

Background

An agreement was negotiated in 1999 between the former City of Sudbury and the Sudbury District Energy Corp (SDE) to supply heating to Tom Davies Square (TDS) and heating and cooling to the Sudbury Community Arena. The 20-year contract expires in November 2019.

As part of the overall district energy concept, significant infrastructure was created to support the transportation of energy (hot water, steam, chilled water) to various buildings in the downtown core. These buildings' heating and cooling energy requirements are supplied by a centralized heating and cooling plant. The Energy Service is delivered in the form of hot and chilled water from centralized facilities. The buildings use hot and chilled water to provide for their space heating, domestic hot water, and cooling requirements. Figure 1 illustrates the buildings in the downtown core currently serviced by SDE.

The City of Greater Sudbury (CGS) currently uses SDE for heating 200 Brady and cooling and heating the Sudbury Community Arena. The original contract for services for TDS and the Sudbury Community Arena provided for a "fixed capacity charge" to assist the service provider in funding capital costs for the infrastructure, and incremental "energy costs" that were calculated based on actual energy consumption.

In addition to the SDE contract expiring, the chillers currently being utilized to provide cooling for TDS are reaching end of useful life and would require significant capital investment to replace. Since the original agreement with SDE. Not renewing the SDE contract would also result in CGS having to further invest in a solution to heat TDS and find a solution to heat and cool the Sudbury Community Arena.

Options and Financial Information

A recent cost/benefit analysis, based on historical costs for heating and cooling, anticipated capital costs to self-generate and estimates from SDE, have been completed to compile options to ensure that CGS has a cost-effective means of heating and cooling the affected facilities moving forward. Additionally, SDE has committed to ensuring that cost of heating and cooling utilizing their system will not exceed the costs that could be anticipated if CGS chose to self-generate heating and cooling.

Considerations for the financial impact of any decision taken regarding the heating and cooling of TDS include several factors. As SDE infrastructure is currently in place for heating and any additional capital costs for cooling would be borne by SDE (and recovered as a "fixed capacity charge"), there is no immediate impact to current or future capital budgets for CGS.

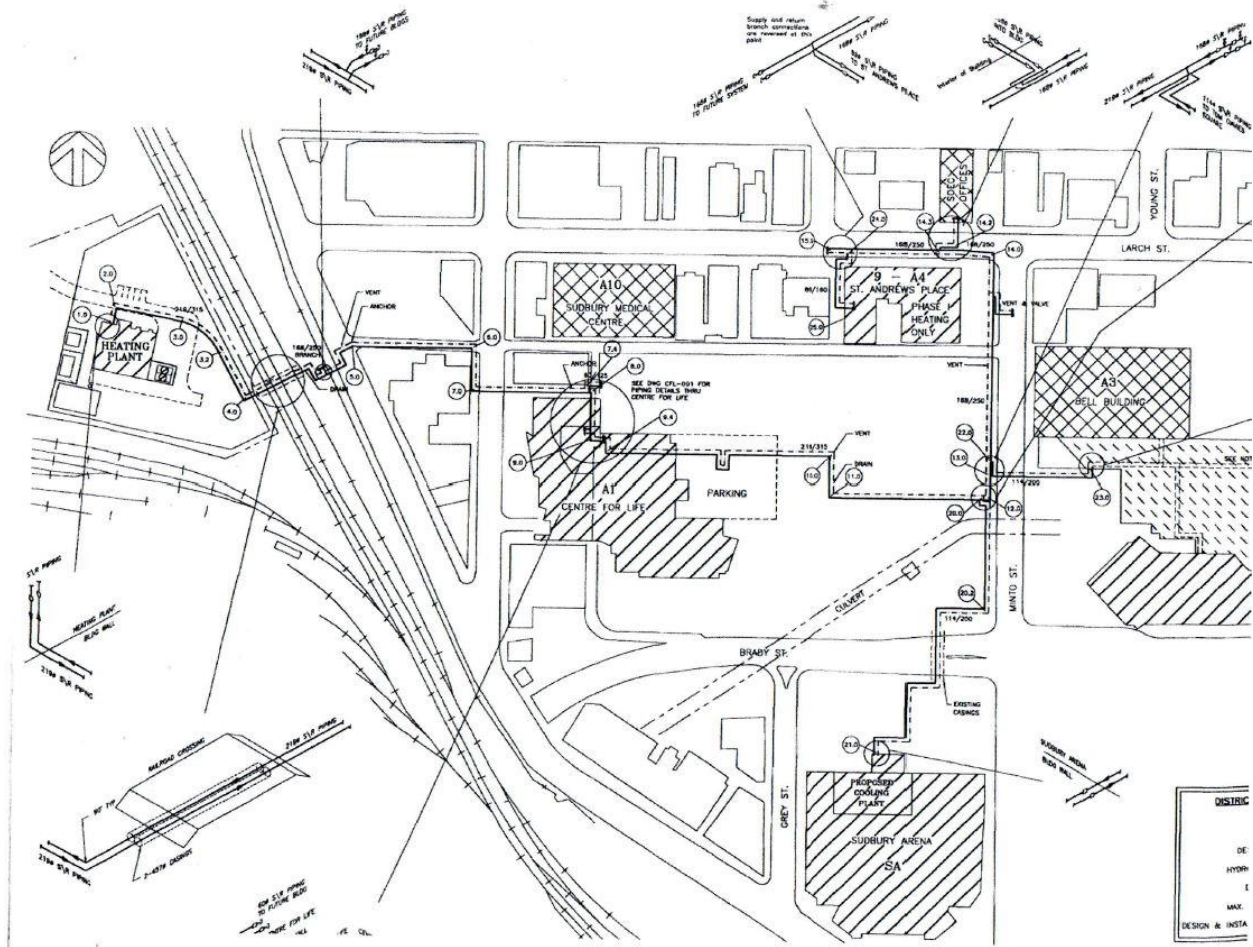


Figure 1: SDE Map – Downtown

A solution that includes self-generating heating and cooling for TDS would require significant capital investment as the current infrastructure does not exist to adequately provide the necessary level of service. Estimates for the initial capital investment for heating are approximately \$977,400. Capital investment for a self-generated cooling solution is estimated to be approximately \$2M. These estimates are for TDS but do not address the requirements of the Sudbury Community Arena, which currently relies on SDE for heating and cooling.

As referenced in Table 1, when comparing the cost of providing heating and cooling using SDE or self-generating heating and cooling, the overall costs are relatively equal on an annual basis, but when a longer term calculation is applied using present value over a 20 year term, there is a significant advantage in maintaining the relationship with SDE. As per "Note 2" in the table below, this longer-term calculation includes the requirement to make approximately \$3M in capital expenditures in 2020.

Table 1: Annual Costs

| | SDEC | Self-Generated | Variance |
|----------------------------------------------------------------------|------------------------|------------------------|-------------------|
| Heating | | | |
| Operating | \$125,700 | \$125,700 | |
| Capital | \$98,300 ¹ | \$67,102 ² | |
| Sub-Total | \$224,000 | \$192,802 | \$31,198 |
| Cooling | | | |
| Operating | \$61,300 | \$61,300 | |
| Capital | \$106,200 ¹ | \$137,306 ² | |
| Sub-Total | \$167,500 | \$198,606 | (\$31,106) |
| TOTAL | \$391,500 | \$391,408 | \$92 |
| Notes: | | | |
| ¹ Annual Fixed Capacity Charge - operating budget expense | | | |
| ² Capital annualized @ 3.23% over 20 years | | | |

Table 2: Present Value - 20 yrs

| | SDEC | Self-Generated | Variance |
|----------------|--------------------|-----------------------|--------------------|
| Heating | \$3,781,799 | \$3,517,782 | \$264,017 |
| Cooling | \$2,831,495 | \$3,755,877 | (\$924,382) |
| TOTAL | \$6,613,294 | \$7,273,659 | (\$660,365) |

A net present value calculation is used as a comparison tool to show the impact of various options for an investment that has differing costs over a period. In the above example the cost avoidance of not having to do a large capital investment in the cooling system shows that the decision to procure heating and cooling provides a lower cost to the City.

Other Considerations

Capital Costs Avoidance

Many competing priorities for capital funding across the organization and partnering with SDE removes the requirement for further capital funding for heating and cooling at TDS and the Sudbury Arena.

Community Impact

An agreement will see a continuance of the long-standing partnership that benefits not only CGS but neighbouring downtown businesses and institutions.

Green Initiatives

An agreement would result in reduced carbon dioxide emissions, resulting in a reduced carbon footprint (reduction of approximately 73 tons of carbon dioxide emissions).

Economic Drivers

There is potential for CGS to advocate for SDE as a creative incentive for downtown businesses and initiatives, to include district energy as a source of heating and cooling for new development or replacement of heating and cooling systems for existing businesses.

Conclusion

The CGS renegotiate the sole source agreement with SDE, including a rate structure, for a period of 20 years. SDE has committed to ensuring that costs for a new contract will not exceed costs anticipated if self-generating heating/cooling. This option avoids the risk of a major capital project that would require the procurement, installation and ongoing maintenance of self-generating. It also ensures that the Sudbury Community Arena has a consistent source of heating and cooling and with the continued presence of SDE in the downtown core, other buildings currently being serviced, and future development can access the service.