



# **Capital Business Case**

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## **Cardinal Water Pollution Control Plant Boiler Replacement**

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**2023 Budget**

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## **Cardinal WPCP Boiler Replacement**

### **Executive Summary**

The Cardinal Water Pollution Control Plant utilizes four boilers to provide heat to the facility and to the Auto Thermophilic Aerobic Digester (ATAD) Vessel # 2. These boilers play an important role in providing supplemental heat to digest and stabilize biosolids prior to storage. Two Hydrotherm boilers have been replaced since 2008. The remaining two boilers have been in operation since 1997.

### **Business Need**

The ignition switch board has become obsolete for the remaining two aging boilers. Additional parts are becoming more difficult and expensive to purchase. A used ignition board was installed to keep boiler # 1 operational.

### **Options or Solutions Analysis**

E/S reached out to multiple companies. Three companies provided budgetary estimates in 2022:

Morrisburg Plumbing: **\$ 15,888.93 per boiler**

Black & McDonald: **\$ 20,886.60 per boiler**

Atel Air: **\$ 23,940.00 per boiler**

### **Option 1**

Contract Morrisburg Plumbing to replace one boiler in 2023 and the second in 2024.

### **Option 2**

Contract Morrisburg Plumbing to replace both boilers in 2023.

### **Option 3**

Continue to operate aging equipment with the increased risk of failure and limited serviceability remaining.

### **Financial and/or Non-Financial Benefits**

Upgrading aging or obsolete equipment will reduce the likelihood of incurring unbudgeted expenses.

### **Risk Analysis**

The ATAD system requires boilers as a critical component of the sludge heat treatment process. Hygenization maintains a bacterial count within the requirements of the plant's ECA, (< 1000 colony forming units – CFU). Failure to proactively replace aging or obsolete equipment may lead to equipment failures that could disrupt the ability to maintain adequate heating in both the Vessel 2 Digester and building.

### **Recommendation**

**Option 1:** Contract Morrisburg Plumbing to replace one boiler in 2023 and plan the second replacement in 2024.

### **Implementation Plan**

Schedule Morrisburg Plumbing to replace and commission a new boiler.

### **Documentation**

Morrisburg Plumbing, Black & McDonald and Atel Air proposals attached.

### **Acceptance Sign-off**

#### **Lead Department**

**Prepared By:** [Eric Wemerman, Chief Water/Sewer Operator

**Date:** 01-16-2023

**Signature:** *Eric Wemerman*

**Approved By:** Sean Nicholson, Treasurer

**Date:** January 30, 2023

**Signature:** *Sean Nicholson*

**Approved By:** Dave Grant, CAO

**Date:** 01-30-2023

**Signature:** *Dave Grant*