



CITY OF TOPEKA

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LIQUID OXYGEN STORAGE AND VAPORIZATION SYSTEM 291139.01

Requests for Proposals

PART 1 – GENERAL

1.01 SUMMARY

- A. The City of Topeka Water Pollution Control Division (WPC) is soliciting evaluated pricing proposals from qualified liquid oxygen suppliers to furnish, install, commission, lease, inspect, test, and maintain a complete packaged Liquid Oxygen Storage and Vaporization System (LOSVS).
- B. The LOSVS shall include the liquid oxygen storage tank, vaporization equipment, piping, valves, regulators, safety devices, instrumentation, monitoring, controls, alarms, and all other appurtenances necessary for a safe and complete operating system.
- C. The LOSVS shall be installed, commissioned, and ready to support testing of the Superoxygenation System within 14 weeks after the issuance of the purchase order (PO).
- D. The FIRM shall provide startup services, initial liquid oxygen required for testing, and training necessary to place the LOSVS into service.

1.02 SCOPE OF WORK

- A. Provide the complete LOSVS from a single responsible source. The FIRM shall be responsible for performance, compatibility, safety, regulatory compliance, inspection, testing, and maintenance of the LOSVS throughout the lease period.
- B. Coordinate the work with the City, Crossland Heavy Contractors, Inc. (General Contractor), Bartlett & West (Engineer), and ECO Oxygen Technologies, LLC (Superoxygenation System Supplier).
- C. Furnish and perform, at a minimum:
 - 1. One nominal 3,000-gallon vertical liquid oxygen storage tank.
 - 2. Ambient-air vaporization equipment sized to satisfy the specified continuous oxygen demand under the Project's outdoor design conditions.
 - 3. Liquid and gaseous oxygen piping within the FIRM's scope.
 - 4. Fill connections, pressure-building equipment, regulators, valves, relief devices, and required safety equipment.
 - 5. Tank-level and pressure monitoring.
 - 6. Vaporizer controls and automatic switching equipment when required by the proposed configuration.
 - 7. Gaseous oxygen flow-control and measurement equipment compatible with the Superoxygenation System.
 - 8. Provide local alarms and supplier telemetry permitting WPC to remotely view tank level and pressure through a web-based system.
 - 9. Equipment supports, anchor bolts, and anchorage design.
 - 10. Delivery, unloading, installation, startup, testing, commissioning, and training.
 - 11. Routine inspections, regulatory testing, preventive maintenance, repairs, and replacement of leased equipment.

12. Liquid oxygen deliveries during the Contract term as specified in the Pricing Proposal Form.
 13. Disconnect and remove supplier-owned LOSVS equipment at Contract expiration in accordance with Article 1.08.
- D. Crossland Heavy Contractors will provide the site improvements, equipment pad, electrical service, and 1-inch stainless-steel gaseous oxygen piping to the point shown on the Drawings. The FIRM shall verify the location, configuration, electrical requirements, anchorage requirements, and connection requirements before installation.
 - E. Clearly identify in the Pricing Proposal: equipment and services included; required power and utilities; work required from the City or General Contractor; proposed oxygen-piping connection; monitoring and alarm interfaces; installation and startup schedule; and exceptions or deviations.

1.03 PERFORMANCE REQUIREMENTS

- A. The LOSVS shall continuously supply gaseous oxygen to the Superoxygenation System at the following minimum conditions:
 1. Vaporization Capacity: The LOSVS shall continuously deliver not less than 730 scfh of gaseous oxygen at the required delivery pressure, 24 hours per day, under the specified site and ambient conditions. The FIRM shall size and arrange the vaporizer or vaporizers to maintain this capacity during expected frost accumulation and defrosting and, when multiple vaporizer banks are provided, during normal switching between banks.
 - a. Site elevation: 900 feet above sea level.
 - b. Installation: Outdoors and fully exposed to weather.
 - c. Minimum outdoor design dry-bulb temperature: -20° F.
 - d. Maximum outdoor design dry-bulb temperature: 110° F.
 - e. Exposure to humidity, rain, snow, frost, ice, wind, and solar radiation.
 2. Maximum process oxygen feed requirement: 1,450 pounds of oxygen per day (approximately 730 scfh).
 3. Service: Continuous, 24 hours per day.
 4. Nominal delivery pressure: 100 psig, or as coordinated with ECO Oxygen Technologies.
 5. Discharge temperature: Suitable for downstream piping, valves, instruments, and the Superoxygenation System.
 6. Purity: Commercial liquid oxygen with a minimum oxygen purity of 99.5 percent by volume, suitable for wastewater superoxygenation and compatible with the ECO Oxygen Technologies Superoxygenation System.
 7. Furnish and install all piping, valves, fittings, connectors, supports, and appurtenances from the LOSVS through the final connection to the plain end of the City's 1-inch, 304 stainless-steel oxygen piping at the location shown on Conformed Project Drawing D-102.
 - a. Provide a 1-inch, full-port, 304 stainless-steel isolation ball valve at the connection to the City's piping. The valve shall be designed for gaseous-oxygen service at the system design pressure and temperature and shall be factory cleaned, assembled, tested, capped, and packaged for oxygen service in accordance with ASTM G93 and CGA G-4.1.
 - b. Provide oxygen-compatible seats, seals, packing, gaskets, and lubricants. Provide a lockable handle and permanent identification stating: "OXYGEN — OPEN SLOWLY."
 - c. Provide an oxygen-service-rated removable connection between the isolation valve and the FIRM's regulation stand. The FIRM shall select the connection type and shall be responsible for compatibility, cleanliness, installation, testing, and leak-tight performance of the complete connection assembly.
 - d. The FIRM shall field verify the City's pipe termination and furnish all components necessary to complete the connection. For the final oxygen-piping connection, no piping, valves, fittings, connectors, or other connection materials will be furnished by

the City or Crossland Heavy Contractors beyond the plain-end 1-inch pipe shown on Drawing D-102.

- B. The FIRM shall provide a vaporization system capable of continuously delivering not less than 730 scfh of gaseous oxygen at the required delivery pressure and at the specified minimum outdoor design temperature. The capacity shall account for site elevation, ambient-temperature derating, frost and ice accumulation, defrost cycles, and when applicable vaporizer-bank switching.
- C. The FIRM shall select the number, arrangement, and operating sequence of vaporizers. The FIRM shall describe how the required oxygen service will be maintained or restored during defrosting, maintenance, and equipment failure.
- D. The Proposal shall identify the number and arrangement of vaporizers and state whether the LOSVS will continuously provide not less than 730 scfh with one vaporizer unavailable because of maintenance, malfunction, or replacement. Full redundant vaporization capacity is preferred but is not required. The City will consider the proposed vaporizer arrangement, service continuity, restoration plan, and associated evaluated cost in its evaluation.
- E. If the proposed LOSVS cannot maintain the required capacity with one vaporizer unavailable, the FIRM shall provide the personnel, replacement equipment, temporary equipment, or other resources necessary to restore the required capacity within one business day after notification or discovery of the loss of capacity. If the FIRM fails to restore the required capacity within one business day, the FIRM shall credit the City the prorated daily LOSVS lease charge for each day the required capacity remains unavailable, when the loss of capacity is attributable to equipment or services furnished by the FIRM or to an act or omission of the FIRM or its subcontractors.

1.04 LOCATION AND SITE CONDITIONS

- A. Install the LOSVS at Central Park Pump Station, 2200 SW Central Park Avenue, Topeka, Kansas.
- B. Review the Contract Drawings and inspect the site before finalizing the arrangement.
- C. Fit equipment within the designated area and maintain required clearances, service access, delivery-truck access, and code-required separation distances.

1.05 CODES AND STANDARDS

- A. Comply with currently adopted applicable federal, state, and local requirements, including OSHA; ASME Boiler and Pressure Vessel Code; ASME B31.3; NFPA 55; applicable Compressed Gas Association standards, including CGA G-4.1; National Electrical Code; City of Topeka building and fire codes; Kansas State Fire Marshal requirements; and U.S. Department of Transportation requirements applicable to liquid oxygen delivery.
- B. Where requirements conflict, the more stringent applicable requirement shall govern unless otherwise approved by the authority having jurisdiction.
- C. Equipment, piping, valves, instruments, and components exposed to oxygen shall be compatible with oxygen service and cleaned and protected in accordance with applicable CGA requirements.

1.06 DESIGN RESPONSIBILITY AND SUBMITTALS

- A. The FIRM shall be responsible for the design and selection of the complete LOSVS and for compatibility among all components furnished under this Contract.
- B. The FIRM shall design and furnish equipment anchorage and structural supports for applicable dead, operating, wind, seismic, thermal, and other loads at the Project site.
- C. Manufacturer's standard drawings, specifications, calculations, and installation details are acceptable when they accurately represent the proposed equipment and are applicable to the Project site conditions. The FIRM shall review the documents and provide written confirmation of their applicability. Documents shall be prepared and sealed by a Professional Engineer licensed in Kansas only when required by applicable law, code, permit, or the authority having jurisdiction. When a seal is required, only the affected site-specific documents shall be prepared and sealed. No Professional Engineer seal is otherwise required by this Solicitation.
- D. Submit the manufacturer's published capacity data for each proposed vaporizer. The FIRM shall certify in writing that the complete vaporizer arrangement will continuously deliver not less than

730 scfh of gaseous oxygen at the required delivery pressure under the specified site and ambient conditions. The capacity data and certification shall account for site elevation, ambient-temperature derating, continuous operation, frost accumulation, defrosting, and, when applicable, switching between vaporizer banks. The submittal shall identify the proposed vaporizer quantity, configuration, operating sequence, and site-rated continuous capacity. This certification does not require a Professional Engineer's seal unless Paragraph 1.08.C applies.

1.07 RECORD DOCUMENTS AND O&M INFORMATION

- A. After commissioning, submit record drawings showing the installed configuration and points of connection. Record drawings shall be prepared and sealed by a Professional Engineer licensed in Kansas only when required by Paragraph 1.06.C.
- B. Submit operating and maintenance information covering normal and emergency procedures, deliveries, safety precautions, alarm response, inspection and maintenance, and normal and emergency contact information.

1.08 END-OF-TERM EQUIPMENT REMOVAL

- A. Within 90 calendar days after expiration or termination of the Contract, the FIRM shall disconnect and remove all supplier-owned LOSVS equipment.
- B. At least 120 calendar days before the scheduled Contract expiration, the FIRM shall provide the City with an itemized, good-faith estimate of the removal cost. Reimbursable costs shall be limited to:
 - 1. Labor calculated using the applicable Contract labor and service rates.
 - 2. Reasonable crane, rigging, freight, and transportation costs.
 - 3. Other removal costs approved in writing by the City before they are incurred.
- C. Payment shall be based on reasonable, documented actual costs. The FIRM shall provide supporting invoices and receipts. Third-party costs shall be reimbursed without additional markup unless a markup is expressly stated in the executed Contract.
- D. The FIRM shall repair damage caused by its removal operations and leave the connection point and site in a safe condition. Removal or restoration of City-owned foundations, bollards, utilities, or other permanent improvements is not required unless separately authorized in writing.
- E. No unreimbursed installation cost, equipment depreciation, early-termination charge, or similar fee shall apply upon completion of the full ten-year Contract term.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Equipment shall be new or serviceable supplier-owned equipment suitable for the intended service and lease period.
- B. Provide all equipment and accessories required for safe and reliable operation, whether or not every component is specifically identified.
- C. Rate components for the pressures, temperatures, flows, environmental conditions, and oxygen service to which they will be exposed.

2.02 LIQUID OXYGEN STORAGE TANK

- A. Provide one vertical liquid oxygen storage tank with a nominal capacity of 3,000 gallons.
- B. The tank shall be ASME designed and stamped; registered and maintained as required; equipped with the pressure-relief, venting, pressure-building, economizer, filling, withdrawal, isolation, level, and pressure devices needed for complete operation; suitable for outdoor installation; finished for outdoor cryogenic oxygen service; and marked as required by current codes.
- C. Select a maximum allowable working pressure compatible with the complete LOSVS, required delivery pressure, and downstream Superoxygenation System.

2.03 VAPORIZATION SYSTEM

- A. Provide an ambient-air vaporization system with a guaranteed continuous site-rated capacity of not less than 730 scfh at the required delivery pressure and the specified outdoor design conditions, sufficient for a process demand of 1,450 pounds of oxygen per day.
- B. Design the system to prevent unacceptable capacity loss from frost or ice accumulation.
- C. Where multiple vaporizer banks are provided, furnish automatic switching controls with manual operation provisions.
- D. Vaporizers, manifolds, isolation and switching valves, relief devices, and controls shall be suitable for oxygen and cryogenic service.

2.04 PIPING, VALVES, AND REGULATION EQUIPMENT

- A. Provide piping, valves, regulators, relief devices, check valves, fittings, supports, and accessories within the FIRM's scope necessary for a complete system.
- B. Liquid oxygen piping shall be designed for the intended cryogenic service. Prevent liquid oxygen from becoming trapped between closed valves with pressure relief.
- C. Components shall be cleaned and certified for oxygen service. Provide the final connection to the 1-inch 304 stainless-steel gaseous oxygen piping installed by the General Contractor.

2.05 INSTRUMENTATION AND CONTROLS

- A. Provide local instrumentation and controls required for safe and reliable operation, including low tank-level alarm; low and high delivery-pressure alarms; and common system-trouble alarm.
- B. The FIRM is responsible for telemetry and the controls furnished as part of the LOSVS. Controls and field wiring outside the defined interface are by others unless identified otherwise in the Pricing Proposal.

PART 3 – EXECUTION

3.01 COORDINATION

- A. Coordinate equipment dimensions, access, loads, anchorage, piping connections, power requirements, and control interfaces with the General Contractor before delivery.
- B. Participate in coordination meetings as reasonably required and promptly notify the City and General Contractor of any condition that may prevent readiness for testing within 14 weeks after issuance of the PO.

3.02 INSTALLATION

- A. Install in accordance with the FIRM's design, the manufacturer's instructions, applicable codes, and the Contract Drawings. Use personnel qualified for bulk liquid oxygen systems.
- B. Protect oxygen-clean equipment from contamination during shipment, storage, and installation. Repair damaged finishes in accordance with manufacturer recommendations.

3.03 STARTUP AND ACCEPTANCE TESTING

- A. Provide a qualified representative to inspect the installation and supervise startup and testing. Provide liquid oxygen required for initial filling, startup, commissioning, and acceptance testing.
- B. Before startup, verify equipment installation and anchorage; oxygen-piping completion and cleanliness; valve, regulator, and relief-device operation; instrument calibration; controls and alarms; pressure and leak testing; and interface readiness.
 - 1. Connect to the point of connection shown on Conformed Project Drawing D-102.
- C. Correct deficiencies and repeat testing at no additional cost. Submit a startup and test report confirming readiness for operation.

3.04 TRAINING

- A. Provide one training session of up to four hours for WPC operations and maintenance personnel.
- B. Provide electronic copies of training materials.

3.05 IDENTIFICATION

- A. Major equipment shall have a permanently attached, readily visible manufacturer's nameplate showing, as applicable, manufacturer, model, serial number, rated pressure, rated capacity, and code or certification markings.
- B. Provide equipment and hazard identification required by applicable codes and authorities having jurisdiction.

3.06 MAINTENANCE AND SERVICE

- A. Throughout the lease, provide inspections, preventive maintenance, repairs, regulatory testing, and equipment replacement necessary to maintain safe operation.
- B. Provide a 24-hour emergency telephone number. Respond by telephone within four hours of an emergency request and provide qualified onsite service within one business day when required.
- C. Coordinate planned interruptions with WPC in advance, except during emergencies.

3.07 RESPONSIBILITY FOR OPERATION

- A. The FIRM is responsible for the condition, maintenance, regulatory compliance, performance and operation of leased equipment. WPC will report alarms, abnormal conditions, damage, or suspected problems.

PART 4 – PROPOSAL, QUALIFICATIONS, CONTRACT

4.01 PROPOSAL AND SELECTION PROCESS

- A. Proposal Format – proposal margins not smaller than 0.75" and font size not smaller than 10. All information submitted becomes the property of the City of Topeka and should include the following:
 - 1. Pricing Proposal Form
 - 2. Schedule and Service Commitments indicating:
 - a. Calendar days required after Notice of Award to submit complete design and coordination information
 - b. LOSVS will be installed, commissioned, and ready to support system testing by 14 weeks or sooner from the purchase order (PO) issued date: ☐ Yes ☐ No
 - c. Normal delivery lead time after City request
 - d. Emergency delivery response time after City request
 - e. Emergency telephone response (maximum two hours proposed)
 - f. Onsite emergency service response (maximum one business day proposed)
 - g. Nearest service location
 - 3. Exceptions, Deviations, and Minimum Purchase Requirements listing:
 - a. Every exception or deviation from the Solicitation Documents and any minimum purchase or take-or-pay requirement. If none, write "NONE." Silence constitutes full compliance.
 - 4. A technical description of the proposed LOSVS, including the tank, vaporizers, controls, alarms, and system interfaces.
 - 5. A description of the vaporizer arrangement and how continuous oxygen service will be maintained during frost accumulation, defrosting, maintenance, and equipment failure.
 - 6. A liquid oxygen delivery plan identifying the normal delivery lead time, emergency delivery capability, nearest supply source, and contingency arrangements.
 - 7. An emergency service plan identifying telephone and onsite response commitments, nearest service location, and available service personnel.
 - 8. Information for at least three comparable installations with references.
 - 9. Identification and qualifications of the proposed installation contractor and service personnel.
- B. The City will first determine whether each Technical and Pricing Proposal satisfies the mandatory requirements of the Solicitation Documents. A Technical and Pricing Proposal that fails to satisfy a mandatory requirement may be rejected without further evaluation. The Firm that is deemed

most qualified to begin the negotiation process for the scope of work. If the City and selected Firm cannot agree on scope, the City may terminate negotiations and proceed with selecting another Firm. Proposal evaluation scoring will be based primarily on the following considerations:

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| 1. Pricing Proposal (submitted separately) | 30 points |
| 2. Proposed LOSVS technical approach, capacity, reliability, and redundancy | 20 points |
| 3. Liquid oxygen delivery capability and emergency service response | 15 points |
| 4. Experience and past performance with comparable bulk liquid oxygen systems | 10 points |
| 5. Installation, commissioning, and coordination approach | 10 points |
| 6. Ability to meet the required Project schedule | 15 points |
| 7. Total | 100 points |
- C. The City reserves the right to reject any or all Proposals, waive minor irregularities when permitted, request clarification, and make an award determined to be in the City's best interests in accordance with applicable procurement requirements.

4.02 QUALIFICATIONS

- A. The FIRM shall be regularly engaged in furnishing and servicing bulk liquid oxygen systems and demonstrate experience with at least three installations of comparable capacity.
- B. Maintain qualified service personnel capable of responding to the Project throughout the contract period.
- C. Identify proposed equipment manufacturers, installation contractor, service location, and normal and emergency response capabilities.

4.03 CONTRACT TERM AND PRICE ADJUSTMENTS

- A. Contract Term. The Contract term is ten years, subject to earlier termination under Paragraph 4.03.E or another termination provision of the Contract. Contract Year 1 begins on the date the City accepts the commissioned LOSVS and authorizes routine service, unless another date is stated in the Contract. Each succeeding Contract Year is the 12-month period immediately following the preceding Contract Year. The Contract does not renew automatically. Equipment modification, replacement, relocation, or addition does not restart or extend the Contract term unless authorized by a written amendment executed by the City.
- B. Equipment Lease. The Proposer shall state the monthly LOSVS lease rate for each of Contract Years 1 through 10. Each rate shall be firm for the applicable Contract Year and shall include inspections, preventive maintenance, regulatory testing, telemetry, repairs, replacement of leased equipment, and all other costs required to maintain the LOSVS in compliance with the Contract. The proposed lease rates shall not be adjusted except by a written Contract amendment executed by the City.
- C. Liquid Oxygen, Delivery, Labor, and Service Rates. The Proposer shall state the Contract Year 1 unit prices for liquid oxygen, scheduled delivery, and supplemental labor and services in the Pricing Proposal Form. Beginning with Contract Year 2, the FIRM may implement one adjustment to each applicable price or rate per Contract Year. An increase shall not exceed 5.0 percent of the then-current price or rate.
- D. Price-Adjustment Notice and Effective Date. The FIRM shall provide written notice of a proposed price adjustment at least 120 calendar days before the beginning of the next Contract Year. The notice shall identify the then-current price or rate, the proposed price or rate, and the percentage adjustment.

- 1. No price adjustment shall be retroactive or take effect during a Contract Year.

2. A timely submitted adjustment that complies with this Article and does not exceed 5.0 percent of the then-current price or rate shall become effective on the first day of the next Contract Year unless the City exercises its termination right under Paragraph 4.03.E.
 3. The City may reject an adjustment as noncompliant only if it is untimely, mathematically incorrect, exceeds the 5.0-percent limit, or otherwise fails to comply with this Article.
 4. If the FIRM does not submit a timely and compliant notice, the then-current price or rate shall remain in effect for the next Contract Year.
- E. City Election Following Price-Adjustment Notice. Within 60 calendar days after receiving a timely and compliant price-adjustment notice, the City may provide written notice that it elects to terminate the Contract rather than pay the adjusted price or rate. Unless otherwise agreed in writing to facilitate an orderly transition, termination shall become effective on the last day of the then-current Contract Year.
1. The FIRM shall continue providing all required products and services through the effective date of termination and shall cooperate with the City in coordinating the transition to a replacement supplier and the removal of the supplier-owned LOSVS in accordance with Article 1.08.
 2. Termination under this Paragraph shall not constitute a default by the City. The City shall not be responsible for an early-termination charge, lost profits, unamortized equipment or installation costs, or a similar charge unless that charge is expressly stated in the Pricing Proposal Form and accepted in the executed Contract.
 3. The City shall remain responsible for payment for products delivered and services accepted through the effective date of termination and for removal costs reimbursable under Article 1.08.
 4. If the City does not provide a termination notice within the required period, the compliant price adjustment shall become effective on the first day of the next Contract Year.
- F. Other Charges and Surcharges. Except for charges expressly requested as separate items in the Pricing Proposal Form and accepted in the executed Contract, proposed prices shall include all fuel, energy, environmental, hazardous-material, administrative, regulatory-compliance, minimum-use, equipment-rental, telemetry, maintenance, inspection, delivery, and similar costs. The FIRM shall not add, revise, or invoice any surcharge or other charge that is not expressly included in the executed Contract. Any accepted separate charge shall be subject to the applicable adjustment limit in this Article and shall not be used to avoid that limit.
- G. Ten-Year Price Evaluation. For evaluation only, the City will calculate Contract Years 2 through 10 liquid oxygen and scheduled delivery costs by applying the maximum permitted annual increase of 5.0 percent. The ten-year evaluation factor applied to the applicable Contract Year 1 annual cost is 12.57789254. This evaluation assumption does not guarantee or authorize any price increase. Actual payments and price adjustments will be governed by this Article and the Pricing Proposal Form.

PART 5 – REFERENCES

5.01 REFERENCES

The following documents are included for reference and coordination:

1. Conformed Project Drawings titled Central Park Pump Station (PS No. 05) and Rockfire North Pump Station (PS No. 78) Odor Control Improvements, dated January 22, 2026. Only drawings applicable to the Central Park Pump Station and the Liquid Oxygen Storage and Vaporization System apply to this solicitation.
2. Section 44 32 00, Superoxygenation System, from the Conformed Project Manual dated February 12, 2026.
3. These documents establish the project arrangement, operating requirements, points of connection, and coordination requirements between the LOSVS and the Superoxygenation System.
4. Where the referenced documents conflict with this solicitation, this solicitation shall govern. The Proposer shall identify any conflicts, discrepancies, or required clarifications in its Proposal.