

REPLACING OPERATIONAL WORK MANAGEMENT SOFTWARE

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ABSTRACT

Goulburn Valley Water (GVW) operates 37 water treatment plants and 26 wastewater management facilities providing water and wastewater services to more than 130,000 people in 54 towns. Our operators use a couple of different work management systems (Focus and Aquantify) to capture the work done. These systems are being replaced by an Asset Management solution, Maximo.

To replace these systems with Maximo required two significant parcels of work. The first was to create the locations of all our assets in Maximo. The second was to copy the tasks that needed to be done from the old systems to the newly created locations in Maximo.

The GVW Assets team undertook the creation of the locations and within a couple of months had imported the almost 150,000 locations into Maximo. Where these locations related to treatment plants, workshops were held with operators to ensure the accuracy of the data and to begin the process of upskilling the operators in getting to know how Maximo would be structured. The input from the operators at this stage was invaluable and made the second stage of allocating tasks much more efficient.

Transferring the planned work from Focus and Aquantify to Maximo was done predominantly by the Service Delivery team. Once the tasks were in Maximo, operators played an important role in validating that the tasks were set up correctly and could actually be completed. They made sure the data could be entered, pre-set responses were appropriate and the locations were correct for the task. Their knowledge of the tasks they currently do was instrumental in helping shape what the Maximo solution should look like.

The aim is to also include as much safety information as possible into the Maximo environment so the operators can complete the data capture on a single device.

1.0 INTRODUCTION

This paper outlines the lessons learnt during the replacement of key work management software solutions with a single product, Maximo. Whilst the focus of this paper is on the impact to the Service Delivery team, the project impacts almost every GVW employee as the Maximo product reaches into most parts of the business.

With around 100 Service Delivery staff, implementing a new work management system was always going to be a large undertaking. Especially when you take into account the variety of work that is done by operators in a water authority. This work is currently captured by two software systems:

FOCUS

Used to capture reactive work, particularly by the Operations & Maintenance teams repairing the reticulation network.

Used by our Operations IT team to capture electrical and SCADA reactive and corrective work identified by the Operations teams.

Captures the data required to inform Essential Services Commission reporting.

Over 12,000 Focus cases are created each year.

AQUANTIFY

Used for scheduled work and inspections at water treatment and wastewater treatment plants.

Used by all of GVW for weekly vehicle inspections and daily mobile plant checks.

Captures all water quality data for analysis and reporting both internally and externally.

Over 500,000 Aquantify tasks are completed each year.

The concept is that Maximo will perform all of the functions currently done in both Focus and Aquantify. It is also hoped that Maximo will also be able to incorporate the safety documentation supporting all the tasks eg. Take 5's, JSEA's and other high risk work documentation. To put this into perspective, it is expected that GVW staff will complete almost 20,000 Take 5's this financial year.

The project is just about to enter the implementation phase.

2.0 DISCUSSION

To consolidate the two main work management systems into Maximo, we first had to define the workflow we would use with Maximo. This is shown in Figure 1 below.

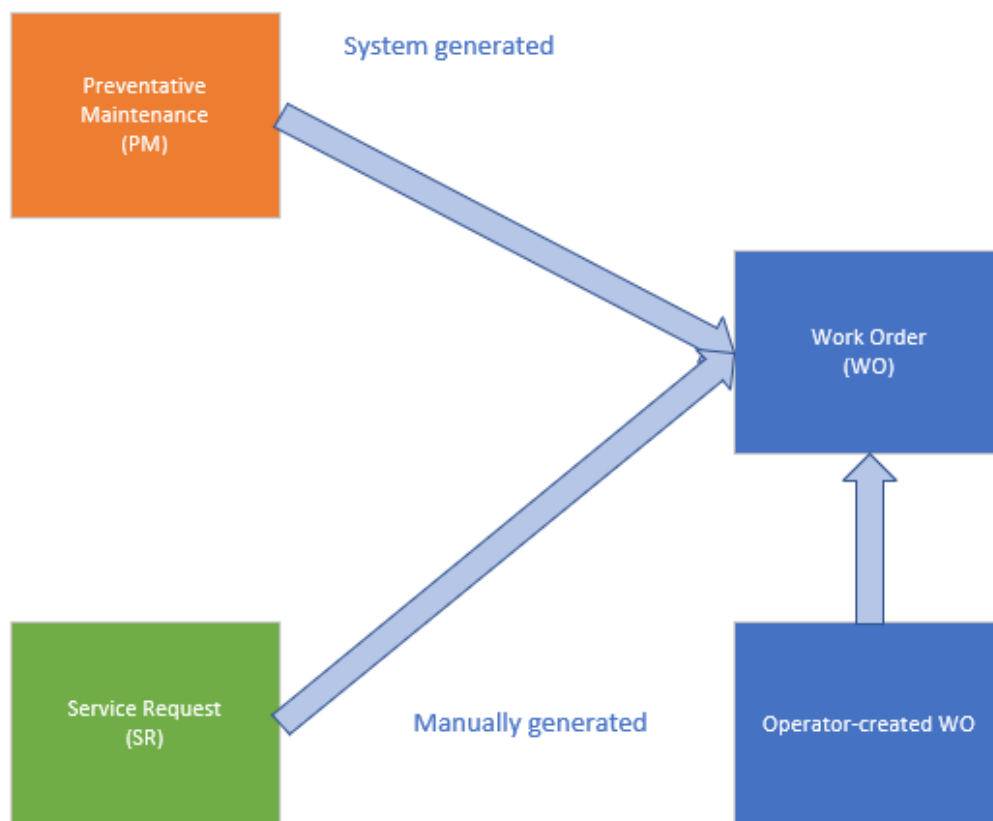


Figure 1: Maximo Workflow Process

All work in Maximo will be done on a Work Order (WO) which can be generated one of three ways. Work Orders are considered the approval by the business to go ahead and

complete that task.

2.1 Preventative Maintenance Plan

A WO can be automatically generated from a Preventative Maintenance (PM) plan. This is used for regular scheduled activities that are repeated at a given frequency (daily, weekly, monthly, etc). These activities were predominantly derived from the Aquantify software.

Typical examples of PM's that would lead to WO generation are weekly water treatment plant checks, monthly security inspections or regular dam safety inspections.



Figure 2: Planned Work - Dam Safety Inspections

2.2 Service Requests

A SR is generated by an employee to request that a job be done. This could be reactive work called in to our customer service centre ie. a sewer leak. It could also be a request from an operator who identified an issue with an asset and wants to log a job to get it repaired. These activities are currently managed in the Focus software system.

Each SR needs to be triaged by our Operations team. The SR is converted to a WO when the team are ready for the work to occur. This could be almost immediately for things like a sewer leak, or it could sit as a SR for weeks until resources are available to complete the work.

The key reason behind this step is to ensure WO's are treated as the work that needs to be done now. Anything that's waiting or not urgent, can sit as a SR until the business decides it is time to complete that request. This simplifies work for the operators because they will almost exclusively only deal with WO's. The expectation being that if you have a WO on your tablet, then that is what you are expected to do that week.



Figure 3: Reactive Work - Sewer leak repair

2.3 Operator-created Work Order

In certain circumstances, GVW will allow a limited number of Operational staff to bypass the SR process and go straight to generating a WO. This would be restricted to circumstances where the person needs the work done soon and they would also be the person converting a SR to a WO.

2.4 Maximo Location Structure

For Maximo to work effectively, a location for every one of our assets needed to be created. Maximo handles this with a simple drill-down function. Each WO is then associated with a location so a record of work performed is captured for future analysis.



Figure 4: Location Drill Down structure

2.5 Key Challenges

The two key challenges in implementing Maximo have been the creation of the locations and the transfer of work activities. Both of these activities were automated as much as possible but still required a lot of manual review. This is where the knowledge of the operators became invaluable as they know their plants better than anyone and also know what work they currently do.

2.6 Project Status

The project is planning on rolling out Maximo late in the first quarter of 2024. It will be a phased roll out, starting with simple PM-generated work orders. This will provide us further opportunities to test our processes and refine the training to ensure when the full system is operational, all staff understand how to operate the system.

3.0 CONCLUSION

Maximo is a powerful work management tool that should simplify how GVW work by consolidating multiple software systems into a single system. The key to success is understanding how Maximo works and building the architecture accordingly. Getting the locations and assets structured correctly then allows the scheduled and reactive work to be easily assigned.

Involving the operators who do the work in the testing phase is critical to ensuring the final design of the work packages is correct and efficient.

4.0 ACKNOWLEDGEMENTS

To the project team for their dedication to working through the many thousands of inputs that have been required to set Maximo up.