



Agenda Item: 11.B
Date of Meeting: April 28, 2025
Department: Public Works

STAFF REPORT

To: City Council
From: Nora Gamino
Subject: **Approval of Procurement for Variable Frequency Drive and Transformer Installation at the City Wastewater Treatment Plant**
Prepared On: April 22, 2025
Attachments: 2025 Sewer VFD Purchase Order 4.25
Eldridge Estimate
Backup documentation on quotes

Background/History:

The City's wastewater treatment plant is currently experiencing operational challenges with its sludge pumping equipment. The system relies on Variable Frequency Drives (VFDs) to regulate pressure in the sludge transfer lines, which is essential for consistent operation and protection of the piping system.

The plant includes two sludge pumps, each paired with a dedicated VFD to allow alternating use. In 2020, the City purchased two replacement sludge pumps. However, due to ongoing power quality issues and VFD malfunctions, only one of the new pumps has been installed. As a result, the plant is operating with one newer sludge pump and VFD, and one very old sludge pump and VFD—both of which are obsolete.

The new VFD, installed within the last couple of years, has been consistently tripping, even when not in use. This problem is attributed to unstable or "dirty" power, a known issue at the plant due to its location at the end of the power distribution line.

Analysis/Discussion:

To resolve these issues, staff solicited quotes for the purchase and installation of a new VFD, an isolation transformer, and two disconnect switches. The transformer is necessary to stabilize incoming power before it reaches the VFDs, thereby protecting the equipment from electrical surges and fluctuations. The selected transformer will be sized to support both VFDs.

Eldridge Electric and Son, Inc. submitted a comprehensive proposal for the procurement and installation of the required equipment. The proposal includes:

- A 3-phase, 34 kVA, 240V-240Y/139V isolation transformer (25–35 day lead time),
- Two 30-amp fused disconnect switches,
- A 240VAC, 3-phase ACQ580 VFD in a 3R enclosure (4–6 week lead time),
- Startup and commissioning services (which extend the warranty from 18 to 30 months),
- As-built drawings and labor at prevailing wage rates.

The estimated time for on-site work is five business days.

Two additional vendors were contacted in accordance with the City’s purchasing policy. Both vendors indicated that they do not wish to provide a quote, as the scope of work is outside their technical capabilities.

Failure to complete this project poses a significant operational risk. Without a reliable sludge transfer system, the plant may be unable to deliver sludge to the digesters, potentially causing them to go sour. This would severely damage or halt the entire treatment process and could result in regulatory violations and costly emergency repairs.

Economic Impacts:

While the cost of this procurement is defined and expected, the economic risks of inaction are substantial. A failure in the sludge transfer system could lead to digester failure, triggering emergency response costs, regulatory penalties, and significant repair expenses.

Budget Impacts:

This item is not currently included in the Fiscal Year 2024–2025 Budget. A budget adjustment is proposed to allocate funds from the Sewer Fund, expense account 002-051-56027 (capital improvement), to cover the cost. Delaying this work until the Fiscal Year 2025–2026 budget cycle would likely increase the cost by an estimated 5–10% due to anticipated contractor rate adjustments.

Legal Review:

City Attorney Pucci has reviewed this item and finds that the recommended action complies with the law.

Recommended Action:

Staff recommends that the City Council:

1. Approve the procurement and installation of a Variable Frequency Drive (VFD) and transformer by Eldridge Electric and Son, Inc. in the amount of \$29,518.37;
2. Approve the corresponding budget adjustment; and
3. Authorize the Public Works Director to execute the necessary purchase agreement.

Approved By: Ethan Aukee 4/24/2025

Approved By: Robin Picken 4/24/2025

Approved By: Dean Pucci 4/24/2025

Approved By: Deston Dishion 4/24/2025