The 2012 Queensland Urban Water Industry

Workforce Composition Snapshot

Contents

is a business unit of the Institute of Public Works Engineering Australia Qld Division (IPWEAQ) and an initiative of Institute of Public Works Engineering Australia QLD Division Inc , Local Government Association of QLD, Local Government Managers Australia and the Australian Water Association.

This document can be referenced as the ***'Queensland Urban Water Industry Workforce Snapshot 2012'***

1 Introduction

A "consistent voice" for the industry has proved invaluable, particularly in providing demand information to the education and training sector, and in attracting government funding support for training places.

1.1 Queensland Urban Water Industry

As of January 2013 in Queensland there are approximately 72 standard registered water service providers excluding small and private schemes. These organisations constitute the scope of this report.

- 62 are local governments outside South-East Queensland (SEQ), 17 of these utilities are indigenous councils including two Torres Strait Island councils and 15 Aboriginal councils.
- There is a single council-owned corporation for the Fraser Coast Region.
- The distribution/sewage collection and retail services of seven of the ten SEQ councils are managed by two statutory authorities, owned by the councils.
- The remaining three SEQ councils are directly responsible for distribution/sewage collection and retail services.
- There are also two very large, state-owned entities responsible for bulk water supply and transport (along with treatment in SEQ and limited other areas of the state) and an additional two state-owned commercialised statutory authorities (Water Boards) operating in Mount Isa and Gladstone.

Some of these organisations outsource part of their operations to private companies.

Over the past few years, both ***qldwater*** and various national bodies have conducted studies to quantify the number and types of roles within the water industry. The 2010 report was an important step in analysing Queensland water industry workforce trends, however capturing quality data remains challenging. Analysis of issues like attraction and retention, competition from other industries and labour shortages is largely based on anecdotal information as a result. Irrespective, it is widely recognised that the Queensland water industry faces a number of unique challenges in relation to its workforce.

In order to monitor these trends in the industry, ***qldwater*** (through the Queensland Water Skills Partnership) intends to publish a Snapshot Report approximately every two years.

1.2 The Queensland Water Skills Partnership

The Queensland Water Skills Partnership was created in 2011 to continue the important workforce development and skills work that was initially developed through the Water Skills Formation Strategy (SFS) which concluded in December 2011. Over the course of the two year SFS project a number of significant achievements were made and importantly, it was the first mechanism for the broader urban water industry to collaborate on skills and workforce development projects. A "consistent voice" for the industry has proved invaluable, particularly in providing demand information to the education and training sector, and in attracting government funding support for training places.

Some of the key project successes during the first two years of the Queensland Water Skills Partnership include:

- Membership and direct investment from some 21 water service providers allowing the development of projects and networks across four key themes:
    - Industry Branding
    - Training and Education
    - Workforce Capability
    - Policy and Partnerships
- Successful application for Strategic Investment Funding from Skills Queensland for $600,000 to fund direct training places along with a number of other grants to support training places;
- Short course training workshops trialled in three regional locations;
- Regional collaboration for other short courses;
- Development of an online Introduction to the Urban Water Industry Course, freely available on the ***qldwater*** website along with a separate version specifically targeted at a high school age audience;
- Development of an online Urban Water Industry Legislation Course freely available on the ***qldwater*** website;
- Regular industry relevant skills and training updates through Skills Partnership e-flashes;
- Queensland representation on all key national skills groups and projects.

An Industry Leaders Group made up of high level representatives from water organisations across the state sets the strategic direction for the Water Skills Partnership.

The 21 members of the Partnership range from small local Councils to very large Council-owned distribution/ retail entities and a state bulk entity and membership has steadily increased from the first to second year of operation. Members at January 2013 are detailed in the "Primary National/ State Water Skills Linkages" chart at the back of this publication.

1.3 Key Differences between the 2012 and 2010 Snapshot Documents

- Not all of the organisations surveyed for workforce demographic data in 2010 were able to participate in the 2012 study, and some new organisations were added. These are noted where relevant including the perceived impacts on survey analysis by having more large organisations.
- There is no new data on numbers of water employees in this report. Instead the strong correlation between workforce size and number of household connections demonstrated in the 2010 report is used as a proxy. In future, it is intended to capture numbers of water employees on a regular basis through ***qldwater***'s Statewide Water Information Management System.
- A number of job role categories have been changed to allow easier future alignment with proposed national changes to Australian and New Zealand Standard Classification of Occupations (ANZSCO) Codes.
- While many Figures presented are similar in structure to those represented in the 2010 report, there has been an attempt to aggregate some data and provide comparisons between the two reports, with a view to providing longer term trends in future reports.

2 Size and Scope of the Queensland Water Industry

Around 6,000 employees deliver the state's crucial water and wastewater services.

2.1 Section Summary

This section summarises available information on the size of the water industry in Queensland, taking into account Local Government, Government-owned utilities, bulk water providers and private entities providing contracted staff or a wholly outsourced function.

In 2010, ***qldwater*** conservatively estimated the total size of the industry to be 5500 employees excluding an average vacancy rate of up to 10% and further excluding contractors. These figures were consistent with estimates for the national water industry (WSAA 2008). While there has been some rationalisation in larger organisations (including SEQ bulk water providers merging into a single entity), the wind-up of Allconnex Water and changes at a number of regional service providers, there is little evidence to suggest a substantial change to these estimates.

2.2 Background

The Queensland Water Industry Workforce Composition Snapshot 2010 enabled the industry to validate many of the assumptions that had been made in the past, showing for example the impacts of the ageing workforce and pressure on certain occupation categories. This report was well received by both industry and government and the contextual information it provided proved to be invaluable in arguing the case for skills and training support funding.

In late 2012, ***qldwater*** began a data collection process to gather the information required for the second Snapshot Report. It is intended to publish Snapshot Reports every two years to gauge changes in the industry workforce composition and monitor trends.

2.3 Total Size of the Queensland Urban Water Industry

The following table summarises the number of employees working in each of the larger organisations making up the broader Queensland Water Industry.

Table 1: Size of major employers in the Queensland Urban Water Industry (within report scope)

Business	Estimated Size of the Workforce
Total SEQ local government-owned employers (3 council service providers, Queensland Urban Utilities, Unitywater)	2,785 employees
Local Government service providers outside SEQ	1,900 employees
Bulk water providers	1,111 employees
Private and other organisations	100 employees
Gladstone and Mt Isa state-owned water boards	70 employees
TOTAL	**5,966 (including vacancies)**

2.4 Geographic Coverage

Figure 1 shows both the location of water supply schemes in Queensland as well as the number of properties connected within those schemes. The 2010 Workforce Snapshot demonstrated a high correlation between the number of employees in council water utilities and number of connections. The data received from survey participants in 2012 is consistent with this correlation.

Water and sewerage services are managed very differently across Queensland, compared to most other Australian jurisdictions. The figure clearly demonstrates large geographic separation and a lack of large inland regional centres and this contributes to delivery challenges reflected in the employment market and in delivery of new skills to existing employees.

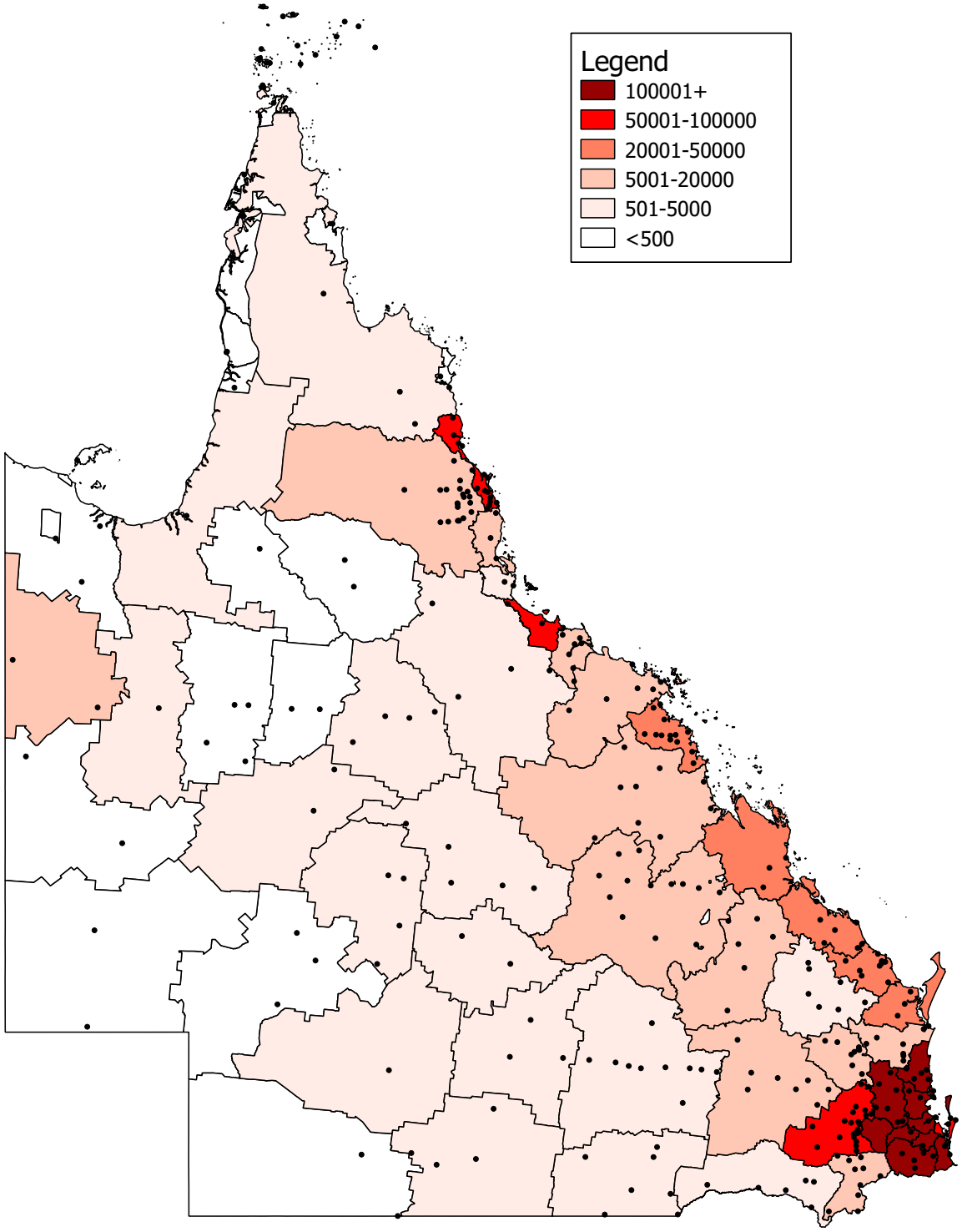


Figure 1: Water Supply Schemes and Property Connections by Local Government Area

3 Internal Analysis: Workforce Statistics

Water utilities have a male-dominated workforce with a high average age. Water operators, trades and construction and maintenance staff make up over half of staff in the industry.

3.1 Section Summary

This section sets out the current workforce of participating water utilities in terms of job family, age and job roles and compares the 2012 data to the data in the 2010 Snapshot Report.

3.2 Background

The data gathering stage used a modified version of the 2010 Snapshot Report data collection instrument. The original job category/roles list was updated to more accurately reflect roles within the water industry and in particular, focus on the job titles and roles identified through the Water Services Association of Australia (WSAA) Workforce Development Project which was submitted to the Australian Bureau of Statistics for inclusion into the Australian and New Zealand Standard Classification of Occupations (ANZCO) codes in mid-2012.

The demographic survey / data collection instrument was distributed in October 2012 to Water Service Providers and bulk water entities across the state to collect information on job roles, number of employees, age, gender, turnover rates and qualifications held. A total of 10 responses were received from small, medium and large local government providers, SEQ government owned entities and bulk water providers. Responses were received from service providers covering a range of sizes and the 2353.3 employees represented by the respondents reflect approximately 39% of the Queensland water industry workforce.

The organisations that responded to the survey were:

- North Burnett Regional Council
- Banana Shire Council
- Central Highlands Regional Council**
- Gladstone Regional Council
- Toowoomba Regional Council**
- Mackay Regional Council
- Cairns Regional Council**
- Gold Coast City Council**
- Seqwater
- Unitywater

****New in 2012. Organisations unable to participate in 2012 which were respondents in 2010 – Wide Bay Water Corporation, Longreach Regional Council, Balonne Shire Council, Murweh Shire Council.**

It is important to note that the 2010 report separated data for local government and the State-owned bulk entities in SEQ. Throughout the 2012 report, these data have been aggregated and where possible compared to aggregated data from 2010 to reflect trends.

3.3 Job Family/Role (2012 and 2010)

Figure 2a and 2b represent the proportion of the workforce employed within each Job Family in 2012 and 2010, respectively.

Collectively, the Water Operators roles comprised 40% of the total water industry workforce in 2012 with the majority coming from the Water Operations – Civil job family/role (26%). This figure is similar to the 2010 data in which Water Operators comprised 36% of the workforce. In comparing the two figures, note that the job family 'Water Industry Operators' in the 2010 figure comprises construction and maintenance and plant operators for water and wastewater, in the 2012 figure these roles have been separated and an additional job family was created for Water Operators – Dam (data on dam operators was not collected in the 2010 report).

The proportion of the workforce employed in trades roles reduced from 19% in the 2010 data to 12% in the 2012 data with a number of other variations across job roles. This likely reflects the difference in workforce composition between the organisations which responded in 2010 as against new organisations in 2012, rather than a specific workforce trend. Longitudinal analysis will always be difficult in the absence of regular, comprehensive data capture.

While a shortage of engineering skills is an often-reported issue in Queensland, the data confirms that engineers represent a relatively small proportion of the workforce.

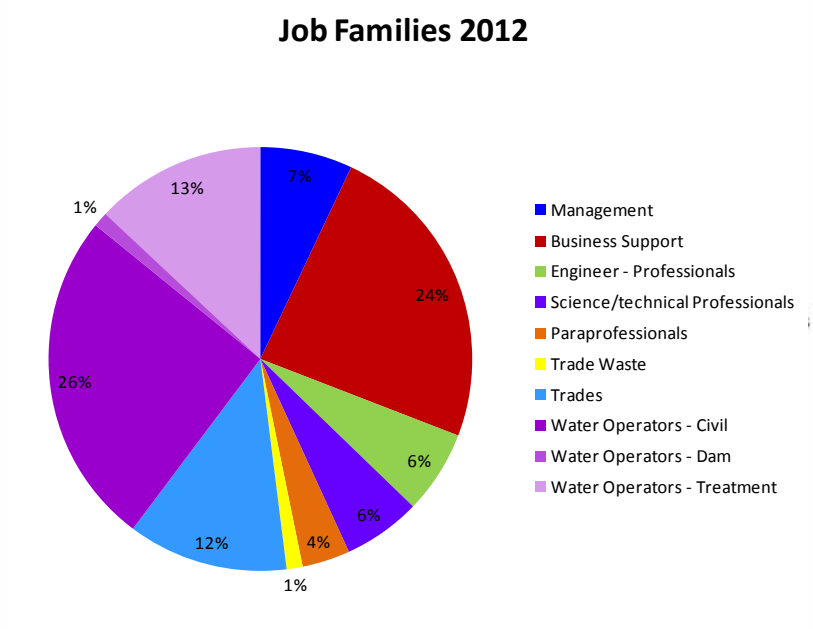


Figure 2a: Proportion of the workforce employed in each Job Family 2012 n = 2362

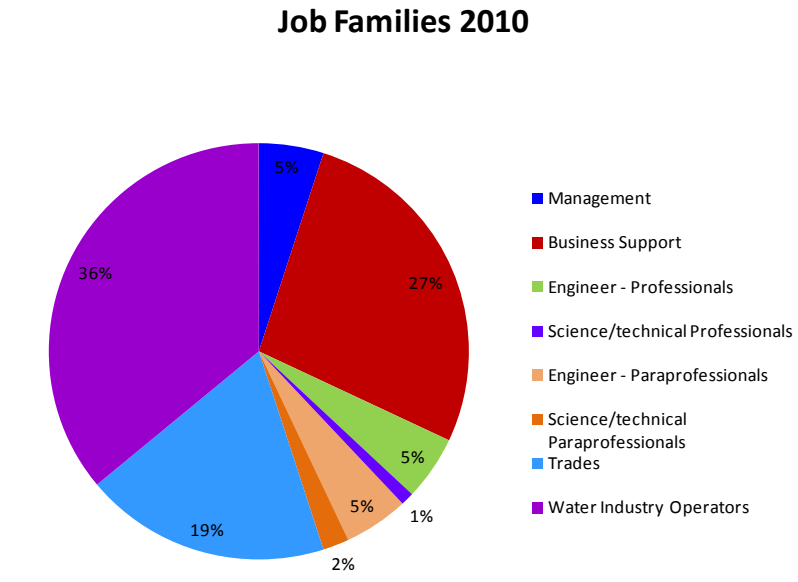


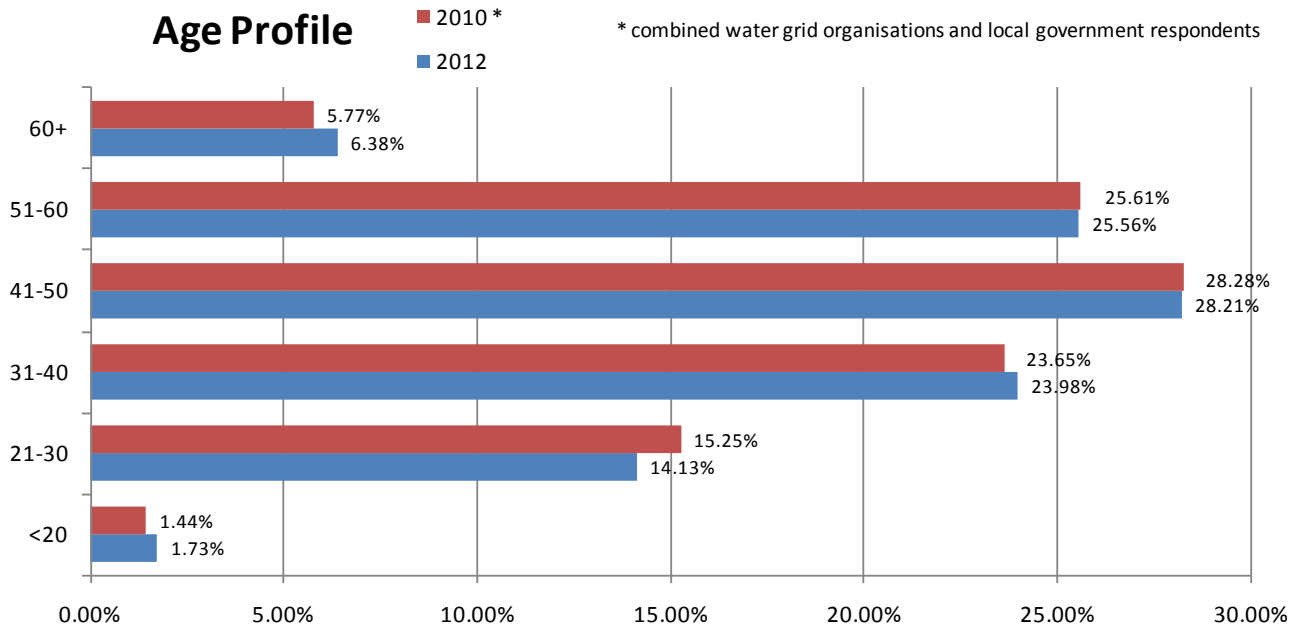
Figure 2b: Proportion of the workforce employed in each Job Family 2010 n = 1463

3.4 Age

In comparison to the Age Profile data in the 2010 Snapshot Report the Age Profile in 2012 is largely unchanged. There is, for example, a marginal increase in the 60+ category. As this is the typical retirement period with a naturally high turnover, a result like this could be interpreted as a signal in relation to retention of older workers. However, the only way to present a confident analysis would be to consider quality turnover data, captured at the same time each year. Most organisations struggle to report in this way.

A national report by the Department of Education, Employment and Workplace Relations (DEEWR – n.d.) estimated that in the 2009 more than two in five workers (44.0 per cent) in the Electricity, Gas, Water and Waste Services industry were aged 45 years and over compared to the all industries average of 38.5 per cent. In addition, their report stated that the Australian Electricity, Gas, Water and Waste Services industry has a below average share of younger workers aged 15 to 19 years (2.2 per cent) and 20 to 24 years (8.6 per cent).

Figure 3: 2012 Age profile of Queensland Water Industry in comparison to 2010 Snapshot Report



The 2012 Snapshot Report data, in line with the 2010 data, demonstrates that within the water industry in Queensland the majority of employees reported in the survey are 41 years or older (60.39%) with over half of those (32% of total workforce) older than 51 (Figure 3). While the age brackets in the DEEWR report differ to those captured in the Queensland 2012 data and trend mapping is imprecise, the industry in Queensland indicates an older age profile than represented by the DEEWR data. At the younger end of the scale, both the Queensland 2012 and 2010 surveys demonstrate some correlation with the Electricity, Gas, Water and Waste Services data, which reflects substantially fewer younger workers than the All Industries data.

3.5 Age Profile and Job Role

Figure 4 represents the different job roles in the water industry and the full time equivalent employees who work in each role, broken into age categories.

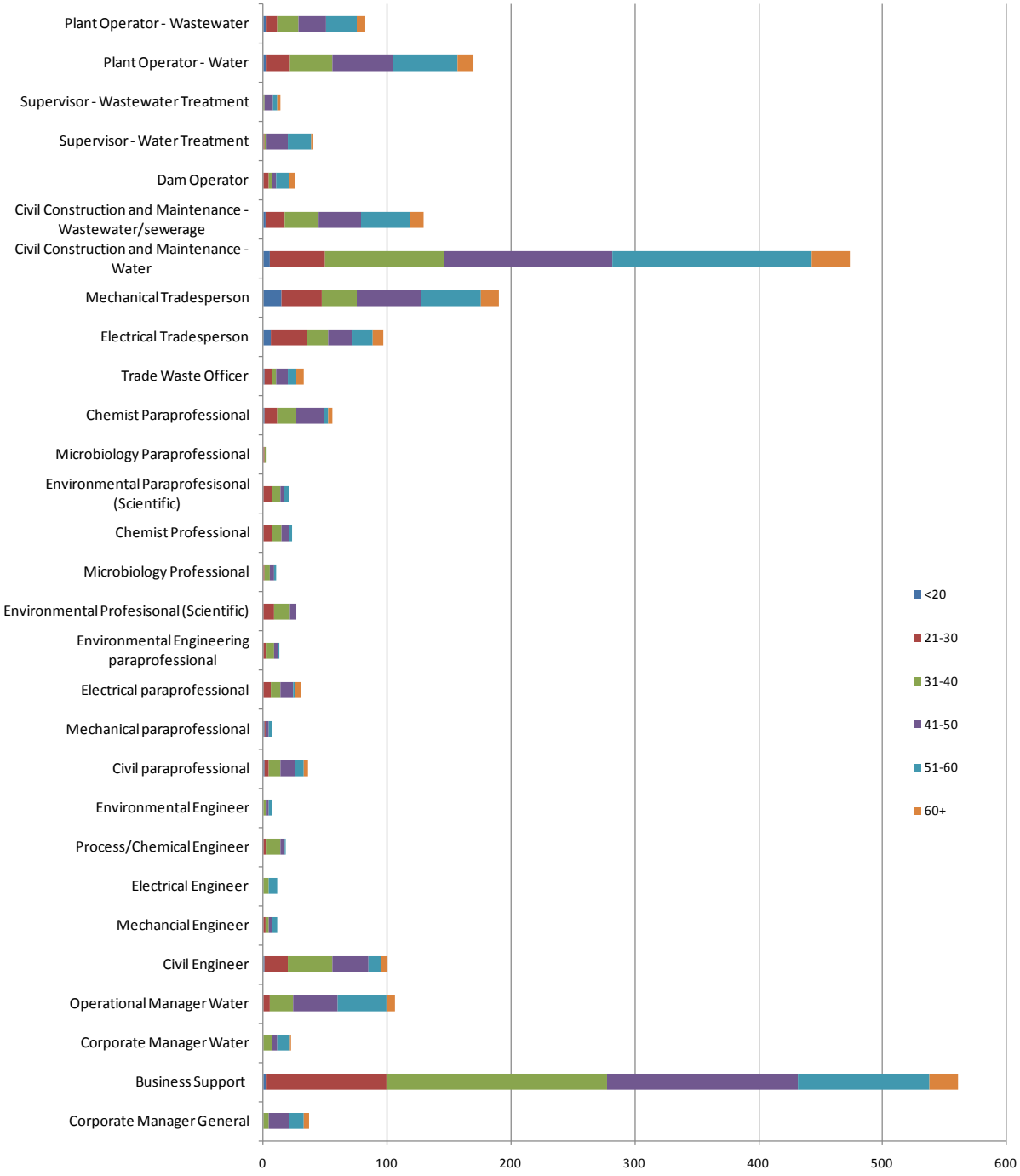


Figure 4: Age Profile by Job Role

As previously stated, these roles have been slightly amended from the initial 2010 report to better reflect those defined in the WSAA Workforce Development Project ANZSCO Code submission. "Business Support" clearly has the largest number of staff reflected in the 2012 data, and this figure represents a variety of different job roles whereas the other job role definitions are more specific.

As shown in Figure 2a, the Water Operators – Civil role actually makes up the largest job family in the industry, however, this has been broken down further in Figure 4 to separate out the Water and Wastewater roles. (Many of those working within Water Operations – Civil actually work across both water and wastewater roles, hence the breakdown between these divisions was estimated by most respondents).

Notably, 40.3% of employees in these civil roles are over the age of 51, suggesting a small demographic change in these roles since the 2010 report (37%) and further indicating that the number of staff within these roles who are moving into retirement is increasing.

Skills, experience and education terms – a more detailed consideration of some occupations

Water Skills Partnership Members and the Industry Leaders Group were asked to consider a range of standard "skills, experience and education terms" (SEET) for Job Roles. Put simply, for this report, these terms are "the number of years required for adequate skilling for proficiency in the role (including obtaining a qualification)" and the intent was to apply the terms to job roles to further analyse the impact of factors including the ageing workforce. Terms were applied consistently across the industry respondents and ranged from 15 years for senior Corporate Manager roles to three years for roles like Business Support and Civil Construction and Maintenance. Figure 5 clearly demonstrates that these latter roles make up almost half the workforce, however their size potentially distracts attention from other roles which may be more specialised, or otherwise more difficult to replace. The "skills, experience and education terms" attempt to redress any imbalance.

In summary, the following job roles should be monitored in future studies and carefully considered by employers and the broader industry in workforce planning and development. Analysis of the data provided suggests potential skills shortages to support these job roles based on age factors, on an industry-wide basis.

Job Role	Total Employees	51-60	60+	Commentary
Corporate Manager General	36.75 (1.56% total workforce)	12	4	43.5% of the employees in this role are older than 51. When combined with a SEET of 15 years, it is clear that replacing these employees either creates a substantial upskilling requirement, "borrowing" staff from other job roles (e.g. technical people moving into management), or need to recruit externally. While the available sample cannot be used as a surrogate for supply in market terms, the trends for known specialised roles with specialised qualifications will be important to monitor.
Corporate Manager Water	22.5 (0.96%)	10	1	The very high proportion of employees in the 51-60 age group may suggest potential risk, when combined with a SEET of 12. The two age categories combined make up 48.9% of the total employees allocated to this job role.
Operational Manager Water	106 (4.5%)	39	7	The very high proportion of employees in the 51-60 age group suggest a potential risk, especially combined with a SEET of 10. The two age categories combined make up 43.4% of the total employees allocated to this job role.
Electrical Engineer	11 (0.47%)	7	0	While a specialised role with small numbers, the number of employees in the 51-60 age group make up 63.6% of the total employees for the job role, with a SEET of 6.
Trade Waste Officer	32.5 (1.38%)	6.5	6	The two age categories combined are 38.5% of the total employees for the job role, with a SEET of 5. The number of employees in the 60+ age group represents one of the highest proportions for this age group across any job role. This is typically a specialised council / utility role meaning it seems logical to conclude that there is a shortage of these skills. Certainly the industry has recently established a Certificate IV VET training program aimed at upskilling supporting the idea of a shortage.
Dam Operator	26 (1.1%)	11	5	The two age categories combined are 61.5% of the total employees for the job role, with a SEET of 3. The number of employees in each of the two age groups represents some of the highest proportions for the age groups across any job role.
Supervisor Wastewater Treatment	14 (0.59%)	4	2.5	The two age categories combined are 46.4% of the total employees for the job role, with a SEET of 5. The number of employees in the 60+ age group represents one of the highest proportions for this age group across any job role. There is however a logical skilling pathway (from wastewater treatment operators).

3.6 Comparison of 2012 and 2010 Snapshot Report Data and WSAA study workforce statistics (gender breakdown)

Figure 5 compares the statistics of the 2012 Snapshot Report data, the 2010 Snapshot Report data (combined figures for Water Grid and Local Government) and the 18 water utilities surveyed in a Water Services Association of Australia (WSAA) 2008 study.

In the WSAA study the total headcount of these water utilities was 56% of the total estimated WSAA workforce. For the 2012 and 2010 data 2363 and 1463 full time equivalent employees were captured, respectively.

The 2012 data supports both the 2010 report conclusions and anecdotal evidence that the water industry is male-dominated with males continuing to represent the majority of the workforce (76.72% in 2012).

The 2012 data suggests a possible increase in women in engineering professional roles since the 2010 report (a move from 0.42% to 1.55%). Similarly, there has been an increase in the number of women in both Science/Technical Professional and Science/Technical Paraprofessional roles. There has also been a small increase in the number of women in Water Industry Operator roles, from 1.56% of the surveyed workforce in 2010 to 3.84% in 2012. As previously noted, the different participating organisations could be influencing these results. There remains a clear opportunity to attract women to "non-traditional" roles, including Water Operators.

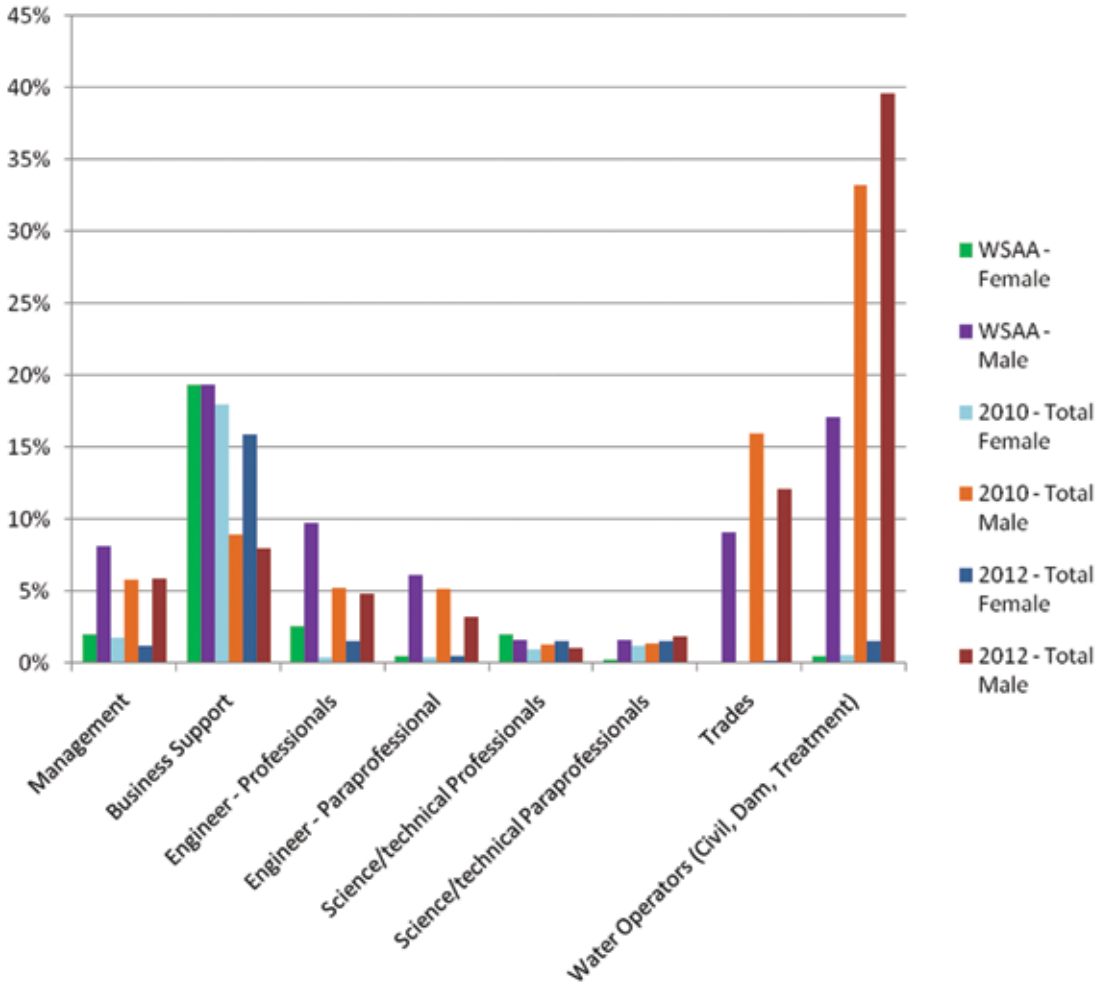


Figure 5: Number of employees in each job family as a % of total workforce – comparison of 2012 Snapshot data, 2010 Snapshot data and WSAA Survey.

3.7 Job Categories and Qualification Levels

Figure 6 compares the highest level of qualification achieved for each of the job categories surveyed. The results in this figure represent a subset of the total survey responses (n = 700) as not all participants were able to source qualifications data. The results confirm that the majority of employees in professional roles such as Engineers, Managers and Science/Technical Professionals hold at minimum a Bachelor Degree. Treatment Plant Operators predominantly hold Cert III-IV level qualifications, reflecting the anecdotal advice that Cert III is considered the accepted minimum standard to which all such operators should be trained. While the proposed national certification framework for drinking water treatment operators (National Water Commission - released late 2012) provides for a range of qualifications determined by an assessed risk/ complexity of plant and drinking water systems, it too would require Cert III as a minimum in most cases. Exceptions include small and remote systems which may have no or limited treatment, and the survey did not capture data from these providers. Treatment Plant Operators are almost equally as likely as employees in Trades roles to have attained a minimum Certificate III level qualification.

The survey results also reflect the growth in Water Industry Operators - Civil Certificate II and higher level qualifications. Almost 25% (24.4 %) of those in the survey sample had attained Certificate I or II qualifications. With the exception of some existing civil construction package courses, this qualification was effectively offered for the first time in Queensland in 2009 through ***qldwater***'s Water Industry Worker Program. Industry-wide, over 200 people have completed either Certificate II or III qualifications through this program, with Certificate IV and Diploma variations currently underway.

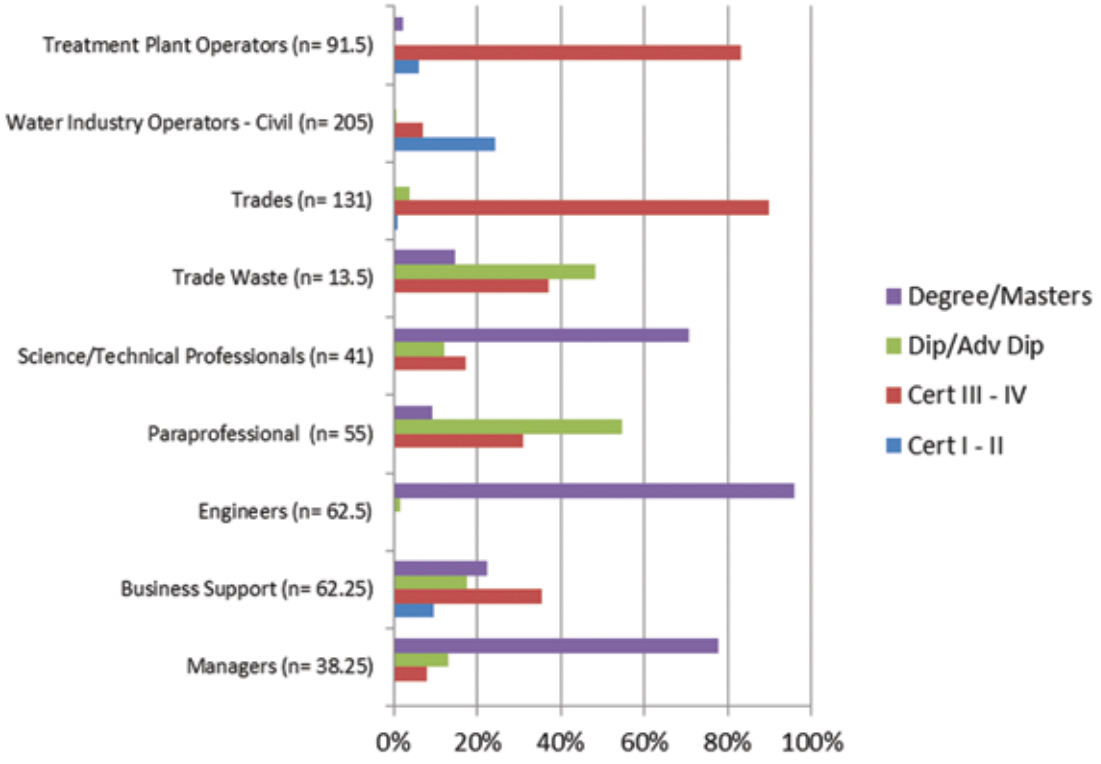


Figure 6: Highest qualification achieved by job category

3.8 Outsourced roles

The Industry Leaders Group of the Queensland Water Skills Partnership determined that for this iteration of the Snapshot Report it would be important to capture a measure of the number of roles traditionally performed in-house that are now undertaken by outsourced staff, with a view to establishing a baseline and then monitoring any trends in future snapshot surveys.

While limited demographic data was available on these roles and the data on outsourced roles has not been included in any previous analysis, the 2012 estimates provided are of interest. Figure 7 shows the number of outsourced roles in the industry in comparison to the total number of internal roles. Of all the job roles surveyed, Managers had the highest percentage of outsourced roles with 32 outsourced roles followed by engineers (27 outsourced roles), and Treatment Plant Operators (50 outsourced roles).

These figures indicate that outsourcing of roles is common in the industry, in particular for the more highly qualified roles and roles requiring specialist skills. The proportion of engineering roles outsourced (15.49%) is potentially lower than would be expected based on industry feedback about the difficulties of recruiting and retaining these staff. Trends for these key roles will be important to monitor in future studies.

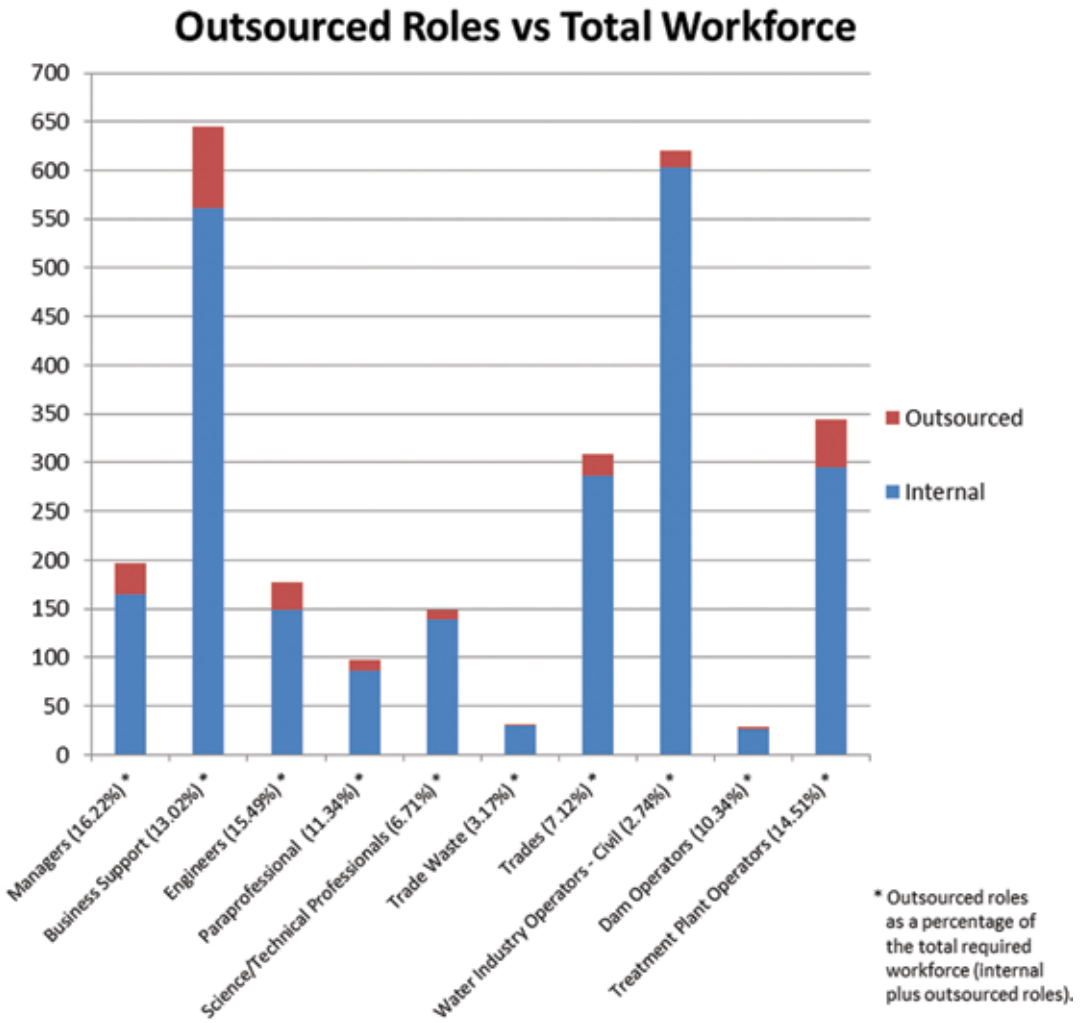


Figure 7: No. of outsourced roles compared to in-house roles

4 Conclusion and Recommendations for Future Reports

The 2010 Queensland Water Industry Workforce Snapshot Report confirmed for the industry many of the assumptions and anecdotal assessments regarding the state of the Queensland Water Industry workforce. Since the publication of the report, the industry has continued its commitment to addressing the future issues that the industry is set to face, such as the ageing workforce, through investment in collaborative programs such as the Queensland Water Skills Partnership. This is critical for a sector which continues to have a median employee age higher than that that of the general workforce and is facing the challenges of promoting the workforce as both an industry of choice for potential employees and also retaining the current employees that are crucial to the ongoing provision of such an essential community service.

'Hands-on' roles such as Water Operations (Civil, Treatment, Dams) and Trades, together make up more than half of the Queensland water industry workforce (52%). The average age profile remains high compared with many other industries and there are a number of key focus areas identified to assist individual organisations in workforce planning, and the broader industry in marketing and strategy.

It is recommended that future reports more strongly consider competitor analysis for skills in the water sector. Recent market shifts have seen a decline in major resource sector projects. Some participating organisations reported trends of employees returned to the urban water following "stints" in the resources industry, which would be valuable to explore as part of a study of broader employment life cycles. In addition, organisations reported growth in using overseas employment markets to help meet demand.

The Queensland Government has also announced the development of a 30 year water sector strategy, due for publication at the end of 2013. The discussion paper issued in December 2012 identifies a number of perceived skilling pressures, and it is likely that the strategy will in some way guide the development of future snapshot studies.

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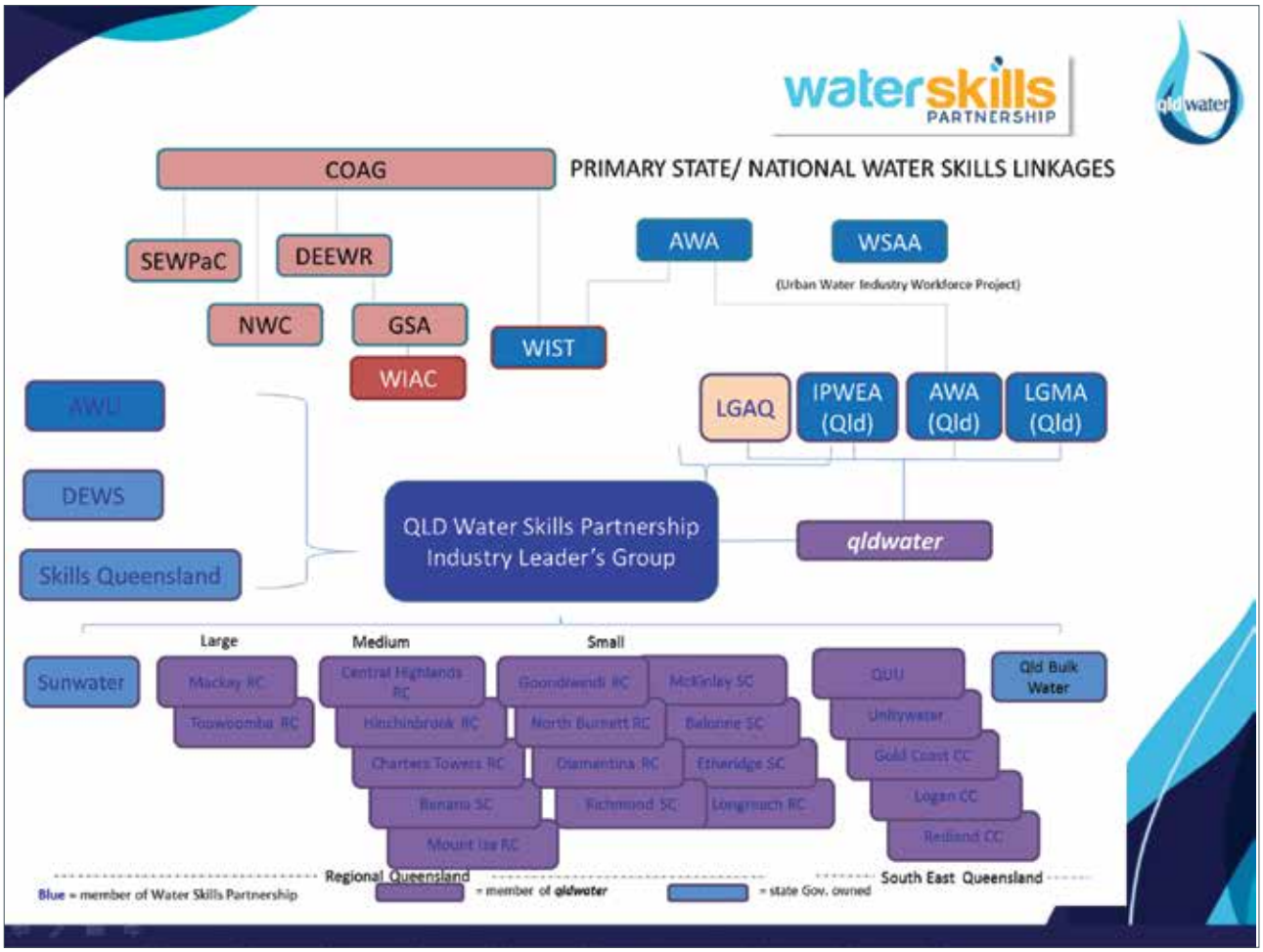
Special thanks to each of the organisations who contributed data to this study.



Appendix 1 – Summary of water reform since 2005

- Local government reform process completed in 2008. Amalgamation affected the majority of councils with up to eight previous local government areas combining to form one. The total number of registered water service providers reduced to 84 (73 local government).
- Water reform in South-East Queensland commenced in 2008:
    - Water retail and wastewater services transferred to council control with former council bulk water functions moved to the state under the control of Seqwater.
    - Establishment of the water grid including the Water Grid Manager, Linkwater, Watersecure and (the expanded) Seqwater.
    - Establishment (briefly) of a distribution/ retail entity to take control of water retail and wastewater services from the 10 SEQ councils.
    - May - July 2010 Removal of that entity, establishment instead of:
        - Unitywater (servicing Sunshine Coast and Moreton local government areas)
        - Queensland Urban Utilities (servicing Brisbane, Ipswich, Somerset, Lockyer Valley, Scenic Rim local government areas)
        - Allconnex Water (servicing Gold Coast, Redlands, Logan local government areas)
    - Merger of Watersecure and Seqwater July 2011.
    - Disaggregation of Allconnex Water – back to council distribution/ retail businesses in July 2012.
    - Merger of all remaining SEQ bulk entities into new Seqwater January 2013.

Appendix 2 – 2010 report erratum

Page 7 – Figure 3. 26% reflected for Water Industry Operators should read 36%.

Page 9 – Figure 5. Bar for Business Support Paraprofessional is missing.

Both are correctly reflected in the 2012 report.

About qldwater

The Queensland Water Directorate (***qldwater***) is the central advisory and advocacy body within Queensland's urban water industry and represents members from Local Government and other water service providers across Queensland.

The Directorate actively promotes collaboration and development across the industry. One major area of focus for ***qldwater*** has been to help identify and understand as well as guide the development of industry-wide strategies to aid the industry's significant skill development, attraction and retention challenges across the state.

qldwater will continue to work with industry to further develop its workforce and improve and retain valuable skills unique to the industry. Further information about this and other programs is available at www.qldwater.com.au.

43-49 Sandgate Road
Albion, QLD, 4010

PO Box 2100
Fortitude Valley, BC, 4006

phone: 07 3632 6853

fax: 07 3632 6899

email: enquiry@qldwater.com.au

www.qldwater.com.au