

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON SEPTEMBER 24, 2019
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR - ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER
SUBJECT:	REMOVAL AND REPLACEMENT OF UNDERGROUND FUEL AND OIL TANKS

RECOMMENDATION

That on the recommendation of the Managing Director, Environmental & Engineering Services and City Engineer and with the support of the Managing Director, Corporate Services & City Treasurer and Chief Financial Officer, the following actions **BE TAKEN** with respect to replacing the fuel and oil storage tanks at A.J Tyler Operations Centre and Adelaide Operations Centre:

- a) The action taken by the Managing Director, Environmental & Engineering Services and City Engineer in accordance with Procurement of Goods and Services Policy, Section 4.3 d. "Triggering Event" **BE RECOGNIZED**; it being noted that the actions taken required immediate attention in order be in compliance with the Liquids Fuel Handling Code (2017) Technical Standards & Safety Authority (TSSA) and is in the best financial, legal and environmental interests of the Corporation of the City of London;
- b) The City of London's current fuel system maintenance and service vendor, Phoenix Petroleum Ltd., complete the required work in order that the storage tanks are in compliance with the 2017 Liquids Fuel Handling Code at an estimated price of \$970,252 which includes a 10% contingency, excluding HST, **BE APPROVED** in accordance with section 14.4 (d) and (e) of the Procurement of Goods and Services Policy;
- c) The financing for this project **BE APPROVED** as set out in the Sources of Financing Report attached, hereto, as Appendix A;
- d) Civic Administration **BE AUTHORIZED** to undertake any ancillary items outside of the scope identified in the project arising from unforeseen elements that may arise including; dewatering/shoring, damaged or poor condition equipment not identified, fuel sludge removal, contaminated materials; and,
- e) Civic Administration **BE AUTHORIZED** to undertake any final negotiations and all administrative acts that are necessary in connection with this Report and the Agreements referenced herein.

COUNCIL'S 2019-2023 STRATEGIC PLAN

Municipal Council has recognized in its 2019-2023 - Strategic Plan for the City of London the importance of:

Building a Sustainable City

London's infrastructure us built, maintained, and operated to meet long-term needs of our community

- Manage assets to prevent future infrastructure gaps
- Build infrastructure to support future development and protect the environment

Leading in Public Service

Londoners experience exceptional and valued customer service:

- Improve public accountability and transparency in decision making
- Increase efficiency and effectiveness of service delivery

BACKGROUND

PURPOSE

This purpose of this report is to advise committee and Council on the actions taken to date with respect to the immediate replacement of the underground fuel and oil storage tanks at A.J Tyler and Adelaide Operations Centres.

The key objective is to bring the underground storage tanks into compliance within 180 days from the notice of failed corrosion protection results.

CONTEXT

Fleet Services in conjunction with Facilities Design and Construction manage and maintain four (4) City owned major refuelling sites and over thirty (30) smaller bulk fuel storage sites. The small fuel tank sites are primarily at satellite facilities and the larger four sites are at Operational Centres; A.J. Tyler, Exeter Road (EROC), Adelaide (AOC) and Oxford West.

Currently these fuel storage tanks dispense over 3,200,000 litres of fuel for City owned/ leased vehicles and equipment and also provide fuelling services to London Middlesex EMS, Fire Services, Library Board and the diesel fleet at London Police Service. Currently the operational centres carry clear diesel, ultra-low sulfur (ULS) diesel, and gasoline. There are also several small underground bulk oil tanks at these sites that are part of the same underground storage tank system that house hydraulic oil, engine oil and waste oil.

The fuel systems at the major operational centres are comprised of fuel and oil tanks, dispensing equipment, a network of piping and our electronic fuel management system, called "Petrovend". This whole system requires regular maintenance, service, upgrades and calibration which is provided through Fleet Services and a specialized fuel maintenance vendor, Phoenix Petroleum Inc.

In terms of the large underground fuel storage tank assets, two of the existing major sites, EROC and Oxford West Operations Centres, are in good condition. The site at EROC was totally replaced with fiberglass underground fuel tanks and new dispensing equipment and canopy during the outfitting and commissioning of that site in 2007. The Oxford West site had new above ground double wall steel tanks and new dispensing equipment installed as part of commissioning that site in 2009.

The other two major sites, A.J. Tyler and AOC, are the oldest works yard sites and have underground tanks that over thirty years old and are single walled, steel tanks. Over the last several years each of these sites has undergone smaller upgrades and lifecycle maintenance capital projects to keep them in compliance with the Liquid Fuel Safe Handling Code (2017) from Technical Standards and Safety Association (TSSA).

DISCUSSION

During the 2019 regulatory cathodic protection testing earlier this summer, several of the tanks failed to meet compliance and pass certification. Phoenix Petroleum Inc. was asked to verify the results and prepared a report on June 4th 2019 that identified several tanks that required immediate replacement as they could not be brought into compliance due to their age, condition and single wall configuration. As part of the review, Phoenix consulted with both NACE (National Association of Corrosion Engineers) and the Head Engineer of Fuels Safety at the TSSA who both confirmed that replacement was “highly recommended”.

In conclusion the report identified four (4) of the eight (8) tanks at A.J. Tyler needed to be taken out of service and removed and at the AOC site, two (2) of the six (6) tanks needed to be taken out of service and removed as per the code requirements.

The significance of failing corrosion protection is that the tanks are vulnerable to accelerated corrosion and risk of loss of containment therefore the regulations require specific actions in these circumstances under the Liquid Fuel Handling Code (2017).

*“Section 2.3 Corrosion Protection Monitoring – Where the corrosion protection system cannot be certified, the owner shall bring the system to proper working order within 180 days or discontinue handling of product with that system.
(Liquid Fuel Handling Code, 2017 from the TSSA)*

Due to the age and condition of these single wall steel tanks, the corrosion protection system cannot with confidence be brought back into compliance. Earlier in the lifecycle both the tanks and piping have had corrosion protection systems upgraded however at this stage of the tanks service life this is not an option and has far too many risks. The tanks must be taken out of service and replaced.

With respect to the tanks that passed corrosion protection, they are in the same tank nest and have similar characteristics and condition as the failing tanks. Therefore from both a logistics and operational perspective the recommendation is that all the underground system be replaced at A.J. Tyler and Adelaide at the same time. All the underground tanks sit beneath a shared 25 to 30 centimetre (10-12 inch) concrete pad on the surface, so replacing all the tanks within that system while it is excavated is the most effective asset management decision.

An analysis is underway to assess the optimum tank sizes and configurations based on current and future volume requirements, risk, space, new standards and specifications and the impact to underground refuelling infrastructure as a result of future alternative fuel vehicles and equipment (electrification, compressed natural gas). Above ground tanks will be considered wherever practical, particularly at Adelaide.

Procurement Process

Internal discussions occurred between Fleet Services, Facilities Design and Construction and Purchasing and Supply to determine the most effective action plan given the circumstances. It was determined that based on the regulatory requirement and the potential for both enforcement, service interruption and environmental risks, a decision was required as soon as possible to address the timeframe.

At that time Fleet prepared a briefing note regarding the circumstances and recommended that the Managing Director, Environmental and Engineering Services and City Engineer and Manager of Purchasing exercise their authority in the Procurement Policy to undertake this work as a “Triggering Event” which states:

“When the Managing Director is of the opinion that a Triggering Event has occurred, the Managing Director may authorize the purchase of such goods and/or services as is considered necessary to remedy the situation without regard to the requirement for a competitive bid and may approve the necessary contract. The relevant details surrounding the Triggering Event shall be included in a report and submitted to Committee as soon as possible.”

The Managing Director and the Manager of Purchasing have agreed that the situation met the criteria of a “Triggering Event”. This enabled staff to immediately engage a vendor to directly work with the City of London staff on the replacement project. Phoenix Petroleum Inc. as the City’s current fuel maintenance system vendor was appointed since they possesses the skills, experience and expertise with our fuel systems and in addition have the appropriate certification and capability to mobilize very quickly. This is consistent Section 14.4 Single Source clauses (d) and (e) of the Procurement of Goods and Services Policy.

Phoenix Petroleum Inc. as discussed, has been the City’s fuel maintenance system vendor for over 25 years. They have also been the vendor for most of the City’s fuel system capital projects over the years including:

- EROC fuel site installation
- Implementation of “Petrovend” electronic fuel management system
- Oxford West above ground fuel site installation, and
- recent installations of Diesel Exhaust Fluid (DEF) storage dispensing systems for Fire, Police and Public Works

Financial Impact

The total estimated project costs are \$970,252 excluding HST. The cost breakdown is \$447,078 excluding HST for removal and replacement of the underground tanks at AJ Tyler Operations Centre and \$434,970 excluding HST for Adelaide Operations Centre. This is based on the preliminary work done as of the date of this report.

Additional funding may be required as it relates to any unforeseen elements that could occur with this type of work such as ground water measures, shoring requirements, or disposal of materials. A 10% contingency has been identified in the total cost estimate based on the nature of the work. The full project scope and technical work is not completed at this time.

Funding for this project has been identified as outlined in the source of financing attached as appendix A.

In addition, a cost recovery model is under development that will see fuel customers contribute to future life cycle maintenance and the eventual replacement of the new tanks at the end of their useful life.

CONCLUSION

Fleet Services, in conjunction with Facilities, Purchasing and Supply and Finance have initiated the immediate replacement of the underground fuel and oil tanks at A.J. Tyler and Adelaide Operations Centres based on non-conformance with the Liquid Fuel Handling Code (2017) TSSA.

The regulation requires that the owner of underground tanks that fail corrosion protection testing must bring them into compliance or discontinue handling product within 180 days from the date that the tanks could not be certified.

Phoenix Petroleum Inc., the City's fuel system maintenance vendor has confirmed with the National Association of Corrosion Engineers (NACE) and Technical Standards and Safety Association (TSSA) that these tanks are at the end of the service life and should be replaced.

The Managing Director, Environmental and Engineering Services and City Engineer and the Manager of Purchasing have approved the direction to appoint Phoenix Petroleum Inc. as the contractor having the most knowledge, experience and expertise with the City of London fuel system and are able to mobilize immediately. Additionally Phoenix Petroleum will continue to be the City of London's vendor for maintenance, service and inspection of the City's fuel system following the work therefore will have greater accountability for their work.

The actions taken are the best decision based on the circumstances and the best opportunity to ensure the refuelling infrastructure is restored as quickly and seamlessly as possible in full compliance with the TSSA Liquid Fuel Handling Code. Supporting these actions will improve City of London fuel system asset inventory, ensure continuity of service and significantly reduce the risk of environmental impact.

SUBMITTED BY:	REVIEWED & CONCURRED BY
MIKE BUSHBY, BA DIVISION MANAGER, FLEET & OPERATIONAL SERVICES	JAY STANFORD, MA, MPA DIRECTOR, ENVIRONMENT, FLEET & SOLID WASTE
RECOMMENDED BY:	
KELLY SCHERR, P. ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER	

Appendix "A" - Source of Financing

C: Ian Collins, Director of Financial Services
John Freeman, Manager of Purchasing & Supply
Barrie Galloway, Manager of Fleet Maintenance
Stephen MacDonald, Manager of Facilities