

ITEM #: 40
DATE: 03-10-26
DEPT: ELEC

COUNCIL ACTION FORM

SUBJECT: RAPID NEEDS PURCHASE FOR DAYTON AVENUE SUBSTATION TRANSFORMER

BACKGROUND:

During a routine weekly inspection in September 2025, it was noted that there was a significant oil leak from the Dayton Avenue 69 kV-13.8 kV transformer. This transformer is the main transformer that feeds the City's Industrial load, including customers such as Amcor, Danfoss, and 3M. The load was temporarily shifted to two other transformers within the same substation.

While these two other transformers are the contingency plan for this type of emergency, they are not intended to handle this extra load for an extended duration. **Returning the main transformer back to service as soon as possible was essential to allow the load to be distributed back to normal levels and prevent damage to the backup transformers, one of which is due for its own repair work.**

After taking the transformer offline, staff was able to investigate further. It was discovered that the transformer was losing up to eight gallons of oil per day and all the bushing gaskets needed to be replaced. Because the bushings are mounted on a horizontal plane, safe oil levels could not be maintained if the transformer was put back online. As a result, the decision was made to drain oil down below the leak and place a nitrogen blanket on top. In an effort to slow the nitrogen from leaking out just as fast, external sealing materials were also placed.

A transformer service company was needed to respond as quickly as possible to fix the leak on the transformer. Obtaining responses for the work was difficult due to the demand during this time of year. Most utilities have substation transformer service contractors booked for maintenance after the summer months. The following companies were contacted: Delta Star, TLS, RMS Energy, and Waukesha. **RMS Energy was the only company to provide a proposal and the ability to schedule the work within a reasonable time.**

Because the oil had to be drained to stop the leak, and the rest of it was needed to be drained to facilitate the gasket replacements, the oil needed to be reconditioned and processed in addition to the seal replacement. The quote was found to be reasonable, considering similar amounts have been paid for scheduled work in the past, including months of preparation that were similar in scope.

City staff decided to implement Rapid Needs Purchases for the materials and repair of the transformer. Per the Purchasing Policies & Procedures, a "rapid-need situation" occurs when materials and/or services could not have been predicted and must be procured in less than the normal allotted time to continue service to the public.

The City's Purchasing Policies & Procedures state that "if the cost of purchases related to [an] emergency or rapid need is \$50,000 or more, the using department shall

maintain records” of the expenditure. The policy further states that the using department “shall report the situation and related expenses to the City Manager for presentation to the City Council. The report shall be in a format as directed by the City Manager.”

Following the authorization of this "Rapid Needs" purchase by the City Manager's Office, a purchase order was issued to RMS Energy in a not-to-exceed amount of \$80,987.23. On Friday, October 3, 2025, RMS Energy mobilized and completed repairs over the following three days. After completing all tests, the moisture levels were higher than anticipated, despite the use of a nitrogen blanket. An additional day of heating the oil during processing was required to remove the moisture from the oil, ensuring safe operation. On Monday, October 6, the City Manager's Office authorized change order #1 in the amount of \$13,375, the extra cost incurred for heating the oil for an additional day. The total cost after change order #1 was \$94,362.23.

After that repair took place, initial testing did not show any leakage. However, after the was energized, heated up, and operated under pressure for four days, another gasket (a tap-changer gasket rather than a bushing gasket like those initially replaced) began leaking. Further evaluation determined that all replaceable seals within the transformer needed to be replaced.

On November 10, 2025, the City Manager's Office authorized a second change order to drain the oil, replace all the replaceable seals, and return the reconditioned oil to the transformer. **The second change order was in the amount of \$127,318.23, for a total cost of \$221,680.46.** All repairs have been completed, and the transformer is back in service. **A lesson learned from this event will be to implement a new procedure: when gasketed seals are opened, all seals will be replaced to ensure that there is no possibility of a need to drain the transformer twice for leaking seals.**

The repair costs will be paid from the equipment repairs account where there is a total of roughly \$320,000 for these types of repairs. Originally, the FY 2025/26 budget included enough funds to perform oil conditioning services for two transformers (DA6T4 and DA6T2). The emergency repairs for DA6T4 included in this CAF exhausted all of the original funds. To continue as planned and perform the services to DA6T2, additional funds will be reallocated to this the account during FY 2025/26 budget adjustments. DA6T2 servicing is planned to be performed later this fiscal year.

ALTERNATIVES:

1. Accept the report of the rapid needs purchase for repairs to transformer DA6T4 at a cost totaling \$221,680.46.
2. Refer this item to staff for further information.

CITY MANAGER'S RECOMMENDED ACTION:

To restore reliable electric service to the City's customers in the quickest manner possible, a rapid needs purchase was required. Repairs have been completed to critical electric infrastructure through this process, and a report to the City Council is required. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1 as described above.