

AMNEDATORY AGREEMENT

THIS 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 "Design Consultant"), jointly "the parties".

RECITALS:

WHEREAS, the City and the Design Consultant entered into a contract March 23, 2010, (the "Agreement");

WHEREAS, the City and the Design Consultant desire to amend the Agreement to 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. All references to "...Exhibit A and A-1..." in the Existing Agreement shall be amended to read: "...Exhibit A and A-1.
2. 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, 2012, unless sooner terminated, upon final completion of the Project."
3. In Section 4 entitled "**COMPENSATION AND PAYMENT,**" Paragraph d(1) of the Agreement, entitled "**Maximum Contract Amount:**" is hereby amended to read in its entirety as follows:

"d(1) Maximum Contract Amount.

(a) It is understood and agreed by the parties hereto that payment or reimbursement of all kinds to the Design Consultant, for all Work performed under this Agreement, shall not exceed a maximum of **SIX HUNDRED THREE THOUSAND FOUR HUNDRED TWO DOLLARS AND 00/100 (\$603,402.00)**. In no event shall the maximum payment to the Design Consultant, for all work and services performed throughout the entire term of this Agreement exceed the contract maximum amount set forth above."

4. Paragraph 34 entitled “**ELECTRONIC SIGNATURES AND ELECTRONIC RECORDS**,” is hereby added to the Contract to read as follows:

34. ELECTRONIC SIGNATURES AND ELECTRONIC RECORDS:

Design Consultant consents to the use of electronic signatures by the City. The Agreement, and any other documents requiring a signature hereunder, may be signed electronically by the City in the manner specified by the City. The Parties agree not to deny the legal effect or enforceability of the Agreement solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of the Agreement in the form of an electronic record, or a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature, on the ground that it is an electronic record or electronic signature or that it is not in its original form or is not an original.”

3. As herein amended, the Agreement is affirmed 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-CE01113-01

Contractor Name: DEIGHTON ASSOCIATES LIMITED

By: Vicki Deighton

Name: Vicki Deighton
(please print)

Title: President / CEO
(please print)

ATTEST: [if required]

By: Daniel R. Roberts

Name: Daniel R. Roberts
(please print)

Title: U.S. Operations Manager
(please print)





2011 - 010 Denver PMS 2012

City and County of Denver



Proposal

This proposal is presented in two parts. The first part summarizes the work that will be done under the remaining funding in the current contract. The second part propose the work that will be done under the 2012 proposed funding.

Current Contract

The current contract has approximately \$45,296.00 left in the contract. The bulk of the funding will be dedicated to the annual software maintenance and client support. The remaining funds is proposed to be dedicated to the creation of additional workflows to be implemented in dTIMS wf.

The chart below specifies the distribution of the remaining funding.

Task	Description	Duration		Consulting	Travel	Cost
		Office	Site			
1	Annual Software Maintenance					\$ 31,400.00
2	Annual Client Support					\$ 1,750.00
3	dTIMS wf Configuration and Testing	4	1	\$ 10,080.00	\$ 1,860.00	\$ 11,940.00
Totals						\$ 45,090.00

Proposed 2012 Contract

The funding for the proposed 2012 contract is \$150,000.00. Discussions with the City and County of Denver has identified the following areas of interest regarding the work to be accomplished with the proposed funding.

- Major Machine Patching
- Alley Analysis
- Neighborhood Concrete Analysis

The proposed cost breakdown will also summarize general training and annual support and maintenance costs.



Major Machine Patching

Major Machine Patching (MMP) is an treatment type that Denver does in Neighborhoods that have a good RSL rating but have a few bad segments. The programming of MMP is currently a manual process. The process involves a spreadsheet that is populated from dTIMS CT where neighborhoods that will not be worked on for a number of years because of their high average condition and have some roads that are in bad shape can be identified. Manual programming for the MMP work crew is then performed.

A sample of the Excel Workbook used is provided below.

DTIMS_ID	2010 PCI	Condition	dTims Yr	Treatment	0-50	50-60	60-70	70-80	80-100	Count	=100	
CBD002	84	Excellent	2027		0	1	4	22	51	78	11	
CBD003	87	Excellent	2031		0	0	0	11	32	43	3	
CBD004	73	Good	2015	Out year MMP	1	6	10	7	15	39	8	

The automation of this process within dTIMS CT analysis will be investigated by triggering MMP based on the neighborhood treatment year recommended by dTIMS CT, average condition in the neighborhood and the standard deviation of the individual road conditions. The philosophy being that the bigger the standard deviation the higher the potential to find bad streets that are ignored because of the high average condition in the neighborhood.

The result will be an automated set of candidate MMP projects that will be generated by dTIMS CT for a given MMP Budget Category. The impact of these treatments on the future network condition will then be quantified in dTIMS CT.

Alley Analysis

Denver's alley assets are comprised of 20% composite , 25% hot mixed asphalt and 55% concrete. The management of the alleys in dTIMS CT will involve the configuration of a



simple set of analysis parameters that can be supported by existing alley data. The analysis parameters will consist of:

- condition indexes
- performance expressions
- treatments
- decision trees
- budget scenarios
- objective function

These parameters will be developed in conjunction with Denver staff and configured in dTIMS CT to produce a recommended alley program.

Neighborhood Concrete Analysis

The analysis of concrete elements in dTIMS CT will be accomplished using the same methodology that was implemented in the stand alone Excel concrete analysis tool that was developed in conjunction with Denver staff. These parameters will be implemented within dTIMS CT to give a more accurate cost for the concrete work that will need to be done in the neighborhoods that are recommended for work by dTIMS CT.

The concrete elements to be considered will be:

- curbs
- sidewalk ramps
- drain pans
- driveway aprons
- alley aprons

The following chart provides the details regarding the tasks and cost to address the above noted areas of interest in 2012.



Task	Description	Duration		Consulting	Travel	Cost
		Office	Site			
1	Major Machine Patching					
1.1	Review Local Histogram Worksheet	1		\$ 1,680.00	\$ -	\$ 1,680.00
1.2	Develop trigger theory	3		\$ 5,040.00	\$ -	\$ 5,040.00
1.3	Modify dTIMS CT setup	2		\$ 3,360.00	\$ -	\$ 3,360.00
1.4	Implement trigger methodology	3		\$ 5,040.00	\$ -	\$ 5,040.00
1.5	Test analysis	1		\$ 1,680.00	\$ -	\$ 1,680.00
1.6	Document	2		\$ 3,360.00	\$ -	\$ 3,360.00
1.7	Deliver and Install		3	\$ 6,720.00	\$2,520.00	\$ 9,240.00
2	Alley Analysis					
2.1	Develop Alley Analysis Methodology		3	\$ 6,720.00	\$2,520.00	\$ 9,240.00
2.2	Develop Analysis Parameters	8		\$ 13,440.00	\$ -	\$ 13,440.00
2.3	Modify dTIMS CT setup	2		\$ 3,360.00	\$ -	\$ 3,360.00
2.4	Implement Alley Analysis Parameters	3		\$ 5,040.00	\$ -	\$ 5,040.00
2.5	Test Analysis	1		\$ 1,680.00	\$ -	\$ 1,680.00
2.6	Alley Analysis and Plan Development	4		\$ 6,720.00	\$ -	\$ 6,720.00
2.7	Documentation	2		\$ 3,360.00	\$ -	\$ 3,360.00
3	Neighbourhood Concrete Analysis					
3.1	Develop Concrete Analysis Methodology		2	\$ 5,040.00	\$2,090.00	\$ 7,130.00
3.2	Develop Analysis Parameters	2		\$ 3,360.00	\$ -	\$ 3,360.00
3.3	Modify dTIMS CT setup	2		\$ 3,360.00	\$ -	\$ 3,360.00
3.4	Implement Concrete Analysis Parameters	4		\$ 6,720.00	\$ -	\$ 6,720.00
3.5	Test Analysis	1		\$ 1,680.00	\$ -	\$ 1,680.00
3.6	Concrete Analysis and Plan Development	4		\$ 6,720.00	\$ -	\$ 6,720.00
3.7	Documentation	2		\$ 3,360.00	\$ -	\$ 3,360.00
3.8	Deliver and Install		2	\$ 5,040.00	\$2,190.00	\$ 7,230.00
4	Maintenance, Support and Training					
4.1	Software Maintenance					\$ 31,400.00
4.2	User Support					\$ 1,750.00
4.3	Training	3		\$ 5,040.00	\$ -	\$ 5,040.00
Total						\$ 149,990.00

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

Sincerely,

Robert Piane, P. Eng