

**SCHEDULE 1
SCOPE OF SERVICES**

**BACKFLOW COMPLIANCE OFFICE DATABASE MANAGEMENT
SYSTEM CONTRACT 2144**

1. Services to Be Provided

This scope of services focuses on the ongoing support and web hosting services necessary to maintain the functionality of the database management system (DMS), as specified in Section 1.1 below, throughout the term of the agreement. The vendor shall provide the following support:

- 1.1.** Unlimited toll-free telephone and e-mail support
- 1.2.** Mini phone training sessions
- 1.3.** A one-time 3-day training workshop to be held at the Backflow Compliance Office facilities during the first year of the agreement at a time mutually agreed upon by the Backflow Compliance Office and Tokay Software, Inc. Tokay will provide one user support staff and one technical support staff for the training workshop.
- 1.4.** Technical updates
- 1.5.** Same platform version upgrades
- 1.6.** DMS software licenses
- 1.7.** Web-site hosting for the on-line submittal of up to 42,000 annual backflow prevention assembly test reports.

During the term of this agreement the DMS must fulfill the minimum functional requirements as specified below:

2. Minimum Functional Requirements for DMS

2.1. Site Information Management

- 2.1.1.** Utilize the Columbus Utilities Billing System (CUBS) database to create and regularly update an inventory of customer premises. Currently there are over 275,000 customer premises in the DOW service area.
- 2.1.2.** The inventory must be able to expand to account for water system growth.
- 2.1.3.** The inventory must be capable of storing the site address, customer name, customer account #, premise ID and multiple forms of contact information (e.g. specific individual, phone number, fax number, e-mail, etc.).
- 2.1.4.** It must also be capable of storing multiple mailing addresses that may be different than the site address (e.g. billing, owner, backflow notices).
- 2.1.5.** There must be a field available for entering notes related to the site/customer.
- 2.1.6.** A field or fields must also be provided to identify BCO inspectors who have primary responsibility for a site.
- 2.1.7.** A field should also be provided to track the political subdivision a site is within.

2.1.8. The DMS shall include 3 datasets to assist in organizing customer and cross-connection data. The first dataset shall be used for all active accounts in the CUBS database that have known cross-connection hazards. The second dataset shall be used for all active accounts in the CUBS database that have no known cross-connection hazard. The third dataset shall be used for premises with known cross-connection hazards that do not appear as an active account in the CUBS database, and therefore will not be linked to the CUBS database.

2.2. Cross-connection Hazard Information Management

2.2.1. Track the existence at a premise of known pollutional and contamination cross-connection hazards to the public water system within the Division of Water's service area and the private water system within the City of Columbus. A premise may have no hazards, one hazard, or multiple hazards. Each individual hazard must be able to be tracked independently of other hazards at a premise but linked to a customer premise. Currently there are over 21,000 premises with known hazards and over 35,000 known hazards. The database must be able to expand to account for both newly created and newly discovered hazards.

2.2.2. For each identified hazard the system must be able to capture the following information: hazard type (e.g. irrigation, boiler, etc.), protection type (e.g. containment, isolation, etc.), location description, alternate location address, if a protection device is installed, and notes.

2.2.3. Where backflow prevention assemblies are installed to protect from a known hazard the following information related to the assembly must be able to be captured: device status, serial #, manufacturer, model, type, size, installation date, and if the device is testable (yes/no).

2.3. Booster Pump Hazard Information Management

2.3.1. Track the existence at a premise of known booster pumps within the Division of Water's service area. A premise may have no booster pump, one booster pump, or multiple booster pumps. Each individual pump must be able to be tracked independently of other hazards at a premise but linked to a customer premise. Currently booster pumps are not tracked in the system. The database must be able to expand to account for both newly created and newly discovered booster pumps.

2.3.2. For each identified booster pump the system must be able to track if an acceptable pressure sustaining method is installed on the suction side of the pump.

2.4. Backflow Prevention Assembly Device Testing Management

2.4.1. Track the annual test due date for testable backflow prevention assemblies. Track the periodic (typically annual) testing of backflow prevention assemblies. Each test must be linked in the database to a device/hazard. The system must be able to capture the

following information for each test: test date, tester name, tester certification number, and test kit serial #

2.4.2. For tests on RP type devices the software must additionally be able to capture the following information:

- 2.4.2.1. Initial test – Test date; overall test pass/fail; Check Valve #1 pass or fail, and pressure differential; Check Valve # 2 pass or fail; Relief Valve pass or fail, and pressure differential; buffer between Check Valve # 1 and the Relief Valve; Outlet valve pass/fail; and proper plumbing installation pass/fail;
- 2.4.2.2. If the initial test fails, repair data – Repair date; repair notes;
- 2.4.2.3. If the initial test fails, final test - Final test date; overall test pass/fail; Check Valve #1 pass or fail, and pressure differential; Check Valve # 2 pass or fail; Relief Valve pass or fail, and pressure differential; buffer between Check Valve #1 and the Relief Valve; Outlet valve pass/fail;

2.4.3. For tests on DC type devices the software must additionally be able to capture the following information:

- 2.4.3.1. Initial test – Test date; overall test pass/fail; Check Valve #1 pass or fail, and pressure differential; Check Valve # 2 pass or fail, and pressure differential; Outlet Valve pass or fail; and proper plumbing installation pass/fail;
- 2.4.3.2. If the initial test fails, repair data – Repair date; repair notes;
- 2.4.3.3. If initial test fails, final test - Final test date; overall test pass/fail; Check Valve #1 pass or fail, and pressure differential; Check Valve # 2 pass or fail, and pressure differential; Outlet valve pass or fail;

2.4.4. For tests on PVB type devices the software must additionally be able to capture the following information:

- 2.4.4.1. Initial test – Test date; overall test pass/fail; Air Inlet Valve pass or fail, and pressure differential; Check Valve pass or fail, and pressure differential; and proper plumbing installation pass/fail;
- 2.4.4.2. If the initial test fails, repair data – Repair date; repair notes;
- 2.4.4.3. If initial test fails, final test - Final test date; overall test pass/fail; Air Inlet Valve pass or fail, and pressure differential; Check Valve pass or fail, and pressure differential;

2.4.5. For air gap inspections the software must additionally be able to capture the following information:

- 2.4.5.1. Inspection date; pass or fail; inspector/tester name, DOC certification number, and company.

2.5. Booster Pump Low Pressure Sustaining Device Testing Management

2.5.1. Track the annual test due date for testable pressure sustaining devices. Track the periodic (typically annual) testing of testable pressure sustaining devices. Each test must be linked in the database to a device/hazard. The system must be able to capture the following information for each test: test date, tester name, and test Pass/Fail.

2.6. Repair/Replacement History for Backflow Prevention Assemblies

2.6.1. Track the repair and replacement history of devices at a site. For repairs, the user defined date of repair and notes related to the repair must be stored. For replaced devices test history related to that device at that site must be retained and continue to be searchable. Replacement devices must store the user defined replacement date and notes related to the replacement, as well as be able to store the serial number of the device that was replaced so that a timeline of protection provided for a hazard can be maintained.

2.7. Approved Tester Information Management

2.7.1. Track the information used to determine the approval status of approved backflow assembly testers, track testers' approval status, track testers' address and other contact information. Specific information to be maintained for each tester includes: individual name; company name; address; phone number; fax number, e-mail address; Department of Commerce certification #; Department of Commerce certification expiration date; Backflow Compliance Office registration expiration date; City of Columbus Building and Zoning Services license number; City of Columbus Building and Zoning Services license expiration date; testing restrictions (e.g. irrigation only, none, etc.); approval status; test kit(s) serial number, manufacturer, model, last calibration date, and calibration expiration date.

2.7.2. Generate custom lists of testers for the following: testers approved to test assemblies on irrigation systems; testers approved to test assemblies on any type of system; list of testers' credential expiration dates used by the Backflow Compliance Office to determine a tester's approval status.

2.8. Web-based Backflow Prevention Assembly Test Report Submittal by Approved Assembly Testers

2.8.1. Provide on-going hosting services for the on-line submittals of up to 42,000 Backflow Prevention Assembly Test Reports per year by approved assembly testers. A web-based portal shall be provided for submittal of backflow prevention assembly test reports. The web-based portal must be capable of handling seasonal peaks of up to 7000 submittals per month. Hosting services must satisfy mutually agreeable standards for system availability, application performance, security, change management, and other service factors. Hosting services must include the infrastructure, platform, and software elements needed for the DMS.

2.8.2. Restrict web-based submittal of test reports and access to the submittal web site to testers approved by the Backflow Compliance Office. Access to the web based submittal site should be controlled by a User ID and password combination issued to the tester by or on behalf of the DOW. DOW shall have the ability to activate or deactivate, or cause to be activated or deactivated, tester User IDs/passwords within one business day of initiating the change.

- 2.8.3.** Perform automated QA/QC checks to validate or restrict the information submitted on-line and flag potential errors. Data to be validated includes: assembly serial #; minimum allowable values for pressure differentials; logical consistency of report data (e.g. overall test cannot be marked pass if Check Valve 1 is marked fail, test date cannot be after date submitted, etc.). Validation checks should be customizable by the Backflow Compliance Office. On-line submittal must have a mandatory tester certification section that testers must agree to before test may be submitted.
- 2.8.4.** During web based submittal, allow testers to suggest changes/edits to basic device data (i.e. location, serial #, manufacturer, model, type, and size). If a device is replaced the tester must be able to indicate that the device was replaced and enter the new device information.
- 2.8.5.** Transmit electronically, at least daily, suggested changes and test reports submitted on line to the Backflow Compliance Office with a report that provides the results of the QA/QC checks. Following review of the reports, the City of Columbus staff must be able to accept or reject device changes and test reports, individually or en masse. Accepted changes and test reports shall be automatically added to the database management system with each test linked to the correct device, hazard, and site. During the acceptance process the user must have the option to reschedule a test or not. Options for rescheduling must be provided such that a test can be rescheduled from the existing test due date or from the actual test date. A searchable history file of all tests submitted must be retained.

2.9. Customer Notification/Mailing Management and Compliance Tracking

- 2.9.1.** Generate custom reports for customer notification for devices that are coming up on the test-due date based on user-defined schedules (e.g. 40 days before the test due date) and for devices that are past due by a user-defined schedule. The reporting must include the ability to send or not send notices to the site address, as well as send or not send notices to alternate mailing or billing addresses. The notices must contain information for the site, the hazard, the device, and the test due date. The report should be generated in a text file format (*.txt format) with individual data fields exported to fixed width columns. The text file is used by a separate vendor as the basis for a mail merge using pre-defined document templates. The fields exported for the report are the same for the test due and the test past due notices.
- 2.9.2.** Maintain a searchable history of notices sent. At a minimum this history should include for each device the type of notice sent, the test due date, the date the notice data was exported, and the system user who exported the data. It should be possible to sort or filter the database based on a particular site, type of notice, notice date (single or range), or due date.

2.10. Reporting

- 2.10.1.** Provide a user interface that allows for searching the database and returning the information stored in the database. Some examples of the expected search capabilities are as follows: a search for a customer premise (e.g. by customer name, address, premise ID, etc.) must also retrieve all hazards at the premise as well as all test history (including future test due dates) associated with each hazard; a search for a device by serial number should also retrieve the site information and the testing information; filtering by devices with tests past-due; etc.
- 2.10.2.** Standard reports – The software must provide standard reports for basic information for the following categories: site information; site and related hazard information; site and related survey information; mailing address information; hazard information; hazard and testing information; notice status; test history; and tests not completed. It must be possible to create reports for all records, for a single selected record, or for a filtered subset of records.
- 2.10.3.** Custom reports – The software must be capable of allowing users to create basic custom reports to retrieve and display associated information from the database. Queries for complex reports that may require specialized knowledge of the database structure may be created by the offeror and saved in the DMS so that the report can be run, as needed, by City end users.

2.11. Users

- 2.11.1.** The database management software must be usable by multiple City of Columbus staff at a time. Installations and/or licenses must be provided for up to 12 users with a minimum of 10 concurrent users. The software must be capable of operating on Windows based desktops and laptops connected to the City of Columbus computer network, either by wire or wireless.
- 2.11.2.** The on-line backflow prevention assembly test report submittal must be capable of supporting multiple testers at a time. The City currently has over 430 approved testers who will require access to the on-line system. During peak season more than 5000 tests/month are anticipated to be submitted. Capacity must be provided that is mutually agreeable to the City and the vendor so that multiple testers can use the site simultaneously without undue chance of being locked out, experiencing unacceptably slowed performance, or losing data due to insufficient system capacity.

2.12. Survey Tracking

- 2.12.1.** For each premise be able to schedule and track site surveys. Surveys are investigations of water uses at a particular site, particularly focused on identifying cross-connections that could pose a pollutional or contamination hazard to the public water supply. Basic information to be tracked is: survey scheduled date; survey date, survey type; surveyor; notes

2.13. Electronic document archiving

2.13.1. The system should be capable of linking electronic documents to records in the database. For example, scanned inspection reports should be linkable to a site survey; photos of a device installation should be linkable to device/hazard records; scanned test reports should be linkable to test records.

2.14. Data Integrity and Logical Consistency

2.14.1. The database and user interface shall be structured in a manner that maintains the integrity of information entered into the system with minimal risk of inadvertently deleting or changing records. Processes for archiving and restoring data must be provided.

2.14.2. The database and user interface shall have the ability to use pick lists/pull down menus where appropriate to enter commonly used attributes into the data fields.

2.14.3. The database and user interface shall be structured in a manner that joins or relates sites, hazards, tests, and testers in a manner that allows for retrieval of associated information using logical searches of information at various levels. For example a search for a hazard should yield the site, test, and tester information related to the hazard; a search for a site should yield the hazards, tests, and testers, etc. See also Section 2.10.9 Reporting.

2.14.4. The database and user interface shall provide the ability to perform various QA/QC checks to ensure integrity of the data in the system. For example, look for testable, active devices in the system that are not flagged to have annual notices sent. Preference will be given to systems that provide flexible and robust filtering/selection tools.

2.15. The offeror shall provide training, as indicated in Section 1, to City of Columbus staff on use of the database management system. Training shall include:

2.15.1. training of qualified technical support staff necessary to install and maintain the database management system on the City's computer system;

2.15.2. training of Backflow Compliance Office field staff, primarily focused on extracting information from the system;

2.15.3. training of Backflow Compliance Office administrative staff, who use the system for extracting information, data input, data correction/maintenance;

2.15.4. training of Backflow Compliance Office management staff, who use the system for extracting information, data input, data correction/maintenance, monitoring business processes, monitoring data quality/integrity

2.16. System Support and Licensing

2.16.1. Vendors will provide on-going support services for the DMS during the term of the contract for:

2.16.1.1. Resolving technical issues related to the ability to operate the software on the City of Columbus computer system;

2.16.1.2. Assisting with limited development of custom reports and tools to support the business processes of the Backflow Compliance Office;

2.16.1.3. Providing upgrades of the system as necessary to address possible errors or inconsistencies in the operation of the software

2.16.1.4. Hosting services will continue to satisfy mutually agreeable standards for system availability, application performance, security, change management, and other service factors. Proposed hosting services must include the infrastructure, platform, and software elements needed for the term of the agreement for the proposed DMS solution.

System updates must continue to meet minimum functional requirements specified above unless otherwise approved by BCO.