

	Report Title	Cogeneration Turbines Factory Protection Plan
	Report No.	RCP 19-13
	Author	Rick Cox, Director of Recreation, Culture & Parks
	Meeting Type	Council Meeting
	Council Date	March 25, 2019
	Attachments	<ul style="list-style-type: none"> • Service Contract Review • WHESC Factory Protection Plans

RECOMMENDATION

THAT Council receives Report RCP 19-12 – Cogeneration Turbines Factory Protection Plan;

AND THAT Council authorizes the Mayor and Clerk to sign the Factory Protection Plan with Whitby Hydro Energy Services Corporation at Level C for 9 years at an annual cost of \$39,976 plus applicable taxes.

EXECUTIVE SUMMARY

The turbines at the Tillsonburg Community Centre (TCC) installed in 2018 as part of the cogeneration project require a program of ongoing preventative maintenance to ensure proper operation. The manufacturer provides four levels for entering into Factory Protection Plan (FPP) so that there is a more predictable cost profile over the functional life of the turbines. Staff has reviewed the levels and recommends that the Town enter into a 9-year/79,999 hour FPP for parts, and send Town staff for the required training so that the Town can perform the preventative maintenance in-house.

BACKGROUND

The Capstone generators at the TCC are reaching the end of their factory warranty period. Entering a maintenance agreement before the end of March when the warranty period expires will avoid a 25% increase in the cost of the agreement.

Implementing a preventative maintenance program for the Capstone Turbines at the TCC will ensure that the cogeneration plant continues to operate in the way it was designed to, and will meet or exceed the projected lifespan of the equipment. Capstone offers an FPP program to help turbine owners plan for the cost of this work. There are four levels within the FPP program. The authorized vendor for Ontario, Whitby Hydro Energy Services Corporation (WHESC), has provided pricing information and recommends the Town choose Level C. These prices are the total annual cost for all three turbines.

- A. Five year/39,999 hour parts only (\$22,967/yr quoted price)
- B. Five year/39,999 hour parts and labour (\$35,000/yr estimated cost)
- C. Nine year/79,999 hour parts only (\$39,976/yr quoted price)
- D. Nine year/79,999 hour parts and labour (\$58,000/yr estimated cost)

The reason for providing both a five-year/39,999 hour plan and a nine-year/79,999 hour plan is that Capstone recommends that the turbines are scheduled for a rebuild at 40,000 hours of use.

The cost of the parts included in the FPP considerably exceeds the \$359,784 total cost of the Plan over the nine-year term.

If the turbines are running 24/7, 40,000 hours of use will be reached shortly before the five-year mark. Although many Capstone turbines are operating well past 40,000 hours without requiring a rebuild, it is best to plan to meet that timeline. Selecting Level C gives the Town the option of having the parts but delaying the rebuild until it is actually required, and deploying labour dollars internally rather than at a premium contracted rate.

A review of the FPP program by the project consultants arrived at a recommendation that the Town's best interest would be served by having staff trained to do the work, rather than including the labour into the FPP or having the work done by the company that installed them. Capstone provides the training program at their facility and annual online recertification. With Town staff trained to determine the actual need, the replacement parts would be received as per the factory schedule, but they would be stockpiled until actually needed. As a result, there is a good chance that the parts secured under the FPP would cover the local need well beyond the end of the FPP.

The consultant's evaluation indicated that the Town could choose not to use an FPP, which might secure a lower annual cost at a higher risk, as long as an annual allocation was placed in reserve for parts when needed. Alternatively, the Town could reduce the risk of a major in-year parts cost by selecting the FPP, but with a higher annual cost.

From the consultant's report:

- *An in-house maintenance arrangement for the CHP units should be implemented to ensure parts and services are available when needed.*
 - *An adequate maintenance fund (equal to the cost of a service arrangement or as determined) could be maintained to facilitate this arrangement.*
 - *Alternately, if the minor risk that system failure occurs is a major concern, a Capstone Factory Protection Plan can be selected to remove all risk with greater annual costs.*
- *Provide Capstone authorized service provider training to a plant operator.*

By securing a fixed annual cost for the parts needed for scheduled maintenance and any unscheduled breakdowns, the Town reduces the exposure it would have for parts costs and the normal annual inflationary price increases and fluctuations in exchange rates. Like any warranty program, the FPP initially costs more per year than it would likely cost for the actual need in that year. However, based on the current list price for parts, the total cost of the FPP is already considerably less than the sum of the cost of the scheduled parts need over the life of the FPP. In addition, the FPP price includes any non-scheduled parts required for unplanned breakdowns. Staff recommends that the Town choose the lower-risk option for the longest time frame available and enter a nine-year/79,999 hour FPP.

If Council would prefer not to enter into the FPP, staff strongly recommends that a minimum of \$50,000 per year be transferred annually into a maintenance reserve to cover the cost of parts when needed.

FINANCIAL IMPACT/FUNDING SOURCE

Built into the business case for the cost recovery analysis on the cogeneration project was an annual cost allocation for preventative and lifecycle replacement maintenance of \$20,000 per turbine or \$60,000 per year. Based on the initial install warranty period covering the first quarter of 2019, the approved 2019 budget includes \$45,000 for this purpose. By training our own team and deploying the warranty program, the Town is able to reduce the annualized budget requirement to \$50,000.

Over the life of the nine-year/79,999 hour FPP, the total cost for parts needed for scheduled and unplanned repair parts is guaranteed not to exceed the \$359,784 cost of the warranty (plus applicable taxes).

COMMUNITY STRATEGIC PLAN (CSP) IMPACT

1. Excellence in Local Government
 - ☒ Demonstrate strong leadership in Town initiatives
 - ☐ Streamline communication and effectively collaborate within local government
 - ☒ Demonstrate accountability
2. Economic Sustainability
 - ☐ Support new and existing businesses and provide a variety of employment opportunities
 - ☐ Provide diverse retail services in the downtown core
 - ☐ Provide appropriate education and training opportunities in line with Tillsonburg's economy
3. Demographic Balance
 - ☐ Make Tillsonburg an attractive place to live for youth and young professionals
 - ☐ Provide opportunities for families to thrive
 - ☐ Support the aging population and an active senior citizenship
4. Culture and Community
 - ☐ Promote Tillsonburg as a unique and welcoming community
 - ☐ Provide a variety of leisure and cultural opportunities to suit all interests
 - ☐ Improve mobility and promote environmentally sustainable living

Report Approval Details

Document Title:	RCP 19-13 - Cogeneration Turbines Factory Protection Plan.docx
Attachments:	- RCP 19-13 - ATT 01 - Service Contract Assessment.pdf - RCP 19-13 - ATT 02 - FPP Plan C.pdf
Final Approval Date:	Mar 20, 2019

This report and all of its attachments were approved and signed as outlined below:

Dave Rushton - Mar 20, 2019 - 4:07 PM

No Signature - Task assigned to David Calder was completed by assistant Lana White

David Calder - Mar 20, 2019 - 4:11 PM

No Signature - Task assigned to Donna Wilson was completed by assistant Lana White

Donna Wilson - Mar 20, 2019 - 4:11 PM