



City of London Wastewater Treatment

Key Facts

Municipality: City of London

Website: www.london.ca/residents/Sewers-Flooding/Sewage-Treatment/Pages/Wastewater-Treatment.aspx

Industry: Wastewater

Products Used:

- j5 Connector for AVEVA™ Historian
- j5 Dashboards, Reports and Views
- j5 IndustraForm® Templates
- j5 Mobility
- j5 Operator Rounds
- j5 Shift Operations Management (j5 Operations Logbook, j5 Event Manager, j5 Shift Handover, j5 Standing Orders, j5 Work Instructions)

The City of London in Ontario, Canada, operates five wastewater treatment plants (Adelaide, Greenway, Oxford, Pottersburg and Vauxhall). The average daily water flow through all the wastewater treatment plants is approximately 270,000 cubic metres per day. The water flow to the plants comes from gravity sewers or force mains from thirty-six pumping stations. The wastewater treatment plants are located along the Thames River and use settling tanks to remove solids, use bacteria to consume organic material and convert ammonia to nitrates, use chemicals to remove phosphorous and use ultra-violet light to disinfect.

The Problem

City of London Wastewater Treatment previously used disconnected paper logbooks and spreadsheets to manage the vast amount of day-to-day information recorded across five wastewater treatment plants and thirty-six pumping stations. This meant that paper files were stored physically at various remote locations and that spreadsheets were stored electronically across various computer networks. Finding historical information was very difficult, and operations personnel often had to travel by car to understand what was happening at each site.

This meant retrieving and reviewing old paper logbook entries became a chore, which discouraged good communication practices across the whole City of London Wastewater Treatment operations network. To examine specific information, operations personnel had to find the appropriate paper document – which was often buried in paper files – and then scan through these page by page.

During this process, duplicate information was often found because operations personnel perceived the time spent trying to find historical records was greater than creating a new record about the same issue that required investigation.

On top of this, the use of spreadsheets by multiple users also caused numerous problems including hard-to-find spreadsheet files, multiple versions of the same spreadsheet and missing data which made it even more difficult to keep track of operations activities and understand what happened on previous shifts.

Task and work planning were also managed manually, usually by issuing verbal instructions and / or paper checklists. Day-to-day across the City of London Wastewater Treatment sites there was an overall problem of “*who did what, where, when and why?*” due to the regular use of inadequate and disconnected paper and spreadsheet communication tools.

How j5 Operations Management Solutions Solved the Problem

City of London Wastewater Treatment invested in j5 Operations Management Solutions – implemented by Hexagon partner InSource Software Solutions – to consolidate and digitize the information that was being managed and recorded across their sites in paper and spreadsheets. Operations personnel had been using these inadequate tools for numerous years and there was initial skepticism to change. However, they soon realized how easy it is to use j5 Operations Management Solutions on both a desktop computer and mobile device. This opened and encouraged communication across sites, eradicating many frustrating and unnecessary car trips.

Retrieving and reviewing historical j5 Operations Logbook entries is now quick using the filtering and search engine functionality, so even very specific information can be found easily when required. The recording of duplicate information is no longer an issue with use of digital records, enabling the “single version of the truth” concept. Operations personnel can now find any records related to the problem they are investigating with minimal effort.

j5 Operations Management Solutions has also eliminated the problems experienced when operations personnel used spreadsheets in relation to their operations tasks. There are no longer duplicate, scattered or missing spreadsheet files because the information is now recorded on a central web browser-based platform which can be accessed by multiple users simultaneously (who can even collaborate on the same j5 IndustraForm® Template in real-time using different devices across locations).

City of London Wastewater Treatment also must comply to Ontario Regulation 129/04: Licensing of Sewage Works Operators under the Ontario Water Resources Act, R.S.O. 1990, c. O.40 where there are numerous log requirements related to 19. Record-keeping re operation of facility. The use of paper and spreadsheets for these logs and record-keeping requirements made it difficult to retrieve information when required by regulators. To meet these regulations, wastewater treatment plant owners must also ensure that logs and other record-keeping mechanisms are accessible in the facility for at least two years after each entry, so that it can be easily scrutinized by the Ministry of the Environment, Conservation and Parks.

It is now easy to keep a track of operations activities across pumping stations, wastewater treatment plants and site offices. j5 Operator Rounds and j5 Work Instructions are now used to plan and manage operational checks and tasks, increasing accountability across all locations. j5 Mobility allows field and remote workers to digitally record their task progress and any safety-critical events across shifts. This allows for the quick escalation, investigation and resolution of issues across the operations team. j5 Standing Orders is also used to broadcast site-specific or site-wide operational information and safety announcements, with acknowledgements from the appropriate workers recorded and tracked.

This digitization of these key processes has also enabled a bidirectional connection to the AVEVA Historian, matching information collected during human procedures with process data collected from assets and equipment. j5 Event Manager also allows records to be created and tracked in the j5 Operations Logbook when data retrieved from AVEVA Historian is outside safe operating limits. The implementation of j5 Operations Management Solutions has allowed operations personnel at City of London Wastewater Treatment to clearly understand “*who did what, where, when and why?*” before, during and after operations shifts across forty-one locations. This is helping City of London Wastewater Treatment comply to Ontario Regulation 129/04: Licensing of Sewage Works Operators under the Ontario Water Resources Act, R.S.O. 1990, c. O.40 in relation to 19. Record-keeping re operation of facility. For example, j5 Dashboards, Reports and Views can be efficiently used when there is a request from regulators such as the Ministry of the Environment, Conservation and Parks to submit copies or summaries of the records kept. As these records are stored digitally, they can be kept indefinitely for compliance purposes.





To have the digital information that was previously managed and recorded using paper logbooks and spreadsheets at five wastewater treatment plants and thirty-eight pumping stations available at any time, at any location and in one place makes a significant difference across our operations.”

Randy Bartholomew

Supervisor III – Wastewater Treatment Operations



Benefits of j5 Operations Management Solutions

Since the implementation of j5 Operations Management Solutions there have been numerous benefits gained by City of London Wastewater Treatment. **The time saved retrieving information has led to better utilized labor hours and lower travel costs**, which alone – over time – will justify the financial cost of the implementation. These better utilized labor hours are now more efficient with operations personnel accessing information centrally. This has allowed them to respond to issues quickly and has increased safety awareness due to the higher sense of accountability associated with transparent digital records.

Operations personnel are now not worried about where the logbooks are, where to store them and who is writing in them. This allows increased focus on other more important responsibilities. Operations supervisors can monitor the tasks that remote workers are undertaking without having

to always physically go out to the field or travel to other sites. Using j5 Operator Rounds connected to AVEVA Historian during equipment rotations and inspections has made these processes more visible, with field workers provided with daily reminders and best practice guidance at the point of entry. This is particularly useful at remote sites, where operations personnel could be isolated – and as a result uninformed – when they previously used paper. With j5 Mobility they can now quickly understand the current state of the process when dealing with diverse tasks at various remote sites.

Knowledge and expertise transfer across generations has also been greatly increased, and this allows new hires to understand daily tasks quicker and allows experienced operations personnel to highlight areas for improvement in a formal and structured manner. To enhance this further, j5 Shift Handover will be used to make sure the different parts of the City of London Wastewater Treatment operation are performing as they should be day-by-day and shift-by-shift.



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