

The Research Director
State Development, Infrastructure and Industry Committee
Parliament House
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28 February 2014

Submission no. 070

28 February 2014

11.1.15

Dear Honourable David Gibson,

Re: Water Supply Services Legislation Amendment Bill 2014

The Master Plumbers' Association of Queensland (MPAQ) would like to highlight to you their trepidation regarding the potential change to legislation to allow unlicensed and unqualified persons to install, maintain and repair water meters.

Licensed plumbers protect the health and well-being of the community through the delivery of clean water and removal of waste. The potential danger presented through unlicensed and unqualified persons performing licensed work could potentially cause catastrophic health risks to the community by compromising the safety of their water supply.

Furthermore, any person who is required to install, maintain and repair a water meter, must undergo a Certificate III in Plumbing as a minimum training requirement to ensure the persons learns the consequences of this intricate and technical work. We have seen the fatal outcomes of allowing unqualified and untrained persons performing technical work in the 'Pink Batt's' and the 'Solar Panel Installation' Scheme's, resulting in the unfortunate deaths of several people.

The Government claims that this legislative amendment will provide for a potential reduction in costs for water service providers which outweigh the potential loss in employment. MPAQ provides evidence demonstrating the impacts this legislative amendment will have on plumbing businesses throughout Queensland resulting in significant job losses.

For over a decade, Government Water Service Providers, councils and some bureaucrats, have pushed to remove licensed plumbers for this work. Successive Governments and Ministers (including the LNP Government when it first came to power) rejected these manoeuvres for very good reasons.

The Association strongly disagrees with the proposed changes to current legislation, given a licensed plumber is the most suitability qualified person to perform works associated with the installation, maintenance and repair of water meters. The Association believes this a very important issue that should not be bullied through by Water Service providers.

If you require further information please don't hesitate to contact me on 07 3273 0800 or via email at penny.cornah@mpaq.com.au.

Kind Regards



Penny Cornah
Executive Director
Master Plumbers' Association of Queensland

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1.0 INTRODUCTION

The Master Plumbers' Association of Queensland (MPAQ) is the peak industry body representing plumbing contractors in Queensland. This submission is in response to the *Water Supply Services Legislation Amendment Bill 2014*. MPAQ strongly opposes this Bill and provides the following response to the Government's proposed amendments.

The Bill would enable authorised persons appointed by a Water Service Provider (WSP) to install certain water meters and would amend the *Plumbing and Drainage Act 2002*.

The Bill proposes that a Water Service Provider (WSP) will be able to appoint an "authorised person" to install, maintain and repair water meters in place of a qualified and licensed plumber. Under the proposed legislation changes:

A service provider may appoint a person to be an authorised person of the service provider if—

- a) the service provider is satisfied the person has the necessary expertise or experience to be an authorised person; or*
- b) the person has satisfactorily finished training approved by the service provider.*

This Bill will amend the *Plumbing and Drainage Act 2002* and as such, MPAQ and the plumbing industry are greatly concerned by this proposed amendment for a number of important reasons that cannot be ignored by the Government.

Firstly and most importantly, there are serious potential risks to the health and safety of the community. Poor installation and maintenance of water meters may lead to disease and microbial breakouts. Authorised persons will not be qualified to perform such work and will be putting the community's health at risk by tampering with the water supply system.

The Bill does not outline any specific requirements for training of "authorised persons" and no training package or specific level of competency is mandated. WSPs cannot appoint an authorised person to install a water meter unless they are satisfied the person has the necessary expertise, experience or has completed suitable training. MPAQ argues, how will the WSP determine the appropriate level of expertise, experience and training? The lack of adequate training and a third party regulatory body again put the community at risk.

The explanatory notes of the Bill claim that the potential reduction in costs for WSP outweighs the potential loss in employment for licensed plumbers. The impact of this change will have far reaching effects on plumbers and plumbing businesses. The Government's claim that these changes will reduce costs for WSPs is unsubstantiated and should be outlined to the public given the Government is putting red tape reduction and cost savings ahead of public health and safety.

Finally, the Government's argument for red tape reduction in this case is flawed as the proposed change will result in the forced creation of a new workforce when one already exists, this being licensed plumbing contractors.

The Bill raises a number of concerning questions which the Government has not adequately or transparently addressed. These should be explored by the State Development and Infrastructure Committee and calls for a public hearing before this Bill proceeds any further.

2.0 HEALTH AND SAFETY RISKS TO THE COMMUNITY

The Government's primary agenda is to protect and ensure the communities' health and safety. Yet with the introduction of this proposed amendment, the Government is putting this at risk, by allowing unlicensed and unqualified water service workers to install, maintain and repair water meters.

Community health and safety is of paramount importance in both the culture and regulation of the water services trades including plumbing, air-conditioning and fire services. This is indoctrinated and understood by licensed plumbers following their four years of training and years of experience.

Therefore MPAQ and the wider plumbing industry hold the qualified knowledge that the removal of the licensing requirement for the installation, maintenance and repair of water meters will lead to the increased health and safety risks. This is true not only for the worker performing the work, but also the community at large, through contamination, cross connections and other unlicensed, unqualified workmanship concerns.

Water meters are just one element of the holistic water supply system for safe human consumption. The installation of water meters range in complexity from the domestic meter through to purpose designed and large-scale water control systems. Licensed plumbers are qualified and experienced in understanding and protecting community health across the entirety of the water supply system.

Removing the licensing and training requirement will lead to diluting the skills and competency of people undertaking the work, and will result in increased health risk associated with contamination, cross connections and poor workmanship; whether that be for example through:

- Contamination of the water supply to individual buildings which can cause exposure to dangerous and deadly bacteria, viruses, toxins and parasites and also heavy metals such as lead, to the greater community. This can be through exposure to soil and other contaminants that might enter the water supply through ineffective joints or connections.
- Electrical risk for workers and residents through faulty earthing.

Refer to Appendix A for some examples where the above mentioned complications have occurred. It should be noted from industry feedback that there are considerably more cases of cross or poor connections that go unreported and which are repaired by MPAQ members, licensed plumbers and plumbers within Councils.

From a recent survey conducted by MPAQ 20% of members are aware of instances where water industry workers already install water meters in their local area, resulting in impacts to the residents' water supply and also the community's water supply infrastructure.

We have all witnessed the deadly effects of the Federal Government's Pink Batt Scheme and the Solar Panel Installation Program. Both of these lead to fatalities for the sake of cost cutting and red tape reduction. These are all perfect examples of unlicensed and unqualified workers putting the community's safety at risk. The recent Legionella outbreak exemplifies how a water supply can be inadvertently contaminated resulting in illness and possibly even death.

According to the explanatory notes of the proposed legislation, the Department of Energy and Water Supply (DEWS) and the Department of Health consider there is no discernable

change to health and safety risks because of these amendments. It appears that no evidence has been provided to support this claim and MPAQ demands that it be publically released to ensure full transparency throughout the legislative process.

3.0 SKILLS PATHWAYS AND QUALIFICATIONS

The Bill does not outline any specific requirements for training of "Authorised Persons" and no training package or specific level of competency has been identified. In addition, water service providers cannot appoint an authorised person to install a water meter unless they are satisfied the person has the necessary expertise, experience or has completed suitable training. MPAQ argues, how is the water service provider going to determine the appropriate level of expertise, experience and training and enforce this in a unbiased manner.

At present a licensed plumber has to undertake an extensive four year apprenticeship composed of both on-the-job and theoretical training and upon completion, they must apply to the Plumbing Industry Council (PIC) for their licence. All plumbing licensing is regulated by the PIC, which ensures that there is a third party monitoring our industry, ultimately protecting the health and safety of the community.

3.1 Qualification Requirements

The *Certificate III in Plumbing* in conjunction with a four year apprenticeship is the only qualification that covers all of the elements required of a person wishing to install water meters. *Certificate III in Plumbing* includes 63 competencies from the follow areas:

1. Water
2. Sanitary
3. Roofing
4. Drainage
5. Mechanical Services
6. Gas Services

This training embeds within the Plumber, the ability to assess the impact of particular work, to assess the infrastructure to which it is connected, to understand occupational health and safety (OHS) requirements as well as the potential health impacts of their work on the Queensland public.

Any qualification less than a *Certificate III in Plumbing* will not provide satisfactory training for a water service worker to be deemed an "Authorised Person".

3.2 Inappropriate or Truncated Training

The major risk of delivering training in inappropriate qualifications or providing truncated short courses, is that the industry ends up with the same problems that have occurred with the 'pink batts insulation' or 'solar panel installation' markets, which were rife with unqualified people and unsafe practices.

The nominal duration for the completion of a plumbing apprenticeship is four years. Undertaking non-accredited and condensed courses does not create workers with either the knowledge or practical skills to ensure that work of installing, maintaining and repairing water meters is performed competently. Nor does it provide for workers that understand the holistic skills required to ensure the health and safety in our potable water systems.

3.3 Specific Tasks and Competencies for Water Meter Work

Appendix 2 contains a schedule of tasks and competencies required when working on water meters. There are a few important issues which should be noted:

- Fitting water meters is no different to any other part of the water installation and water supply chain and one should be fully competent across the entire spectrum of plumbing related work in a full water installation. This is an issue that runs to the integrity of the water supply.
- Water meters also have some particular risks. Often they are installed as part of a meter assembly that includes the backflow device. It is extremely dangerous to have any part of a water installation faulty but where it can also affect the operation of the backflow protection. This means that asset damage can result but also any pathogen or contamination on the site can make its way into the community more broadly with backflow failure.

4.0 IMPACT ON PLUMBING BUSINESSES AND CONSUMERS

The explanatory notes of the Bill claim that the potential reduction in costs for WSP outweighs the potential loss in employment for licensed plumbers. It also claims that the installation of water meters is a minor component of all licensed plumbing work. MPAQ argues how the Government can make such claims, when once again there is no transparency of information provided to the public to support such claims.

In a recent survey of MPAQ members, the following case studies were selected from the results to demonstrate the severe and wide reaching impact on our industry:

- Company 1 commented he will have to get rid of 10 plumbers and 3 apprentices if this change goes through. This is 10% of his workforce.
- Company 2 employs 8 plumbers and will get rid of 2 due to the change. He will lose 25% of the workforce.
- Company 3 has projected that 90% of their revenue comes from water meter work. This means that he will likely go out of business.
- Company 4 identifies that 40% of their revenue comes from water meter work. This could lead to an eventual closure of the business.
- Company 5 says 30% of his revenue comes from water meter work. They will see a large portion of work reduced and will most likely struggle to replace that income. This could potentially lead to staff redundancies and the eventual shut down of the company.

For commercial plumbing contractors, the installation of large-scale water meters to service commercial buildings and infrastructure such as high-rise apartment blocks, hospitals, and industrial sites and similar, is a core feature of their business activity. A typical large scale system - from design through to the commissioning phase - may require 5 to 6 full time equivalent employees for around 1 to 1.5 weeks. Commercial plumbers might undertake 5 – 10 of these installations per year. Obviously such installations require extreme care and precision due to the nature of the property i.e. hospitals and the potential risk to patients and the community through installation fault.

The Government is claiming that the changes in the Water Supply Services Legislation Amendment Bill are expected to provide a more cost effective service to water service

providers, helping to reduce cost pressure on water prices for consumers right across Queensland. MPAQ does not support this suggestion given the evidence previously provided on the comparative Enterprise Bargaining Agreement (EBA) wage rates of Water service providers (WSPs) for water workers and plumbers, for example respectively;

- Urban Utilities - \$35/hr water service worker compared to \$29.06/hr for a plumber.
- Logan City Council - \$30.06/hr water service worker compared to \$26.33/hr for a plumber.

A decision as important as this should not be based on a monetary outcome when the health and safety of the community is at risk.

The Government believes that in some remote areas, securing a plumber may be difficult (similar to any other trade) however MPAQ respectfully argues that sourcing an 'authorised' water service worker would be equally difficult if not more, as sourcing a plumber to perform regulated works. This situation will not improve by permitting unlicensed, unqualified workers to perform water meter work. Most commonly, work in regional and remote areas is far less specialised than in metropolitan areas and a broadly skilled and qualified tradesperson is required.

Further, a dilution of the work performed by plumbers will tend to reduce their need for employing and training apprentices, which in the long run will lead to less qualified plumbers with the required plumbing skills in the community.

5.0 RED TAPE REDUCTION

The policy objective of this Bill is inline with the Queensland Government's commitment to growing a Four Pillar Economy by focussing on tourism, agriculture, resources and construction, and by reducing business and government costs through cutting red tape and regulation.

MPAQ sees major fallacies in these proposed changes which are certainly not "red tape reduction". Moreover this would equate to red tape creation by the induced requirement of creating a new workforce which would require as a minimum:

- new training
- new qualifications
- new regulatory body
- new worker class
- possible licence class
- legislation changes
- audit systems
- penalty systems
- insurance scopes

With the need to establish these new systems under the proposed legislation, MPAQ poses the question "how does the Government see this amendment as cutting red tape reduction?" when such a system is already in place with licensed and qualified plumbers currently carrying out the work.

6.0 CONCLUSION

On behalf of plumbers in Queensland, the Master Plumbers' Association of Queensland urges the State Development and Infrastructure Committee to seriously consider the proposed changes and their far reaching implications.

MPAQ strongly believes a public hearing is required as there are a number of key questions and concerns that this Bill raises, which the public deserve transparency and accountability for. Please find below a summary of the reasons for not amending the current legislation to allow unlicensed and unqualified persons to install and maintain water meters.

Should members of the Committee wish to discuss any items further, MPAQ would be more than happy to provide further information as required.

Community Health	<ul style="list-style-type: none">• Community health is a primary responsibility of Government.• The risk of drinking water becoming contaminated is ever-present. Incorrect design and installation of water meter assemblies can result in contamination with sewerage, recycled water or soil; which in turn risks the introduction of potentially fatal water born viruses, bacteria and parasites.• Currently this risk is substantially mitigated through the use of licensed plumbers who are competently trained.• Unfortunately a move to non-licensed workers will significantly exacerbate this risk to the community.
Market Size & Importance	<ul style="list-style-type: none">• Brisbane City Council has advised that there are around 21,000 installations per year of water meters and sub-meters. By extension, there is likely to be around 60,000 to 80,000 installations per annum across Queensland.• This is a significant activity for licensed plumbers and the proposal represents a considerable risk to the future viability of the construction sector including small businesses.
Competition	<ul style="list-style-type: none">• The current process encourages multiple plumbing contractors to quote on proposed water meter work, creating price competition.• The transfer of work from licensed plumbers to unlicensed, unqualified workers severely risks a reduction in competition.• As effective monopoly purchasers in their regions, Water Service Providers (WSPs) will gain even greater market power by moving away from the existing licensing requirements.• Contracted services will shift towards large and multi-national facility services companies who will likely employ or sub-contract non-licensed and unqualified workers (e.g. as has occurred in the solar installation industry).• This will be at the expense of the small and medium sized contracting businesses within the industry right across Queensland.
Workforce Skills & Quality	<ul style="list-style-type: none">• Licensed plumbers are required to undertake a comprehensive 4 year apprenticeship comprising theoretical and on-the-job learning and experience. They gain in-depth knowledge across a broad range of skills competencies, providing depth and context to their work.• Non-licensed water workers have no requirements for accredited training, and will most likely receive only very narrow training without the broader training and context of the plumbing

	<p>apprenticeship or a Water Industry Training Package qualification.</p> <ul style="list-style-type: none"> Reducing demand for licensed plumbers will risk the availability of future skills for the broader Queensland economy.
Red Tape	<ul style="list-style-type: none"> The time taken for design and installation of water meters is significantly reduced when referred to plumbing contractors compared to a WSP controlled process. Should WSP's become the sole entity to install water meters this may see significant increases in "red tape" and time for developers, builders and home owners to achieve approvals and installations. This is especially relevant given legislation does not place time frames on WSP's, which can already exceed three (3) months from the customer's request to installation.
Labour Costs & Availability	<ul style="list-style-type: none"> Water service providers (WSPs) have advocated the desire to move to non-licensed workers on the basis of costs and availability of labour. This is a flawed argument. Current EBA rates for low skilled water workers are commonly equal to or higher than rates for plumbers. For example, base rates for water industry work compared to a plumber are at: <ul style="list-style-type: none"> Urban Utilities - \$35/hr (WSW) compared to \$29.06/hr. Logan City Council - \$30.06/hr (WSW) compared to \$26.33/hr. There are over 15,000 licensed plumbers in Queensland available to undertake this work. MPAQ advise that other than in some 'thin markets' the supply of qualified plumbers is adequate.
Industrial Coverage	<ul style="list-style-type: none"> Plumbing contractors perform the majority of installations and maintenance work on water meters; and this is largely without union coverage. A number of years ago there was an agreement with the Government, the PIC, the Plumbers Union and the AWU regarding water meter maintenance (restricted to removing the cartridge from the water meter, taking it back to a workshop for repair by a suitably qualified person and then returning it to the meter) subject to the requirements of the section 384 (1) of the Water Act 2000.

6.1 Contact

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APPENDIX 1: Examples of Cross Connections & Use of Unlicensed Workers

Examples of Cross Connections

Gold Coast

In 2010, Gold Coast Water (GCW) recorded at least eight (8) cases of cross connections in the Pimpama Coomera area due to various incorrect meter configurations, for example potable meter was installed on the recycled water service line and the recycled water meter were installed on the potable water service line. GCW confirmed five (5) of the cross connections were performed by unlicensed plumbers and were unsure of who was responsible for the remaining three (3) cross connections reported. The Plumbing Industry Council (PIC) advises that this cross connections did cause illness and it is highly unlikely that the further three (3) cross connections were undertaken by licensed plumbers.

Moreton Bay

In 2010, Moreton Bay Regional Council (MBRC) conducted on-site conductivity testing of the Caboolture recycled water mains and during this procedure cross connections were discovered. MBRC reported three (3) major cross connections within the recycled water network supplying the Caboolture Hospital and surrounding housing estates. The plumbing company who performed the alleged defective work was found not to be at fault due to the recycled water meter on site already being installed on the mains line prior to the plumbing company commencing work. In addition, the Principal PIC Investigator conducted an interview and found that the MBRC plumbing inspectors stated they believed staff from the water service provider had performed the installations.

Brisbane

In 2011, a complaint was received from a plumber who alleged Queensland Urban Utilities (QUU) was using his details fraudulently so their unlicensed staff could install water meters under his name. The complaint was referred by the PIC to Brisbane City Council (BCC).

*Note these matters are generally investigated by local government, which makes it difficult to gather further information.

We have recently seen the terrible deaths associated with the poor management of water systems at the Wesley Hospital. This legionella contamination occurred through the hot water system, which was being operated by the hospital at an incorrect temperature. Water temperature settings and contaminant / pathogen testing of the system appeared not to occur. This unfortunate tragedy is a result of poorly managed water supply systems and clearly the effects can be detrimental.

Airport Link Tunnel

Following a complaint received from QUU on 6 January 2012, BCC was requested by QUU to investigate the construction site at 224 Gympie Road. The investigating officer was advised by QUU a water meter assembly was installed by unlicensed plumbers working for the civil contractor at the Airport Link construction site. It was reported a cross connection was made to the alternative water main servicing the on-site facilities at 224 Gympie Road when the water meter assembly was installed. It was also reported the works occurred on 4 January 2012 during the shutdown of QUU's water main. A number of workers became sick resulting from recycled water being connected to showers, toilets, basins, sinks and a drinking fountain at the construction site.

BCC officers found all reported cross connections were removed by the civil contractor prior to BCC attending the site on 6 January 2012. QUU could not supply any evidence to support BCC investigation.

Current Use of Unlicensed Workers

Wynnum West

A recent example of this was Queensland Urban Utilities at 261 Preston Rd Wynnum West installing a fire service device for an additional development on an aged care facility. All of the work, bar the installation of the water meter on the device, was authorised as non-licensed work, when the work was clearly licensed plumbing work.

Logan City

In another example from industry feedback, Logan City Council is claimed to have utilised a non-licensed person to install all the new meter connections in the suburb of Beenleigh.

There is clear evidence that some water utility companies and Councils are engaging non-licensed workers to undertake work that requires a licensed plumber.

Defective Installations

These photos provided by the Plumbers Union Queensland show where Urban Utilities has installed a new main water service to an Aged Care facility. The service includes the installation of a backflow device, and water meter and has zone protection to stop any chance of cross connection from within the boundary of the Aged Care facility coming back into the main water supply to the rest of the community. The construction and installation of this device can only legally be performed by a licensed plumber, and one who has also completed a backflow prevention endorsement.

In discussions with the employees who had constructed and installed this service, we identified that un-licensed persons had constructed and installed all but the water meter on this service.

This is one example of a regular pattern of instances that industry comes across where un-licensed persons are working in areas beyond the boundaries of Council's infrastructure.

Risk of Electrocution

In most premises, the earthing of the electrical installation is achieved by the connection of the main earth wire to an earthing electrode that is driven into the ground. However, because metallic water systems in the premises are also bonded to the earthing circuit, they can be subject to a potential rise under electrical fault conditions.

Plumbers are at risk of serious or fatal electric shock if they:

- Cut through the water pipe between the buildings earth connection and the street main;
- Remove a water meter;
- Disconnect the main earth wire from the water pipe.

If correct procedures are not applied when a water meter is disconnected and installed onto the water supply line feeding a building, the person performing the required works or those in the buildings property, may be electrocuted.

Licensed plumbers are trained on the potential of electrical current flowing through a water meter and/or connection pipes repair and removal, and have the skills and knowledge to protect themselves from electrical risk in such circumstances.

New South Wales (NSW) has records of 75 plumbers reported as having received electrical shocks between 1 January 1997 and 30 June 2009. **Four of these shocks were fatal.** This is work that has been carried out by trained, qualified, licensed plumbers and due to the

nature of the work, MPAQ and our members understand the risks associated and our members have undergone a four(4) year apprenticeship to fully understand the associated risks, How many lives is the Government prepared to put at risk by allowing unlicensed and untrained installers to perform this intricate and dangerous work?

Sydney Water – Fatal Incident 2005

A Sydney Water employee was killed late on a Saturday evening in 2005. He cut the water supply between the water main and the water meter. The house power connection had a broken neutral link and as the house earth was connected to the copper water supply for the house, when the plumber cut the pipe he became the earth and was electrocuted. This case caused major changes in NSW in respect of electrical safety whilst working on water services.

Newcastle – Fatal Incident 2008

An apprentice plumber was electrocuted and died trying to save his boss after he cut a water pipe under a house on 14 October 2008. The employer was using an angle grinder to cut through a galvanised water pipe when they received severe electric shocks.

Substations

NSW report significant problems around electricity sub-stations, which have traditionally been earthed to the water authority pipe supply system. With the introduction of plastic infrastructure pipes, that earthing system has been compromised and causes a multitude of problems for both the electricity and water supply systems.

As demonstrated, the installation, maintenance and repair of a water meter can be very delicate and intricate work and one small error can result in a multitude of issues that can also result in fatalities. This alone should be reason why this amendment cannot be passed.

APPENDIX 2: Installation of Water Meters

Installation of water meter

Electrical safety for plumbers

In most premises the earthing of the electrical installation is achieved by the connection of the main earth wire to an earthing electrode that is driven into the ground. This helps maintain the earthing system at ground potential and creates an earthing path for electricity should a fault develop in the electrical installation. However, because metallic water systems in the premises are also bonded to the earthing circuit they can be subject to a potential rise under electrical fault conditions.

The danger

Under normal conditions electric current for appliances, lights etc flows in the active and neutral conductors. The neutral conductor provides the return path back to the substation transformer. Under some fault conditions, currents will flow in the earth wire and therefore will be imposed onto the water piping system.

Plumbers are at risk of serious or fatal electric shock if they:

- cut through the water pipe between the earth connection and the street main
- remove a water meter
- disconnect the main earth wire from the water pipe.

If correct procedures are not applied when a water meter is disconnected and installed onto the water supply line feeding a building the person performing the required works may be electrocuted, this is a significant risk to workers who perform water meter installations / replacements with regards to their work place health and safety.

- Site assessment.
 - To determine site requirements / hazards.
- WHS requirements / assessments.
 - SWMS and risk assessment.
- Deduce suitable materials.
 - To suit location, ground material, existing water service material.
 - Ensure the water meter assembly and components comply with Australian Standard requirements, Plumbing Code of Australia requirements and the Water supply Act 2008
- System design / planned.
 - Design to suit existing main / site requirements.
 - Contact Water Services Provider for site specific requirements with regards to their existing infrastructure
 - Calculate existing site specific fixture load requirements
 - Calculate the flow loss through the proposed water meter assembly with regards to site specific requirements
 - Assess site specific requirements against fire and water supply conditions listed in Australian Standards and Water Services Provider specific requirements attached to fire and onsite water storage demands
 - Conduct a pressure test of the area surrounding the proposed site to evaluate the available pressure within the Water Services Provider's network. This is to ensure

the introduction of a proposed water meter will not affect the performance requirements required to achieve compliance for the site against Local Government, State legislation and Australian Standard requirements.

- Additionally some designs may require the installation of a mag flow water meter to ensure the internal workings of the proposed water meter will not affect the performance requirements associated with important services like; Automatic Fire Sprinkler System, Fire Hydrant and Hose Reels system.
- Organise / direct excavation.
 - Excavator / team dig.
 - Locate possible underground hazards.
 - Spacing of services.
 - Obtain copies of existing private services from Local Government and Water Services Provider
- Organise turncock.
 - Procedure advised by Water Services Provider (WSP may provide person to operate turncock to isolate water located often in Street.
 - May require assistance from Water Services Provider to ensure all existing water mains are isolated
- Cut tee into existing main.
 - Size tapping to suit.
 - Cutting of existing main for the installation of tee.
 - Approved material only to be used, must comply with Australian Standard requirements, Plumbing Code of Australia requirements and the Water supply Act 2008
- Install required fittings (bends, flanges, bolts).
 - Knowledge of appropriate and approved materials and fittings.
 - Approved material only to be used, must comply with Australian Standard requirements, Plumbing Code of Australia requirements and the Water supply Act 2008
- Install riser to surface. (if not in ground)
 - Approved support to be installed, must comply with Australian Standard requirements, Plumbing Code of Australia requirements and the Water supply Act 2008
- Backfill using appropriate bedding material.
 - Approved material to be installed, must comply with Australian Standard requirements, Plumbing Code of Australia requirements and the Water supply Act 2008
- Install sluice valve x2 .
 - Approved material only to be used, must comply with Australian Standard requirements, Plumbing Code of Australia requirements and the Water supply Act 2008
- Bypass valve / bypass line.
 - To facilitate the removal of meter in the future without disrupting water supply.

- Approved material only to be used, must comply with Australian Standard requirements, Plumbing Code of Australia requirements and the Water supply Act 2008
- Assess site for backflow requirements.
 - As determined through site inspection, facility purpose, contamination hazards.
 - Backflow installation attached to water meter assembly, must comply with Australian Standard requirements, Plumbing Code of Australia requirements and the Water supply Act 2008
- Backflow protection installation / initial test of device.
 - Evaluate the pressure required within the backflow device against the water pressure within the meter assembly.(May require spring adjustment in backflow device to achieve correct operation of water meter assembly)
 - Evaluate the correct type of backflow device to be installed as part of the water meter assembly against the type of water meter and the friction losses within the assembly
- Detector check assembly
 - To monitor low flow use
 - Ensure detector check complies with Australian Standard requirements
- Install water meter assembly
 - Approved material only to be used, must comply with Australian Standard requirements, Plumbing Code of Australia requirements and the Water supply Act 2008
- Test and commission installation.
 - Evaluate water pressure losses through the assembly to ensure the design achieves the requirements of important services like; Automatic Fire Sprinkler System, Fire Hydrant and Hose Reels system.
- Assess installation and Install protection if required
 - Denzo tape, bollards, Armco.
 - Install Assembly in accordance with all relevant Australian Standard requirements