MARCHMENT HILL
- consulting -

2018 Civil Maintenance Process Benchmarking Study for Australian Urban Water Retailers

engagement profile

the challenge

Our client group or participants, a number of Australian urban water retailers, had previously taken part in MHC's Civil Maintenance Process Benchmarking Study comparing metropolitan and regional water utilities' cost, service and productivity performance across a range of civil maintenance activities.

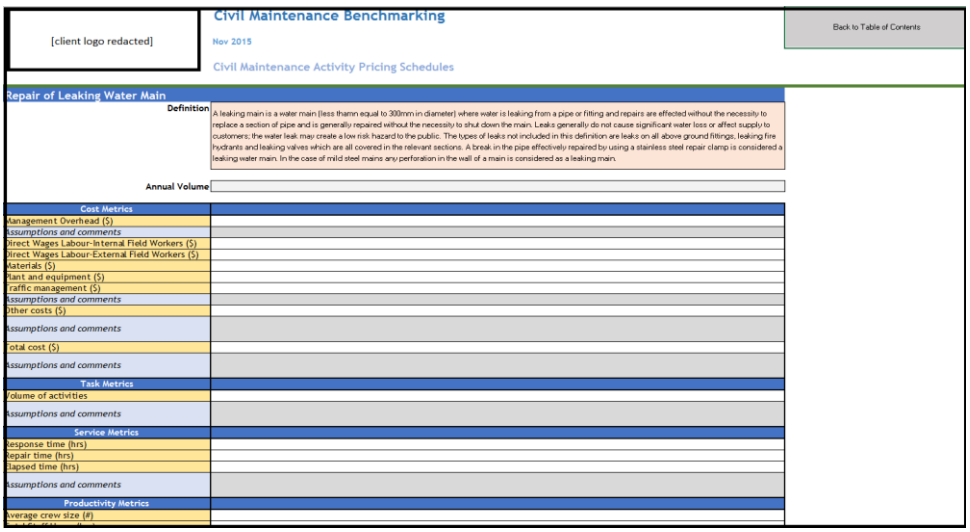
All of the participants had undergone some organisational structure and operating model changes since they had last participated in this study, and were keen to participate in the 2018 program to gauge the current cost and service level performance of their civil maintenance workforce and identify trends in their performance.

what Marchment Hill did

In addressing our client's challenges, MHC utilised two important tools to develop impactful and streamlined benchmarking outputs: i) Activity Datapack, and ii) Benchmarking Engine.

Activity Datapack

To facilitate consistent and accurate data gathering from our client, MHC used an Activity Datapack, as shown in Figure 1 (which was automatically inputted into the Benchmarking Engine). The datapack defined each benchmarked activity's scope and the relevant, cost, service and productivity metrics, providing fields for data population. From our client's perspective, the datapack empowered them to gather accurate data from their organisation through a reasonably streamlined process with minimal disruption.



[client logo redacted]

Civil Maintenance Benchmarking

Nov 2015

Civil Maintenance Activity Pricing Schedules

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Repair of Leaking Water Main

Definition: A leaking main is a water main [less thamn equal to 300mm in diameter] where water is leaking from a pipe or fitting and repairs are effected without the necessity to replace a section of pipe and is generally repaired without the necessity to shut down the main. Leaks generally do not cause significant water loss or affect supply to customers; the water leak may create a low risk hazard to the public. The types of leaks not included in this definition are leaks on all above ground fittings, leaking fire hydrants and leaking valves which are all covered in the relevant sections. A break in the pipe effectively repaired by using a stainless steel repair clamp is considered a leaking water main. In the case of mild steel mains any perforation in the wall of a main is considered as a leaking main.

Annual Volume

Cost Metrics
Management Overhead ($)
Assumptions and comments
Direct Wages Labour-Internal Field Workers ($)
Direct Wages Labour-External Field Workers ($)
Materials ($)
Plant and equipment ($)
Traffic management ($)
Assumptions and comments
Other costs ($)
Assumptions and comments
Total cost ($)
Assumptions and comments
Task Metrics
Volume of activities
Assumptions and comments
Service Metrics
Response time (hrs)
Repair time (hrs)
Elapsed time (hrs)
Assumptions and comments
Productivity Metrics
Average crew size (#)

Figure 1: Actitivty Datapack format for Repair of Leaking Water Main (similar for all other maintenance activities)

Benchmarking Engine

Over years of benchmarking water and electricity utilities, MHC has accumulated a wealth of data which defines efficiency in cost, effectiveness in service and productivity, and a range of best practices to achieve these levels. These are stored within our Benchmarking Engine, a tool which currently contains 3,000 data points from over twenty-five (25) water participants for the following reactive and planned civil maintenance activities.

Reactive Maintenance	Planned Maintenance
• Repair of Burst Water Main • Repair of Leaking Water Main • Repair of Main Taps • Repair or Replace Stop Tap • Repair of Water Service • Repair of Hydrant • Emergency Clearance of Sewer Main Blockages	• Replacement of Access Hole Lid • Cleaning of Pump Wet Well • Root Cutting / Jetting of Sewer Main • Raise / Lower Access Holes

Our client group required important peer group and trending performance comparisons. These included comparisons to a desired peer group and industry group based on characteristics such as metropolitan versus regional utility, and geographical location. Our data spans 7 years, so trending insights for multi-program participants could be provided.

This Benchmarking Engine was a critical component of the delivery for our client group, particularly being able to undertake an efficiency and effectiveness comparison to a metropolitan peer group in 2018, and gauge current cost and service level performance delivered by their own maintenance workforce, and trends given their organisational changes.

Figures 2 and 3 show example graphical outputs from the *Benchmarking Engine* (note that the values shown are for illustrative purposes only).

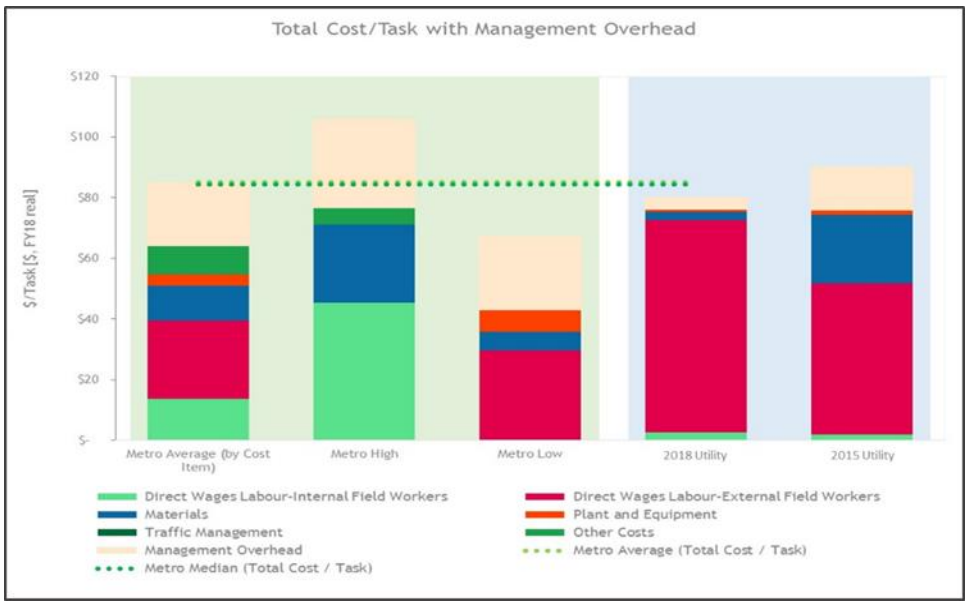

Figure 2: Example chart for total cost per task comparison between utility and industry averages (cost charts with or without management overhead are typically provided)

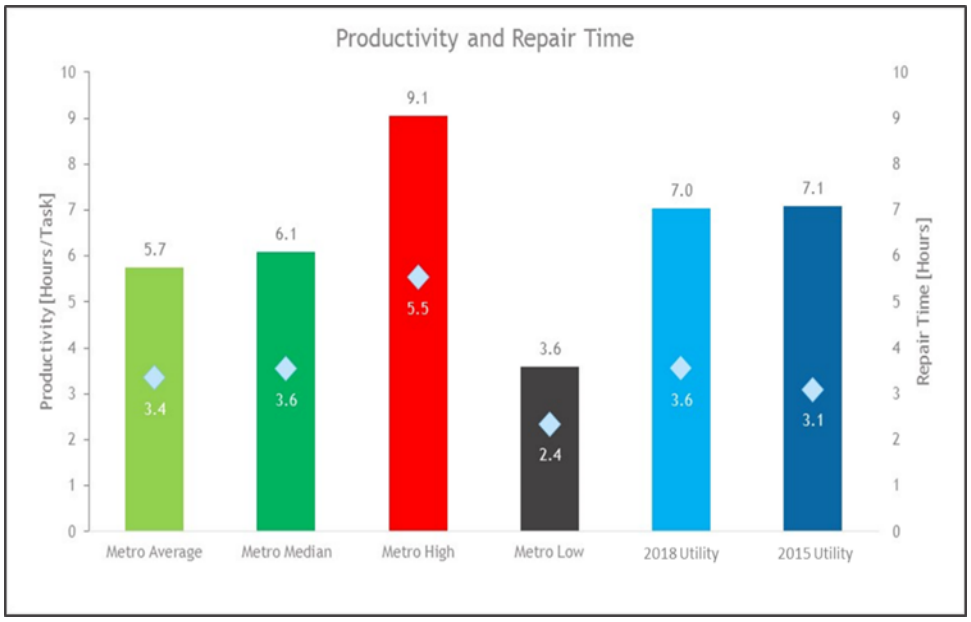

Figure 3: Example chart for productivity comparison between utility and industry averages (typically measured in relation to the time taken to complete a repair)

Program Outputs

Information gathered from the benchmarking exercise was delivered to our client in an *Industry Benchmarking Report*, which detailed our client group's cost, service and productivity performance against the current state of the industry. This report also provided a list of industry best practices in relation to crewing, delivery model, plant & equipment, work techniques and technology.

the benefit

Through our study, all members of our client group were able to realise three key benefits:

1. Quantify their current cost, service and productivity performance, and trends in performance since they had implemented their organisational structure and operating model changes;
2. Clarify future cost, service and productivity targets; and
3. Identify best practices applicable to their civil maintenance workforce.

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