

- All work will be completed within 12 months of receipt of the final signed contract amendment authorizing the work.

Please review the quote and contact us if you have any questions.

Sincerely,

Daniel R. Roberts, P.E.