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County of St. Paul
5015 - 49 Avenue
St. Paul, Alberta
T0A 3A4

VIA EMAIL: skitz@county.stpaul.ab.ca

Attention: Sheila Kitz, Chief Administrative Officer

RE: Scope Change to County of St. Paul Water Treatment Plant Upgrades/Water Transmission Line, Ashmont - Lottie Lake Study

Thank you for the opportunity to present the following scope changes for the County of St. Paul Water Treatment Plant Upgrades and Water Transmission Line project. The work is in addition to our original scope and work program dated June 7, 2011. We believe that this work added value to the process and helped move the project towards the ultimate objective of providing safe, reliable, and high quality drinking water to the communities of Ashmont and Lottie Lake. We believe this work formed a bridge between the original scope and our current assignment (the detailed design stage).

We would respectfully request your approval for the following scope changes. The work and associated fees are described below:

1.0 DESCRIPTION OF WORK

1.1 Ground Water Source Evaluation – $5,000

These efforts centered on recommendations made by MLM to further evaluate the well capacity should higher demands on the source be contemplated and/or required. The water demands required to service Ashmont and Lottie Lake are higher than the original authorized well production. Therefore, a process to first explore the feasibility of increasing the demand on the wells and then move into increasing the license volume was initiated. Thurber completed the bulk of the exploration work while our efforts centered on process and scope definition for Thurber, coordination, communication, engagement, and managing the process.

1.2 Water Transmission Line Analysis with 150 mm diameter pipe - $2,000

Further to the analysis on the current projected direction of flow (from Ashmont to Lottie Lake), we analyzed a future scenario whereby water may be sourced from the Town of

St. Paul and flow from Lottie Lake, as the first point of service, to Ashmont and then on to Mallaig. This analysis resulted in the requirement for a 150 mm diameter pipe which has subsequently been approved by AT (Mike Yakemchuk), endorsed by Council, and is included in the current detailed design process.

1.3 Whole System Considerations and Coordination with Alberta Environment - $8,000

As we worked through the evaluation of the water treatment plant and transmission line, we recognized two significant issues that needed to be addressed, viruses (in terms of water quality and treatment requirements), and residuals (downstream effects and the importance of selecting the treatment process that minimizes/optimizes the residuals generation and handling).

While often overlooked or ignored, treated water residuals play a significant role in the design of the water treatment plants in the context of thinking of the community's infrastructure as a single system. Dealing with the residuals downstream impacts is an important factor in determining the water treatment plant location. The residuals handling issue also plays a significant role in the treatment process selection as certain processes create more residuals than others and a balanced approach needs to be considered.

During the course of our work we evaluated the downstream residuals handling challenge and started to work with Alberta Environment on potential solutions. While the identification of residual options was included in our original scope of work, working through the residuals issue needed to be resolved at a more detailed level in order to make a recommendation on the water treatment plant location and preferred process. We considered multiple options such as evaporation ponds, direct discharge lines to the environment and discharge to the existing sanitary system. We sized the necessary infrastructure and provided a high level cost estimates for all the options. All these options were reviewed with the County, Alberta Environment and Alberta Transportation. We believe that the work completed has provided us with an opportunity to further explore a direct discharge method and potentially save the County hundreds of thousands of dollars in lagoon infrastructure upgrades.

1.4 Moving beyond conceptual design of treatment process - $5,000

Our original scope of work identified a conceptual design scope to address potential treatment processes. Additional work was completed to help move the project along the design process. These activities included coordination with plant (UV) vendors to refine treatment opportunities in the 10 year and 20 year design horizons to ensure that UV

solutions were scalable. We also started to work through the process of blending water to optimize water quality parameters (like hardness). We also coordinated and engaged a specialist consultant to conduct a silt-density index test. The specialist consultant then provided USL the raw data which we interpreted, analyzed, and incorporated into our recommendations for the proposed treatment process.

1.5 Preliminary Evaluation of Water Treatment Plant locations within the hamlet of Ashmont - $3,000

After the technical team and Council endorsed Ashmont as the preferred water treatment plant location, questions arose in terms of 2 potential locations within the community: at or near the existing water treatment plant, and a site located west of the existing water treatment plant near the newly proposed firehall site. We completed some preliminary site layouts and evaluated infrastructure needs for both sites considering the opportunities and constraints. This preliminary assessment was not included in our work program dated June 7, 2011. As you are aware, this task is still in progress. We have included all the future work to complete this task in the Detailed Design and Construction Services work program dated October 20, 2011 and are asking for a scope change for the preliminary work completed to date.

1.6 Change in water demands/scenarios/growth projections - $5,000

After completing and submitting the first draft of the preliminary design report, the technical committee, Council, and Urban systems agreed that the original base projections for water demand, growth projections, and servicing scenarios (future connection to Mallaig, and/or water supply from St. Paul) needed to be modified. This was in part due to a better understanding of the source limitations (capacity) and experiences with other municipalities with regards to implementing conservation methods (higher water rates). The alternate/modified projections were then incorporated into the treatment process (further discussions with vendors on new rates/volumes) and the report was updated.

The total amount of the above work is valued at $28,000. We appreciate that this is a significant amount of money and feel that the County has benefitted from our approach of addressing the needs and challenges of the project in a timely fashion and ensuring that the project moves forward at an appropriate pace. We feel that the above work has put us in a position to provide the County with reliable information upon which it can make educated decisions and provide further direction for the project.

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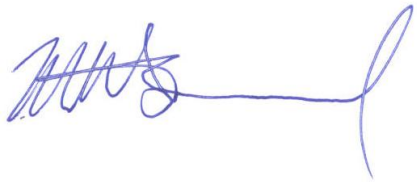
I also acknowledge that scope change requests need to be made in a more timely fashion such that you are not surprised by such requests after budgets have been set and other decisions have been made. Moving forward, I propose that all scope changes should be identified, scoped, and fees assigned within a 30-day time period. This would then provide you and Council the time to evaluate and provide direction as required.

If you have any questions regarding the proposed scope changes and process moving forward, please do not hesitate to contact me at 780-430-4041.

Sincerely,

URBAN SYSTEMS LTD.



Matthew Brassard, P.Eng
Principal

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