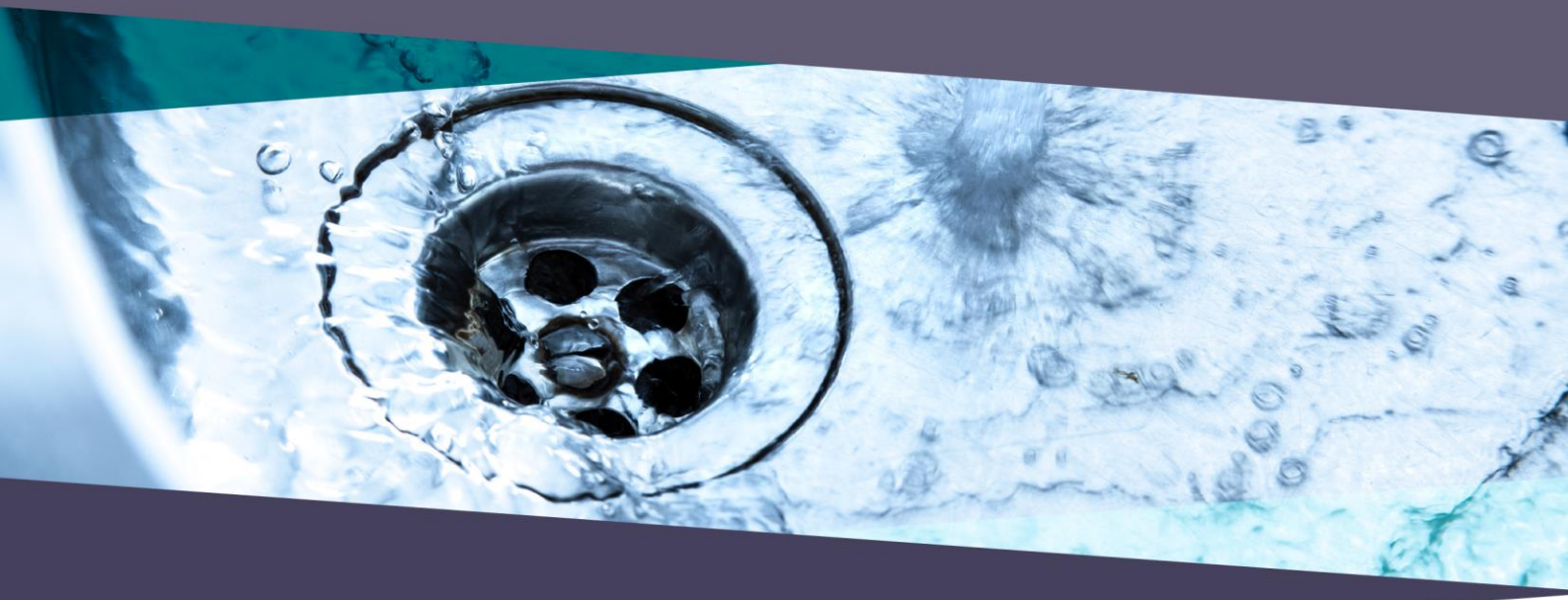
Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**
Building and Energy



Decision Regulatory Impact Statement

Reforms to Plumbing Regulation in Western Australia

November 2019

Contents

FOREWORD

Plumbers and plumbing services play a vital role in ensuring that Western Australians have access to a clean water supply and a safe system for the removal of wastewater.

Our plumbing systems are among the very best in the world and good plumbing regulation is key to making sure they continue to be so.

Western Australia's current *Plumbers Licensing Act 1995* has been in place since 2000 and is overdue for reform. The changes set out in this Decision Regulatory Impact Statement (DRIS) aim to deliver the reforms that are needed, and will ensure that the Western Australian community benefits from a strong and effective regulatory framework for plumbing long into the future.

Glossary of Terms

ABCB	Australian Building Codes Board
ACIL Allen	ACIL Allen Consulting
ADS	Approved Disposal Systems
AHSCA	Association of Hydraulic Services Consultants of Australia
ATU	Aerobic Treatment Unit
BCA	Building Code of Australia
BMF	Building Ministers' Forum
BPD	Backflow Prevention Device
COAG	Council of Australian Governments
COC	Certificate of Compliance
CRIS	Consultation Regulatory Impact Statement
DRIS	Decision Regulatory Impact Statement
EDPH	Executive Director, Public Health
EHAWA	Environmental Health Australia (WA Branch)
EHO	Environmental Health Officer
GWIG	Greywater and Wastewater Industry Group
IGA	Australian Building Codes Board Intergovernmental Agreement
LGA	Local Government Authority
LPC	Licensed Plumbing Contractor
MEHMG	Metropolitan Environmental Health Management Group
MPGA	Master Plumbers and Gasfitters Association of WA
NCC	National Construction Code
NOI	Notice of Intention
OWMS	Onsite Wastewater Management System
PCA	Plumbing Code of Australia
PLB	Plumbers Licensing Board
Plumbing Act	*Plumbers Licensing Act 1995*
Plumbing Regulations	Plumbers Licensing and Plumbing Standards Regulations 2000
RIA	Regulatory Impact Assessment
RPP	Restricted Plumbing Permit
RTO	Registered Training Organisation
SAT	State Administrative Tribunal
TMV	Thermostatic Mixing Valve
WA	Western Australia
Water Services Act	*Water Services Act 2012* (WA)

1. Executive Summary and Decisions

This DRIS is the final stage of an extensive review of Western Australia's plumbing laws which began in 2014 with the release of a report commissioned from independent consultants, ACIL Allen Consulting (ACIL Allen), by the then Minister for Commerce.

The ACIL Allen report contained 51 recommendations for reform, ranging from relatively simple amendments, to complex legislative reforms requiring not only a fundamental re-shaping of the approach to regulating plumbers and plumbing work in Western Australia (WA), but also a detailed assessment of the potential impacts.

A staged approach to the reform process was adopted, and over the course of the period from 2014 to 2017 many of ACIL Allen's recommendations were implemented via amendments to the Plumbers Licensing and Plumbing Standards Regulations 2000 (the Plumbing Regulations).

On 1 May 2018, proposals relating to the implementation of the remainder of the ACIL Allen recommendations – together with a number of other matters that had arisen since the publication of the ACIL Allen report, were released in the form of a Consultation Regulatory Impact Statement (CRIS) for a three-month period of broad public consultation. The CRIS was accompanied by a detailed cost benefit analysis prepared on behalf of the then Department of Commerce by independent consultants, Marsden Jacob Associates (Marsden Jacob).

During the three months that the CRIS was open for comment, staff from the Department of Mines, Industry Regulation and Safety – Building and Energy Division (Building and Energy) conducted sixteen consultation sessions across the State, providing information about the CRIS proposals to over 200 people, most of whom were from the plumbing industry.

By the closing date of 31 July 2018, over 1,000 written submissions had been received in response to the issues canvassed in the CRIS. Of those, some 816 were delivered by the Master Plumbers and Gasfitters Association of WA (MPGA).

Each of the 816 MPGA submissions reflected a combined members' view developed following a number of consultation sessions organised by the MPGA for its members during the three-month consultation period. The vast majority of the 816 MPGA submissions were from plumbers, but there were also some from non-plumbers, such as office receptionists and administrative staff. The MPGA Executive also submitted a response of its own[1].

The remainder of the submissions came from a wide range of stakeholder groups, including suppliers and manufacturers of plumbing products; hydraulic designers and consultants; unions; installers and servicers of on-site wastewater treatment systems; local governments; State Government agencies; construction companies; industry associations; and registered training organisations.

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[1] For the purposes of this DRIS, we have treated the 816 MPGA submissions as one combined submission and refer to it as the 'MPGA members' combined submission'. We refer to the executive submission as the 'MPGA executive submission'.
A consultation process conducted for the purposes of assessing the impact of proposed regulatory changes is not the same as a referendum or a plebiscite. Consultation in the regulatory assessment context is about seeking information and evidence from stakeholders, rather than polling or conducting a vote. Consequently, the submission of multiple responses that are all identical carries the same weight as one response co-signed by all who support it.

The Plumbers Licensing Board (the PLB) resolved not to provide a submission, on the grounds that it would not be appropriate for it to do so[2]. Individual submissions were, however, received from two members of the PLB.

The diversity of the stakeholder groups who responded to the CRIS meant that a broad range of perspectives and views were provided for each of the proposals.

Building and Energy has completed an in-depth analysis of each submission and has re-assessed each of the CRIS proposals in the light of the comments made. This DRIS details the outcome of that re-assessment and sets out the Government's decision on how it intends to re-shape the plumbing regulatory framework in WA in the light of the remainder of the ACIL Allen recommendations.

In conducting its re-assessment, Building and Energy has applied the principles of best practice regulation by first considering whether there is sufficient evidence of a 'problem' that warrants the government's intervention through regulation, and, second, by ensuring that the 'burden' of regulation is proportionate to the benefits that regulation is expected to bring.

Consistent with the State Government's Streamline WA initiative, opportunities to reduce unnecessary red tape have also been taken wherever possible and appropriate.

It is also important to note that the decisions contained in this DRIS are based on the guiding principle that the purpose of the plumbing legislation is, first, to protect public health by requiring plumbing work to be carried out to the correct technical standard by appropriately qualified people; and, second, to ensure that the consumer is adequately protected.

The plumbing legislation must also be viewed in the wider context as being only one part of a broad framework of regulation, policy and practice aimed at protecting public health in WA from the risks associated with poor sanitation and unclean drinking water.

Many of the submissions received in response to the CRIS were based on a view that the plumbing legislation should also serve to protect and advance the plumbing industry. While it is, of course, important for the legislation to be cognisant of the needs of industry and sufficiently flexible to enable plumbers to respond to technological advances, it is important to note that it is not the role of the Plumbing Act to safeguard the interests of the plumbing industry.

[2] Item 5.5 in the minutes for the PLB meeting held on 28 May 2018

Decisions

ACIL Allen's recommended model for plumbing regulation in WA was based on a framework that comprised five elements aimed at delivering the following overall objective:

> *"To protect the long term interests and health of Western Australians with respect to the safety of the water supply and wastewater removal system by ensuring that plumbing work is done sufficiently safely in accordance with technical requirements appropriate for available technologies by sufficiently skilled people."*[3]

The five elements identified by ACIL Allen as necessary to achieve that overall objective were:

- A regulatory definition of 'plumbing work' that sets boundaries within which plumbing regulation can be applied and beyond which it cannot go, but which is sufficiently broad to allow future flexibility.
- A licensing regime to ensure that regulated plumbing work is performed by sufficiently skilled people.
- A set of technical rules to mandate how regulated plumbing work is to be done.
- A compliance regime to ensure regulated plumbing work is done as it should be done by people who are duly licensed to do it, and which provides a means of redress for consumers and a means for the regulator to sanction those who do the wrong thing.
- A governance and decision-making framework comprising a 'licensing regulator' to administer the licensing regime, and a 'technical regulator' to administer the compliance regime and ensure that the technical standards are adhered to.

A sixth element is also vital, and that is an adequate funding model to ensure that the compliance regime is well-designed, targeted at the area of greatest risk, and suitably resourced.

The decisions set out in this DRIS are consistent with those broad principles and aim to deliver a modern regulatory framework for plumbers and plumbing work in Western Australia that provides the necessary consumer and public health protections while at the same time allowing industry the flexibility to adopt new technologies and continue its important contribution to the State's economy.

The following table (Table 1) summarises the decisions that have been reached following the completion of the CRIS process.

Section 2 of this DRIS sets out the detailed reasoning behind each decision.

[3] ACIL Allen Report, page vi

Table 1. List of decisions

Number	Decision	CRIS Proposal
Decision One	To **replace** the current funding model for the compliance and enforcement activities of the plumbing technical regulator.	Proposal One
Decision Two	**To reform** the governance arrangements for plumbing regulation such that: (a) the role of technical regulator is assigned to the Building Commissioner (supported by staff from Building and Energy), rather than the PLB. (b) the role of 'licensing administrator' continues to be held by the PLB (supported by staff from the Service Delivery Group of the Department of Mines, Industry Regulation and Safety). In recognition of the PLB's more streamlined role, the membership of the PLB is to be **amended** such that it is composed of an independent chairperson and seven members as follows: • a member who is an LPC; • a member with knowledge and experience of the plumbing industry; • two members with the ability to represent the interests of consumers; • a member with a background of, and qualifications in, administrative law; • a member with knowledge and experience in training and assessing in a trade training environment; and • a public servant from the department principally assisting the Minister with the administration of the Plumbing Act.	Proposal Twenty-one
Decision Three	To **revise** the scope of the Plumbing Act such that it applies to work prescribed in the Plumbing Regulations as the design, construction, testing, installation, alteration, extension, replacement, repair or maintenance of pipes, fixtures, fittings, devices or apparatus used or intended to be used to convey water, wastewater and other wastes. In order to deliver the required level of flexibility, it is envisaged that the principal Act will include a power to make regulations to prescribe work other than that listed above as plumbing work to which the Act applies, and to prescribe certain areas of work as not being plumbing work to which the Act applies.	Proposal Two

Number	Decision	CRIS Proposal
Decision Four	To **prescribe** the following work as 'water supply plumbing work' in the Plumbing Regulations: (a) Drinking water services Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of a cold water service or a heated water service that is connected, or intended to be connected, to the drinking water supply, from the point of connection to the points of discharge. (b) Non-drinking water services Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of a non-drinking water service that is connected, or intended to be connected, to the non-drinking water supply from the point of connection to the points of discharge.	Proposal Three
Decision Five	To **prescribe** the following work as 'sanitary plumbing work' in the Plumbing Regulations: Work involving the design, construction, installation, replacement, connection, disconnection, ventilation, repair, alteration or maintenance of pipes, fittings and fixtures used or intended to be used to collect and convey wastewater or other waste to a sanitary drainage system or to an on-site wastewater management system or to an approved disposal system.	Proposal Four
Decision Six	To **prescribe** the following work as 'drainage plumbing work' in the Plumbing Regulations: Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of underground pipes and other fittings used or intended to be used to convey discharge from a sanitary plumbing system to a sewerage system or to an on-site wastewater management system or to an approved disposal system.	Proposal Five
Decision Seven	To **clarify** the legislation such that work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of a garden reticulation system downstream of a backflow prevention device; a greywater diversion vessel; a greywater treatment system; or a blackwater treatment system is outside the scope of the Plumbing Act and can therefore be carried out by any person.	Proposal Six

Number	Decision	CRIS Proposal
Decision Eight	To **broaden** the scope of the Plumbing Act to require owners or persons with control of high-risk facilities to ensure that plumbing safety devices such as Backflow Prevention Devices (BPDs) and Thermostatic Mixing Valves (TMVs) are inspected, tested and maintained by an LPC in accordance with the relevant Australian Standard and manufacturers' instructions.	Proposal Seven
Decision Nine	• **Not to expand** the scope of 'drainage plumbing work' to adopt Part F1 of **PCA 2016** (installation/construction of onsite wastewater management systems) as regulated plumbing work. • **Not to adopt** Section D or Section E of **PCA 2016** (roof, surface and sub-surface drainage systems; heating, ventilation and air-conditioning systems) as regulated plumbing work. • **To defer** a decision on the adoption of Part B4 of **PCA 2019** (Fire-fighting water services) as regulated plumbing work, pending the completion of related policy projects that are currently being undertaken by Building and Energy in response to the recommendations of the report released by the Building Ministers' Forum in April 2018, titled: "*Building Confidence – Improving the effectiveness of compliance and enforcement systems for the building and construction industry across Australia*" (the Building Confidence Report). • **To expand** the scope of 'water supply plumbing work' to adopt Parts B3, B5 and B6 of **PCA 2019** as regulated plumbing work (non-drinking water services; cross-connection control; and rainwater harvesting). • **Not to adopt** Section D (Excessive noise) or Section E (Facilities) of **PCA 2019**	Section 4.2.7
Decision Ten	**To allow** homeowners to carry out the following tasks in their own private homes without a licence: • repairing or replacing a shower head; • repairing a tap or tap mixer valve but not a thermostatically controlled tap; • replacing an inlet or outlet washer in a toilet cistern; • replacing a domestic water filter cartridge; and • clearing a blocked waste pipe by the use of a plunger.	Proposal Eight

Number	Decision	CRIS Proposal
Decision Eleven	**To amend** the Plumbing Regulations, where necessary, to require that the integral plumbing within a pre-fabricated plumbing module be constructed and installed in accordance with the following: • Pre-fabricated plumbing modules with integral plumbing that are deemed to fit with the WaterMark certification scheme and are WaterMark certified to WMTS-050 can be installed in, or connected to, a plumbing installation. The module may be constructed by a person who does not hold a plumbing licence. However, the installation or connection of the module on site must be performed by, or under the direction and control of, a WA-licensed plumber and be certified by a WA LPC in accordance with the Plumbing Regulations. • Pre-fabricated plumbing modules with integral plumbing that are not WaterMark certified must have the integral plumbing constructed by, or under the direction and control of, a WA-licensed plumber and be certified by a WA LPC in accordance with the Plumbing Regulations. The installation or connection of the module on site must also be performed by, or under the direction and control of, a WA-licensed plumber and be certified by a WA LPC in accordance with the Plumbing Regulations.	Section 4.2.9
Decision Twelve	**To broaden** the scope of the Plumbing Act to implement the following decisions relating to the design of plumbing installations for buildings classified in Classes 2 to 9 of the National Construction Code: (a) Any person may design a **Deemed-to-Satisfy Solution** but he or she must ensure that the design is such that the installation will comply with the Performance Requirements of the PCA. Designers will face sanctions if the design of a Deemed-to-Satisfy Solution is found not to comply with the PCA. (b) Any person may design a **Performance Solution** but he or she must ensure that the design is such that the installation will comply with the Performance Requirements of the PCA. Designers will face sanctions if the design of a Performance Solution is found not to comply with the PCA. (c) All Performance Solution designs must also be verified as meeting the Performance Requirements of the PCA by a person authorised under the Plumbing Act to verify Performance Solutions. The Plumbing Regulations will list the categories of authorised person.	Proposal Nine

Number	Decision	CRIS Proposal
Decision Thirteen	**Not to introduce** a corporate licence category for plumbing.	Proposal Ten
Decision Fourteen	**To retain** the requirement for business training as a prerequisite for obtaining a plumbing contractor's licence.	Proposal Eleven
Decision Fifteen	**Not to introduce** mandatory insurance requirements as a prerequisite for obtaining a plumbing contractor's licence.	Proposal Twelve
Decision Sixteen	**To expand** the scope of work permitted to be carried out by the holder of an RPP to add the following when carried out in the course of replacing a water heater: • replace a flexible connector with an approved flexible connector, if the water heater to be replaced was previously installed with a flexible connector; and • replace a water heater isolating valve if the existing valve is not functional, or if the existing valve is required to be replaced with a full-flow ball valve by the water heater manufacturer, **provided that** the valve is able to be replaced without changing the configuration of the existing water supply pipework.	Proposal Thirteen
Decision Seventeen	**To amend** the Plumbing Regulations to the effect that a person who has successfully completed a plumbing apprenticeship under a training contract and has obtained a Certificate III in Plumbing as part of that contract, does not commit an offence if he or she carries out plumbing work under the direction and control of an LPC in the two-month period following the completion of the training contract, provided that an application for a plumbing tradesperson's licence has been submitted to the PLB and the applicant has not received notification from the PLB that the application has been refused.	Proposal Fourteen
Decision Eighteen	**To not impose** a blanket ban on advertising by non-plumbers. However, the Plumbing Regulations are to be **amended** to make it an offence for people who are not LPCs to hold themselves out to be a plumber by advertising to carry out any kind of licensed plumbing work.	Proposal Fifteen
Decision Nineteen	**To amend** the Plumbing Regulations to clarify the LPC's duty to exercise direction, control and supervision over plumbing tradespersons, apprentices and provisional licence holders; and enable enforcement action to be taken in cases where an LPC has failed to exercise adequate direction, control or supervision.	Proposal Sixteen

Number	Decision	CRIS Proposal
Decision Twenty	As the current maximum penalty of $5,000 for an offence against the Plumbing Act or Regulations provides little deterrent (particularly to those carrying out unlicensed work), it is proposed to **increase** the maximum penalty amount to $50,000, commensurate with the *Gas Standards Act 1972*.	Proposal Seventeen
Decision Twenty-one	**To amend** the Plumbing Act to prescribe a two-year limitation period for taking prosecution action and/or issuing infringement notices for offences. (Currently, the limitation period is one year.)	Proposal Eighteen
Decision Twenty-two	**To amend** the Plumbing Regulations to remove the notification requirement for minor plumbing work, and replace it with the less onerous requirement that LPCs must simply keep a record of such work and make it available for inspection on request.	Proposal Nineteen
Decision Twenty-three	**To amend** the Plumbing Regulations to: • **remove** "work involving the maintenance or repair of an existing water heater" from the scope of the Plumbing Act; • **clarify** that the installation or replacement of a testable backflow prevention device is 'major plumbing work'; and • **clarify** that the replacement of a non-testable backflow prevention device is 'minor plumbing work'.	Proposal Twenty

2. Reasons for Decisions

2.1 Decision one – Funding plumbing regulation

Background

Since 1 July 2004 – when the PLB's functions were extended to cover not just the licensing of plumbers but also the regulation of plumbing work, the compliance and enforcement regimes for plumbers and plumbing work have been funded from fees paid by licensed plumbers and permit holders. As part of their review, ACIL Allen were asked to look at these arrangements and consider other options for financing the administration of plumbing regulation in WA[4].

Current funding model

All "**major** plumbing work" requires a 'notice of intention' (NOI) to be submitted prior to any work being undertaken. An LPC must not carry out, permit, or arrange for major plumbing work to be carried out unless an NOI for the work has been submitted. Books of pro-forma notices must be purchased from the PLB. Each individual notice costs $22.50 (or $23.45 if the work involves the installation of a Performance Solution.)

Once the work is completed, the LPC who lodged the corresponding notice of intention must submit to the PLB a 'certificate of compliance' within five working days of completing the work. As the certificate of compliance is a duplicate copy of the NOI, no additional fee is charged for the certificate.

All "**minor** plumbing work" carried out must be certified on a multi-entry certificate.
A multi-entry certificate will record up to 25 individual jobs and must be submitted to the PLB within five working days after the end of each calendar month during which the work was carried out. As with NOIs, books of pro forma certificates must be purchased from the PLB. Each certificate costs between $16.00 and $17.00 depending on the number purchased.

In addition to the fees paid for NOIs and multi-entry certificates, regulation 45 of the Plumbing Regulations requires LPCs to pay "new installation fees" (generally referred to as 'fixture fees') in respect of plumbing work for a new building or an extension to an existing building (where there is a change in the roofline) that will include at least one new sanitary fixture. The total fee is dependent on the number of fixtures being installed, with a fee of $69.25 for 1-9 fixtures, and an additional $11.40 for each fixture after that.

The charging of fixture fees is based on a methodology set by the Water Corporation at the time when it was the plumbing regulator. This methodology applies the principle that as every plumbing fixture installed or connected adds a load onto the Water Corporation infrastructure, a fee is required to be paid.

For large buildings such as apartment blocks and hotels, the fixture fees can amount to many thousands of dollars. This cost is passed on to builders/developers and, ultimately, the homebuyer or the consumer.

[4] For the purposes of this discussion, the term 'plumbing regulation' means the technical regulation of plumbing and plumbing work. It does not include the administration of the licensing scheme for plumbers.

As illustrated by the figures shown in the following table, this represents a high volume of low-value transactions, with associated administration costs to licensed plumbers as well as the plumbing regulator.

It is a time-consuming exercise for both industry and the regulator alike, and poses many day-to-day complications, such as wrong payment amounts that need to be adjusted, or fees paid for work that does not go ahead or is taken over by another LPC part-way through. For the regulator, this diverts resources that could otherwise be used for compliance activities.

Table 2. Statistics for NOIs and fixture fees 2012/13–2018/19

Year	Number of NOIs received	Number of NOIs with fixture fees attached
2012/13	51,679	21,703
2013/14	57,130	24,869
2014/15	59,966	25,506
2015/16	55,008	20,533
2016/17	52,453	16,367
2017/18	54,431	15,480
2018/19	54,916	14,759

ACIL Allen's findings

ACIL Allen highlighted a number of concerns about the current system, including that it:

- is an inefficient method of recovering costs;
- is administratively expensive to run;
- incentivises the under-reporting of work and results in the under collection of fees; and
- collects fixture fees in relation to new construction only and misses work involving maintenance, renovations and refurbishments, no matter how extensive that work is.

Moreover, as the funding mechanism is linked to the NOI process, any under-reporting of work to avoid the payment of fees prevents the regulator from having a complete picture of the work that is happening across the State to be able to plan its inspection activity to best effect.

ACIL Allen commented on this in their final report, saying that the compliance regime for plumbing should be "tightened" and its visibility increased. This was largely based on feedback ACIL Allen had received from the plumbing industry which lamented the low number of inspections carried out by the plumbing regulator. The industry opined that this had led to a greater incidence of non-compliant work and that the risk of sub-standard work would only increase if the matter was not addressed. This view was supported by the MPGA, who argued in its submission to the ACIL Allen review that inspections should be conducted more frequently.[5]

[5] ACIL Allen Review Report p.42

ACIL Allen's recommendation for funding reform

In making recommendations as to the reforms needed to address the shortcomings both in the funding model and the compliance regime, ACIL Allen identified two principles which it believed should form the foundations of how plumbing regulation should be financed:

User pays: the cost of plumbing regulation should be met by those who benefit from it.

Accountability: monies raised purportedly for plumbing regulation should not be spent on other activities.

In explaining the 'user pays' principle, ACIL Allen took the view that,

> "the beneficiaries of plumbing regulation are not just plumbing customers. All Western Australians benefit from plumbing regulation, which suggests that all Western Australians should contribute to the cost"[6].

ACIL Allen concluded that the current funding method fails to adequately meet the 'user pays' principle and that a more equitable approach would be to implement a levy on water service providers. ACIL Allen therefore recommended the introduction of a plumbing levy modelled on the Energy Safety Levy.

Energy Safety Levy

The Energy Safety Levy has been in place since 2006 and funds the technical safety regulation of electricity and most of the gas industry in WA. The levy is paid by electricity network operators, gas distribution system operators and gas distributors. The scheme has been operating successfully since its inception, is not contentious and no changes to it have been necessary.

The quantum of the Energy Safety Levy is calculated annually and is based on a business plan for the year. The business plan must include various elements – including a financial plan and a statement of intent – as set out in the governing legislation, and must be approved by the relevant minister. In turn, the minister is required to table the business plan in Parliament.

Notice of the amount of the levy must be published in the Government Gazette. Within six sitting days of its publication in the Government Gazette, the levy notice is required to be laid before Parliament, where it is subject to scrutiny. It is open to Parliament to pass a resolution disallowing the levy notice. In such cases, the amount notified in the previous year's levy notice, plus an amount relating to CPI, is the amount payable for the forthcoming year.

ACIL Allen found the Energy Safety Levy model to be appropriate, pragmatic and flexible, and recommended that it be adopted for the plumbing sector as well[7]. Further, ACIL Allen noted that changing the funding model to one involving a levy on water services providers would also meet other important criteria, such as:

Reduced red tape: A funding stream based on a small number of high value transactions is much simpler to administer than the current mechanism of funding plumbing regulation through a high volume of low-value transactions based on each instance of plumbing work; and

Certainty: Once the levy amount has been set, the regulator will be clear as to how much funding is available, and can plan its regulatory activity accordingly.

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[6] ACIL Allen Review Report p.87

[7] ACIL Allen Review Report p.86

The CRIS proposal

The CRIS discussed the pros and cons of ACIL Allen's recommendations and concluded that a plumbing levy tied to a best practice compliance and enforcement strategy that requires the regulator to submit to the Minister for Commerce five-yearly statements of corporate intent, annual business plans and annual reports, would enable government to provide a much-improved service to the community and the fairest and most equitable means by which to fund that service.

It would also ensure much greater transparency and accountability in the application of funds, more rigour in the compliance regime, and a reduction in red tape for both the industry and the plumbing regulator through the abolition of the compliance fee system. Crucially, it would also enable inspectors to spend less time chasing fees and more time conducting compliance inspections. In turn, this would enable the regulator to better direct its resources to the areas of greatest risk, i.e. non-compliant plumbing work and unlicensed plumbing work.

Stakeholder comment

In the CRIS, stakeholders were asked whether they supported the introduction of a plumbing levy payable by water service providers as a replacement for the current system of charging notification fees and fixture fees. As shown by Table 7 in Section 1 of Appendix D of this DRIS, the vast majority of stakeholders expressed strong support for the levy option.

Feedback from respondents who supported the levy proposal

In a detailed submission in response to the CRIS, the MPGA executive gave its full support for the levy model, commenting that the technical regulation of plumbing was currently underfunded and that the priorities must be to,

> *"take compliance enforcement seriously and generate sufficient revenue to pay for enough plumbing inspectors to properly enforce compliance with the regulations across WA."*

This was supported by the MPGA members' combined submission, which stated that changing to a levy model would,

> "*ensure that there is sufficient enforcement (inspectors) to police non-compliant plumbing work and have an increased focus on technical regulation which is currently unsatisfactory.*"

Other submissions from the plumbing industry said that the current system is inefficient, wrongly targeted, and both tedious and burdensome for plumbers and the regulator. They suggested that a levy model would be simpler and more cost effective and would offer a better and fairer structure that would improve the safeguards for consumers, all of whom use plumbing systems as part of their daily lives. The following extracts taken from submissions made by plumbers and plumbing businesses provide further illustration of the views of this particular stakeholder group.

- All consumers use plumbing systems (even if only when frequenting public buildings such as shopping centres, schools, hospitals and community centres) and so it is appropriate that the levy should apply to everyone.
- A levy model will remove the current unfairness between the plumbers who do comply with the compliance notification requirements (and thus pay the required fees) and those who don't comply with the notification requirements (and thus don't pay the correct amount of fees).

- The current system is a burden on business and business owners who should not be used as revenue collectors. A levy would be fairer as it would apply across the board regardless of the type of plumbing work carried out, the type of property in which the work is carried out, or the type and number of fixtures installed.

The plumbing unions similarly supported the introduction of a levy model to replace the current system, saying that self-funding had proven not to be successful and that the system was convoluted and subject to "*significant rorting and non-payment of fees*."

Other reasons provided in support of the levy model were that:

- Current oversight for plumbing is unsatisfactory, as evidenced by the issues with the Perth Children's Hospital and other major infrastructure projects. A levy will ensure a more consistent and efficient funding source.
- The removal of the requirement to pay installation fees should lead to a reduction in the cost of new builds and extensions (due to the fact that fixture fees will no longer apply.)
- A levy model would insulate the funding of the regulator in times of economic downturn or when there is a reduction in the amount of plumbing work being carried out in WA.

Feedback from respondents who did not support a levy model

Some seven per cent of the people who responded to this item in the CRIS stated that they did not support the introduction of a levy on water service providers to fund plumbing regulation. This included all four of the service providers who submitted comment on the CRIS, those being the Water Corporation, Aqwest, Busselton Water and Harvey Water.

A detailed account of the comments made in each service provider's submission is provided in the summary in Section 1 of Appendix D of this DRIS, but the two key themes that ran through them were:

(a) Disagreement with the notion that the community as a whole is the beneficiary of good plumbing regulation – the view being that because public health more broadly is protected by the backflow prevention controls that service providers require to be installed to protect the public water supply, the benefit of plumbing regulation is largely private and the cost should not therefore be borne by the broader community.

(b) As not all properties in WA are on scheme water, around 10 per cent of households would not be contributing towards the cost of providing a well-regulated plumbing sector but would nevertheless reap a benefit from such regulation through the plumbing services they receive from plumbers from time to time.

Each of those views was based on the assumption that the cost of the levy would ultimately be borne by the service providers' customers.

Aqwest further commented that because of poor compliance by some in the plumbing industry who are not paying the fees due under the current system, the government appeared to be "giving up" and passing the responsibility on to an unrelated body, namely the water service provider.

Funding models used in other jurisdictions

In its comments on the CRIS, the Water Corporation commented that greater consideration should be given to the funding models in operation in the other jurisdictions. Further research conducted by Building and Energy shows that each jurisdiction operates a slightly different model, with some operating a levy system, some charging audit and inspection fees and others charging compliance fees. Table 3 below shows the diversity that exists.

As each jurisdiction has a different framework for regulating plumbing, some of the funding models would not work in the WA context. It is therefore difficult to make comparisons to determine which jurisdiction operates the most appropriate mechanism.

Table 3. Funding models in other jurisdictions

Jurisdiction	Funding model for regulating plumbing compliance
ACT	Funding is provided as part of the Building Levy for Building Applications.
NSW	Funding is through a plumbing inspection audit fee for each inspection request.
QLD	For notifiable work, the plumber pays a permit fee to the Queensland Building and Construction Commission (QBCC). From these fees, the QBCC pays local governments to inspect and audit selected work. Local governments also charge an assessment and inspection fee for each job and set their own fee structures.
VIC	Compliance notification forms must be completed and submitted to the regulator for all work valued at more than $750. The forms must be purchased from the regulator at a cost of $36 each.
SA	Funding is provided through the water entities, such as SA Water, who pay a licence fee. A plumbing compliance team of around 16 FTEs (including administration staff) is funded through this mechanism.
TAS	Compliance functions are performed by local councils (who employ plumbing inspectors) and are funded from council rates with offsets from inspection and permit fees from plumbers.

Conclusion

There is little doubt that the model set up in 2004 to fund the regulation of plumbing and plumbing work in WA is now out-of-date and no longer effective in raising sufficient revenue to enable the plumbing regulator to carry out its compliance and enforcement functions effectively in today's much larger and more complex plumbing environment.

Inefficacy of the current model

The charging of installation fees copies the system that was operated by the Water Corporation when it was the plumbing regulator prior to the establishment of the PLB in 2004. This system bears no relation to the regulation of plumbing today because neither the PLB nor Building and Energy has any involvement in providing or maintaining any aspect of the State's wastewater management infrastructure.

Additionally, in the period since the compliance certification and installation fee system was first adopted for the technical regulator functions of the PLB, the WA economy has experienced strong growth and the size of both the population and the plumbing industry has increased significantly.

As a consequence, a far greater number of compliance certification forms are being submitted to the PLB now than when the scheme was first introduced in 2004. This has increased the administrative burden both for plumbers and the PLB to the point where many in the plumbing industry now regard the system as unnecessary red tape.

While the recent introduction of an online system for the submission of compliance notices (known as the Plumbing e-Notice system) has eased the administrative burden to some degree, the following problems with the current funding model still remain:

- Linking revenue collection to the compliance notification process incentivises the under-reporting of work to avoid the payment of fees, especially in times of economic downturn.
- Because of the high rate of non-compliance with the notification requirements and the consequential impact that has had on revenue, around 20 per cent of plumbing inspector resources have had to be diverted to carrying out audits of plumbers' paperwork in order to chase fees. With only 11 plumbing inspectors to cover the whole State, this is time that would be much better spent on inspecting plumbing work, investigating non-compliance with the plumbing technical standards, and following up on unlicensed work.

Taking all of the above into account, the inevitable conclusion to be drawn is that the current model is no longer fit for purpose and is in urgent need of replacement.

Decision

The funding of plumbing regulation must be placed on a better footing and must be decoupled from the compliance notification process. Accordingly, the current system of charging fixture fees, notification fees and certification fees is to be replaced.

The Terms of Reference for the review conducted by ACIL Allen in 2013-14 included providing advice on alternative means for funding plumbing regulation in the future.

The work undertaken by ACIL Allen identified that the best option for reforming the way plumbing regulation is funded would be to replace the current system with a levy on water services providers, similar to the way in which the regulation of the safety aspects of the electricity and gas industries in WA is funded. ACIL Allen based their findings on the success of the Energy Safety Levy model.

Although the majority of respondents to the CRIS supported ACIL Allen's recommendation, the consultation with water services providers identified a number of issues that require more detailed examination. Building and Energy will therefore continue to engage with water service providers and the government on the development of a revised funding model. The current fee-based system will remain in operation until the new funding model has been developed.

The other important reforms set out in the remainder of this DRIS will proceed irrespective of, and in tandem with, the further work on developing an alternative funding model.

Decision One

The current model for funding the compliance and enforcement activities of the plumbing technical regulator is to be replaced once the development of a suitable alternative funding source has been finalised.

2.2 Decision Two – The technical regulator

Since July 2004, the roles of licensing administrator and technical regulator have been held by the PLB. The PLB operates within the Building and Energy Division of the Department of Mines, Industry Regulation and Safety (DMIRS), whose staff provide administrative, accounting and regulatory support to the PLB.

As part of their review of plumbing regulation in WA, ACIL Allen was asked to evaluate the current governance and decision-making arrangements and make recommendations accordingly. In their report, ACIL Allen identified the need for four types of decision-maker:

(a) a licensing authority who sets the licensing categories and the criteria for obtaining a licence;
(b) a licensing administrator who assesses applications against the criteria; issues licences to applicants who meet the criteria; and deals with disciplinary matters pertaining to licence holders;
(c) a technical standards authority who sets the technical rules for plumbing work; and
(d) a technical regulator who ensures compliance with the technical rules.

The above four roles are occupied currently by the Minister for Commerce; the PLB; the Australian Building Codes Board (ABCB)[8]; and the PLB respectively.

ACIL Allen concluded that efficiencies could be gained by restructuring the current roles of licensing administrator and technical regulator. However, they did not make any specific recommendations for change and set out only general principles.

In preparing the CRIS, Building and Energy identified various options based on the general principles identified by ACIL Allen, and asked Marsden Jacob to evaluate each one as part of the regulatory impact assessment process.

Impact analysis

Marsden Jacob adopted a principles-based approach to their impact analysis for each of the options under consideration. This involved assessing each option against a range of governance criteria and using a 'traffic light' system to highlight areas of relative strength (●), potential improvement (●), and relative weakness (●). This is explained in section 3.3 of Marsden Jacob's report at Appendix A of this DRIS.

The governance criteria were drawn from published best practice governance principles and covered the following:

- clarity of role and purpose;
- authority and decision-making;
- accountability;
- efficiency;
- transparency; and
- durability.

[8] Under the Inter-governmental Agreement for the Australian Building Codes Board, which provides for the continuing existence and operation of the ABCB as the national standard-setting body for plumbing work in Australia.

The options were further refined following Marsden Jacob's evaluation, and the CRIS subsequently sought comment on the following four scenarios, with Option 4 being the preferred option based on Marsden Jacob's methodology.

Option 1 Retain the status quo.

Option 2 Establish an independent 'plumbing technical regulator' and an independent 'plumbing technical registration board' supported by an independent office of the technical regulator, all reporting directly to a minister. (This model was developed in response to the ACIL Allen report by an industry group comprising the MPGA, Plumbing Trades Employees Union (PTEU), Institute of Plumbing Australia Inc and the WA Chapter of the Association of Hydraulic Services Consultants of Australia.)

Option 3 Retain the PLB as the licensing administrator but transfer the role of technical regulator to the Building Commissioner supported by staff from DMIRS. (This option would take the PLB back to its original role as a licensing body only.)

Option 4 Dissolve the PLB and transfer all its functions to the Building Commissioner supported by staff from DMIRS.

Consultation feedback

As detailed in the summary in section 2 of Appendix D of this DRIS, the responses to the CRIS showed that of the four options, the one overwhelmingly supported by the MPGA executive submission, the MPGA members' combined submission, the majority of the industry associations and one of the two plumbing unions (some 81 responses in total) was the option put forward by the plumbing industry itself (Option 2).

The MPGA executive commented that it was,

> "*long overdue for the State Government to introduce an independent, adequately-funded technical regulator in addition to overhauling plumbing regulation.*"

and that the industry,

> "*requires a self-sustaining, autonomous statutory body (the Plumbing Technical Regulator) that is appointed by, and reports directly to, the minister and which operates and meets the needs of the industry*."

The MPGA executive submission linked its views to the findings of a 2012 report published by the Office of the Auditor General (which was critical of the support given to the PLB by the former Department of Commerce) and to Findings 45 to 47 of the Public Accounts Committee's inquiry into Perth Children's Hospital. The MPGA said that not only were those findings:

> *"proof that WA needs a strong technical regulator with sufficient funding to employ enough inspectors to conduct thorough investigations and identify non-compliant work…."*

but they were also evidence of,

> "*the consequences of ignoring the advice of industry stakeholders and persisting with a failed funding model and organisational structure.*"

Among the other stakeholder groups who responded to this aspect of the CRIS, it is interesting to note that almost the same number of submissions as were received for Option 2 were also received for Option 3 (retain the PLB as a licensing body but transfer its current role as technical regulator to the Building Commissioner supported by staff from DMIRS). Options 1 and 4 received only one per cent and seven per cent of the support respectively.

Analysis of the options

Option 1

Having reviewed each of the four options in the light of the feedback received during the consultation process, Building and Energy is of the view that the new DMIRS structure now in place as a result of the 2017 'Machinery of Government' changes, together with the introduction of a more efficient funding model as discussed in Decision One of this DRIS, creates the opportunity to put in place a more streamlined administrative structure that supports the reforms outlined in this DRIS and creates efficiencies for both industry and the regulator. On that basis, Option 1 (keeping the status quo) is not supported.

Option 2

While recognising the industry's desire for a regulator that is completely independent of the public service (as per Option 2), it must be noted that such a model is not consistent with current government policy on boards and committees. In addition, it was not supported by the evaluation conducted by Marsden Jacob, who found the industry's proposed model to be more inefficient than the other options (due to its relative expense in seeking the desired outcomes), and lacking in clarity of role and purpose and in the ability to accommodate changes in the economic, industrial and political environments. Taking each of those things into account, it is the view of Building and Energy that the option preferred by the plumbing industry (Option 2) does not represent the optimal model for restructuring the regulator.

Options 3 and 4

Option 3 received strong support from respondents and also scored well under the Marsden Jacob modelling.

In contrast, Option 4 received little support from those who responded to the CRIS, but was the preferred model under the methodology used by Marsden Jacob.

While both Option 3 and Option 4 would provide the efficiencies sought, the advantage that Option 3 has over Option 4 is that the role of licensing administrator would continue to be held by a group of people with a diversity of skills and experience, as opposed to just one individual. Moreover, as the role of 'technical standards authority' (to use ACIL Allen's terminology) in all Australian jurisdictions is held nowadays by the ABCB through the Intergovernmental Agreement signed by all the states and territories and the Commonwealth, the argument for assigning a technical role to a board is much less tenable, particularly as that role is already largely delegated to inspectors who are public servants rather than employees of the PLB.

Decision and impacts

In the light of the conclusions reached by Marsden Jacob and the feedback received in response to the CRIS, the view is that Option 3 provides the optimum model for the regulation of plumbers and plumbing work going forward.

This would mean that the PLB would be retained as the licensing administrator (supported as it is now by staff from DMIRS), but its role as technical regulator would pass to the Building Commissioner, supported (as the PLB is now) by staff from DMIRS. To reflect the change of role for the PLB, revisions to the composition of the PLB are also considered appropriate.

There are no financial impacts associated with this decision.

Decision Two

The governance structure for plumbing regulation is to be reformed such that:

(a) the role of 'licensing authority' will continue to be held by the relevant minister;

(b) the role of 'licensing administrator' will continue to be held by the PLB, supported by staff from DMIRS;

(c) the role of 'technical standards authority' will continue to be held by the ABCB (to the extent that the IGA remains in force);

(d) the role of technical regulator will pass from the PLB to the Building Commissioner supported by staff from DMIRS.

In recognition of the PLB's more streamlined role - and ACIL Allen's recommendation that the composition of the PLB should be based on the skills required rather than on the organisations from which board members should be selected - it is further proposed to alter the membership of the PLB such that it is composed of an independent chairperson and seven members as follows:

- a member who is an LPC;
- a member with knowledge and experience of the plumbing industry;
- two members with the ability to represent the interests of consumers;
- a member with a background of, and qualifications in, administrative law;
- a member with knowledge and experience in training and assessing in a trade training environment; and
- a public servant from the department principally assisting the minister with the administration of the Plumbing Act.

2.3 Decision Three - The definition of "Plumbing work"

The Scope of the Plumbing Act

Currently, the Plumbing Act defines 'plumbing work' (and thereby the scope of work covered by WA's plumbing laws) as being "*work of a kind specified [in the Plumbing Regulations] to be water supply plumbing, sanitary plumbing or drainage plumbing*."[9]

ACIL Allen found that definition to be too inflexible to keep pace with advances and trends affecting the industry and recommended that it be changed.

CRIS proposal and stakeholder feedback

To address the need for greater flexibility, the CRIS discussed options to change the way the 'boundaries' of regulated plumbing work are set, and proposed that the definition of 'plumbing work' in the Plumbing Act be focused on the tasks involved rather than the different branches of plumbing work.

The responses to the CRIS showed overwhelming support for this proposal, with most respondents agreeing that it would provide the flexibility that is needed. Section 2 of Appendix D provides further information about the feedback received.

Conclusion

Having considered matters further in the light of the consultation feedback, the definition of 'plumbing work' in the Plumbing Act is to be recast as set out in Decision Three below.

Decision Three

The scope of the principal Act is to be revised such that it applies to work prescribed in the Plumbing Regulations as the design, construction, testing, installation, alteration, extension, replacement, repair or maintenance of pipes, fixtures, fittings, devices or apparatus used or intended to be used to convey water, wastewater and other wastes.

To deliver the required flexibility, it is envisaged that the Plumbing Act will include a power to make regulations to prescribe work other than that listed above as plumbing work to which the Plumbing Act applies, and to prescribe certain areas of work as not being plumbing work to which the Plumbing Act applies. Such regulations would only be made following appropriate consultation and in accordance with the principles of best practice regulation.

Impact analysis

There are no financial impacts relating to this decision and no adverse impacts are expected.

[9] Section 59I of the Plumbing Act

2.4 Decisions Four to Eight

2.4.1 Decision Four – Definition of "Water Supply Plumbing Work"

Currently, the definition of 'water supply plumbing work' in the Plumbing Regulations restricts the scope of such work to that which involves potable water supplied through a meter assembly[10].

This means that the Plumbing Act does not currently apply in cases where drinking water is supplied through other means, such as rainwater tanks, bores and private water treatment plants, and does not apply to non-drinking water (e.g. greywater or blackwater).

As a result, the Plumbing Act does not require tasks such as the installation of a water supply system in a property that receives its water supply from a rainwater tank; or the installation of a system that uses greywater to flush toilets, to be carried out by an LPC.

The ACIL Allen review identified this as an issue that needed to be addressed.

CRIS proposal

In light of ACIL Allen's recommendation, the CRIS proposed to broaden the scope of regulated water supply plumbing work by removing the terms "a meter assembly" and "potable" from the definition of water supply plumbing work in regulation 4(1)(a) of the Plumbing Regulations. This would have the effect of bringing both non-scheme drinking water services and non-drinking water services within the scope of the plumbing legislation.

It was further proposed in the CRIS that the definition of water supply plumbing work should align more closely with the definition used in the PCA.

As the effect of broadening the scope of water supply plumbing work in this way would be to extend the requirement to use a licensed plumber to properties and localities across the State that are not on scheme water, the CRIS also canvassed views as to whether there should be an exemption for owner-occupied private properties located in remote parts of WA that have limited access to a licensed plumber (e.g. private farm houses and homesteads).

Stakeholder feedback

As detailed in Section 3 of Appendix D of this DRIS, the responses to the CRIS were overwhelmingly supportive of the proposal to broaden the scope of water supply plumbing work to include non-scheme drinking water services and non-drinking water services.

However, there was little support for any exemption on the grounds of remoteness. The general view expressed in relation to that particular issue was that the protection of the drinking water supply is as important in remote areas as it is anywhere else and that it is essential for the protection of public health that non-drinking water is tightly regulated regardless of where in the State it is used.

The argument was also made that as there is currently no such exemption applying to sanitary plumbing work or drainage plumbing work carried out in remote areas, it is not logical for one to apply in relation to water supply plumbing work.

[10] Regulation 4(1)(a) of the Plumbing Regulations

Decision and impact analysis

Marsden Jacob conducted cost modelling on the impact of the proposed change as part of the development of the CRIS and recommended that the scope of plumbing work be broadened to include both non-metered drinking water and non-drinking water. This is detailed in Section 3.4 of the Marsden Jacob report at Appendix A.

Having reviewed matters further in the light of the extensive comment made during the CRIS consultation process, Building and Energy is of the view that the scope of 'water supply plumbing work' should be amended as set out in Decision Four below.

Decision Four

The following work is to be prescribed as **water supply plumbing work** in the Plumbing Regulations:

(a) Drinking water services

Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of a cold water service or a heated water service that is connected or intended to be connected to the drinking water supply, from the point of connection to the points of discharge[11].

The term 'point of connection' is intended to mean the point where the internal service pipe connects to the network utility operator's service or to an alternative drinking water supply system (e.g. a rainwater tank). However, it does not include any part of the operator's service nor any part of the collection and storage system for an alternative drinking water supply system (e.g. a rainwater harvesting system that collects rainwater from a roof catchment).

(b) Non-drinking water services

Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of a non-drinking water service that is connected or intended to be connected to the non-drinking water supply from the point of connection to the points of discharge[12].

The term 'point of connection' is intended to mean the point where the internal service pipe connects to the operator's service or to an alternative non-drinking water supply system (e.g. a recycled water supply system). However, it does not include any part of the operator's service nor any part of the collection and storage system for the alternative non-drinking water supply system (e.g. a recycled water supply system that collects and treats the alternative water supply).

The technical standards that will apply in relation to non-drinking water will be those contained in Part B3 of the PCA.

[11] See also Decision Six in relation to garden irrigation systems.
[12] ibid

2.4.2 Decisions Five and Six – Definitions of "Sanitary Plumbing Work" and "Drainage Plumbing Work"

CRIS proposal

ACIL Allen identified that the current definitions of 'sanitary plumbing work' and 'drainage plumbing work' in the Plumbing Regulations could and should be made clearer.

The CRIS therefore proposed revised definitions of both terms, with the aim of addressing ACIL Allen's finding and creating better alignment with the corresponding definitions in the PCA.

Stakeholder feedback

Although the vast majority of submissions agreed with the proposed definitions in the CRIS, some expressed concern about the implications of including references to on-site wastewater management systems (OWMS) and approved disposal systems (ADS) in each definition.

This was linked to a discussion in section 4.2.7 of the CRIS around the possible adoption of the construction and installation aspects of Part F1 of the PCA (On-site Wastewater Management Systems) as licensed plumbing work. As a number of stakeholders did not support the extension of the plumbing laws to cover the installation and construction of OWMS and ADS, they were similarly opposed to the inclusion of references to such systems in the proposed definitions.

Having reviewed the proposed definitions of 'sanitary plumbing work' and 'drainage plumbing work' in light of the concerns raised, Building and Energy is satisfied that the inclusion of references to OWMS and ADS will not, in and of itself, bring the construction and installation of such systems within the scope of regulated plumbing work. On that basis, the issues raised by many stakeholders about the potential impact of the proposed definitions of 'sanitary plumbing work' and 'drainage plumbing work' are not expected to eventuate.

Decision and impact analysis

Taking everything into account, it is intended to amend the definitions of 'sanitary plumbing work' and 'drainage plumbing work' as set out in Decisions Five and Six below.

As the new definitions make no substantive change to the scope of work already covered under the Plumbing Act, no adverse impacts are expected from this change.

Decision Five

The following work is to be prescribed in the Plumbing Regulations as **sanitary plumbing work**:

Work involving the design, construction, installation, replacement, connection, disconnection, ventilation, repair, alteration or maintenance of pipes, fittings and fixtures used or intended to be used to collect and convey wastewater or other waste from a property to a sanitary drainage system, an on-site wastewater management system or an approved disposal system*.

*an 'approved disposal system' is intended to mean a system that has been approved by the Department of Health for the disposal of sewage and sullage.

Decision Six

The following work is to be prescribed in the Plumbing Regulations as **drainage plumbing work**:

Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of underground pipes and other fittings used or intended to be used to convey discharge from a sanitary plumbing system of a property to a sewerage system, an on-site wastewater management system or an approved disposal system*.

*an ‘approved disposal system’ is intended to mean a system that has been approved by the Department of Health for the disposal of sewage and sullage.

2.4.3 Decision Seven – Garden reticulation plumbing work

The proposal to bring non-drinking water within the scope of regulated plumbing work, together with ACIL Allen's observation that there was confusion among stakeholders about whether the installation and maintenance of garden reticulation systems could be done by non-plumbers, led to the inclusion of a discussion on this topic in the CRIS.

CRIS proposal

The proposal put forward for public consultation was twofold. The first part dealt with reticulation systems that use drinking water. The second part dealt with systems that use non-drinking water.

Stakeholders were specifically asked whether:

(a) in the case of drinking water, garden reticulation work downstream of the backflow prevention device should be treated as outside the scope of the Plumbing Act and thus able to be carried out by any person and not just a licensed plumber; and

(b) in the case of non-drinking water, whether garden reticulation work downstream of the point of connection to the non-drinking water supply should be treated as outside the scope of the Plumbing Act and thus able to be carried out by any person and not just a licensed plumber.

Stakeholder feedback

The extent of the feedback received in response to the CRIS showed the relative complexity of the issues involved, particularly in relation to the use of greywater and recycled water.

(a) Reticulation systems that use drinking water from a mains supply (i.e. 'scheme water')

The comments received from stakeholders who supported the proposal relating to reticulation systems that operate using drinking water from a mains supply were generally to the effect that so long as an appropriate type of BPD is installed by a licensed plumber, the risk of contamination downstream of the isolating valve is low and does not therefore warrant the specialist skills of a licensed plumber. Moreover, as a water service provider-compliant BPD will also be present at the meter, the risk of contamination for the broader community is even smaller.

This was echoed by the WA Department of Health, who commented that there is "negligible public health risk" and that such work is currently being done by irrigators, with no human health impacts. The Small Business Development Corporation (SBDC) submission lent further weight to the argument by saying that there was a lack of compelling evidence in the CRIS to suggest that this work should become licensed plumbing work.

One stakeholder also raised the issue of regulatory burden, saying that including this sort of work as plumbing work would "*create a significant cost burden for a low-risk activity*". The same stakeholder went on to say that it was also "*unrealistic to expect a homeowner to wait for a plumber to fix a broken sprinkler. The loss of water would be enough to outweigh the benefits of it being plumbing work.*"

For its part, the MPGA executive submission, supported by the two submissions received from unions, agreed that, provided a BPD was installed by a plumber, anything downstream of that device should be classed as outside the scope of plumbing work for the purposes of the Plumbing Act.

Among the minority of stakeholders who said they did not support the proposal, the main reason given was that the risk of contamination of the drinking water supply was too great for the work not to be done by a licensed plumber.

Another stakeholder commented that he had seen many occasions where a reticulation system had been installed by a non-plumber without any BPD having been fitted. His argument was that if the work was required to be done by a plumber, he or she would know that a BPD needed to be installed and would therefore ensure that was done.

Other comments from those opposed to the proposal included the following:

- *It is separating the [plumbing] industry. Everything downstream of the meter should be licensed plumbing work.*
- *It gives unlicensed people a right to access scheme water, which will create misuse of the water supply as unlicensed people can install outdoor taps, showers etc. off this supply.*
- *Trained plumbers need to look after all water supply services.*

(b) Reticulation systems that operate from a non-scheme water supply

For the purposes of this discussion, the term “non-scheme water supply” means:

- non-scheme water of drinking water quality (e.g. rainwater or treated recycled water); and
- non-scheme water **not** of drinking water quality (i.e. greywater).

(i) Non-scheme water of drinking water quality

The responses to the CRIS indicated that stakeholders’ reasons for and against the proposal relating to garden reticulation work downstream of a connection to a non-scheme drinking water supply (such as from a rainwater tank) were largely consistent with those for reticulation schemes that operate using drinking water from a mains supply (see paragraph (a) on page 30 above).

(ii) Non-scheme water not of drinking water quality

Domestic greywater systems generally enable the householder to reuse water from baths, showers, laundry troughs and washing machines for garden irrigation.

The Department of Health imposes requirements relating to greywater systems used for irrigation purposes. One such requirement is that untreated greywater can only be used for sub-surface garden irrigation.

The general feedback on the CRIS was that more caution needs to be observed in relation to the use of greywater, with the comment being made that there is significant variation in the quality and potential health risks of a non-drinking water source.

The MPGA executive submission went further, saying that if the water,

> "*carries effluent or treated greywater, blackwater or rainwater (recycled water) and is entering a property, it must be deemed as plumbing work. There are serious risks of cross contamination and backflow can occur when this type of plumbing is installed or maintained by unqualified people*."

Conversely, those stakeholders in or representing the irrigation, greywater and wastewater industries were of the view that it was not necessary for the installation of the reticulation system downstream of the point of connection to the non-drinking water supply to be carried out by licensed plumbers and that non-plumbers should be permitted to do the work provided that they are appropriately trained and skilled.

The point was also made that plumbers are not, as a matter of course, trained in the design and installation of these types of irrigation systems. The following extract from one of the submissions to the CRIS illustrates this point of view:

> *"Irrigation, generally, is not performed by plumbers but by a whole irrigation industry (of stores, irrigation designers, irrigation installers and service technicians, with an industry body – Irrigation Australia, and its own training package certification (Cert[ificate]1 through to Diploma) which currently operates Australia-wide…. Plumbers in WA receive no trade training on irrigation, apart from backflow prevention when doing a cut-in for normal household irrigation systems. They do not have the knowledge and skills for sizing irrigation fields, undertaking hydraulic calculations to determine pump selection, installation equipment and methods, and irrigation type and characteristics."*

Another stakeholder pointed to the overlap with the health legislation in this area, saying that, "*these systems are already adequately controlled by the health legislative framework. Additional regulation would be red tape for little value*."

Further information about the feedback received is provided in Section 6 of Appendix D.

Decision

Having considered the issues and potential impacts in the light of the consultation feedback, the conclusion reached is that the risks involved with garden reticulation work are such that some aspects of the work can be safely carried out by people who are not licensed plumbers. Accordingly, the regulation of garden reticulation work is to be managed as set out in Decision Seven on the following page. Further clarification is provided in the table at Appendix B.

Impact analysis

As this decision largely clarifies the existing position and does not in itself make any change to the scope of the Plumbing Act or Regulations, no adverse or financial impacts are expected as a consequence of its implementation.

Decision Seven

(a) For reticulation systems that run off a scheme water supply, cutting in to the drinking water supply and installing the required isolating valve and BPD is work that must be carried out by a licensed plumber. Garden reticulation work downstream of the BPD can be carried out by any person.

(b) For reticulation systems that run off a rainwater tank or a bore that supplies drinking water, cutting in to the drinking water supply and installing the required isolating valve and BPD is work that must be carried out by a licensed plumber. Garden reticulation work downstream of the BPD can be carried out by any person.

(c) For reticulation systems that run off a rainwater tank or a bore that supplies water **only** for the purposes of irrigation (and thus does not need a BPD to be installed), all work relating to that installation can be carried out by any person.

(d) For reticulation systems that use untreated greywater, work carried out upstream of the in-ground diversion vessel (including a greywater diversion device) is required to be carried out by a licensed plumber. Work relating to the installation or maintenance of the in-ground diversion vessel, or anything downstream from that point, can be carried out by any person.

(e) For reticulation systems that use treated greywater, work carried out upstream of the treatment vessel (including a greywater diversion device) is required to be carried out by a licensed plumber. Work relating to the installation or maintenance of the treatment vessel itself, plus any work downstream of that unit, can be carried out by any person.

(f) For reticulation systems that use black/recycled water (i.e. treated wastewater from an on-site treatment unit), work carried out upstream of the treatment unit is required to be carried out by a licensed plumber. Work relating to the installation or maintenance of the treatment unit itself, plus any work downstream of that unit, can be carried out by any person. (This is linked to the discussion around on-site wastewater management systems in section 2.5 on pages 43-50 below.)

2.4.4 Decision Eight – Testing and maintaining plumbing safety devices

Devices such as BPDs and thermostatic mixing valves (TMVs) play a vital role in ensuring that plumbing systems are kept safe.

Currently, the plumbing legislation in WA mandates the installation of such devices by an LPC where required by the relevant Australian Standards. However, there is no requirement for the devices to be maintained in proper working order once they have been installed.

As the requirement to install safety devices is weakened by the lack of a corresponding maintenance requirement, the CRIS proposed expanding the scope of the Plumbing Act to address this by placing duties on owners and persons with control of high-risk facilities to ensure that BPDs and TMVs installed within the plumbing system for the facility are regularly tested and adequately maintained.

(a) BPDs

CRIS proposal

Key plumbing industry stakeholders such as the PLB, the MPGA and the Plumbing Institute of Australia Inc. have long advocated for mandatory BPD testing and maintenance requirements to be placed on the owners and managers of buildings where there is a high risk of contamination to the water supply (for example laboratories, abattoirs and manufacturing facilities) and facilities housing vulnerable people (for example, nursing homes, rehabilitation centres and hospitals).

The CRIS discussed a proposal to introduce duties in relation to specific types of high-risk facilities to ensure that testable backflow prevention devices are maintained and tested in accordance with manufacturers' specifications and the schedule set out in Table 2.1 of Australian Standard AS 2845.3 *Field testing and maintenance of prevention devices*. This would require:

- inspection and testing to be carried out after installation, after maintenance or repair and at intervals of not more than 12 months (the testing would need to be carried out in accordance with the requirements of the Standard and the manufacturer's specifications); and
- the preparation of a test report which includes the type of test (i.e. annual, re-test or initial commissioning), the type and serial number of the device, details of the owner/property, the inspection date and the result of the inspection.

The specific types of high-risk facilities to which this proposal would apply are:

- communal residential facilities;
- buildings that members of the public would normally use;
- buildings to which members of the public are permitted access; and
- buildings where employees are at risk (e.g. manufacturing facilities, laboratories or abattoirs).

The above list captures those properties where the risk of harm is highest, but seeks to ensure that the reform does not impose an unnecessary degree of regulatory burden.

Stakeholder comment

As shown in Table 12 in Appendix D, all bar one of the submissions received in response to the consultation on BPDs supported the proposal that legislation be introduced to require owners/occupiers of certain categories of building to carry out regular testing and routine maintenance of such devices. The one submission that did not support the proposal did so on the grounds that the number of reported incidents of the failure of a BPD was low.

Although little empirical evidence was submitted by respondents, the reasons given for supporting the proposal were largely based on the premise that it would better protect public health, particularly for the most vulnerable sections of society.

Another general theme that ran through many of the submissions provided by the plumbing industry was that as the water service provider has strong controls around the requirement to adequately maintain backflow protection devices at the boundary of a property to protect the public supply, it made little sense for the same not to apply within the property itself to protect the occupants of that individual property.
In its submission, the MPGA executive said that BPDs are essential for preventing serious contamination of drinking water that can lead to disease or death. They said it was also an insurance risk.

The following extracts from the submissions provide a broad overview of the comments made by those who supported the proposal in the CRIS.

- *Installation is irrelevant if maintenance is not enforced.*
- *Like any mechanism, [a BPD] needs servicing.*
- *Devices are installed because a risk has been identified. To ensure continuous safety, the onus should be on the facility owner/manager.*
- *We are now fitting so many devices [on major projects] and they need to be serviced annually. Should be policed.*
- *Too dangerous to leave uncontrolled; should be dealt with by good corporate governance but in some cases this does not occur; experience in aged care facilities leads me to believe that unless it is enforced, it does not happen.*
- *[BPDs] are prone to malfunction caused by debris in the water supply. Testing would be a positive step, especially for high-risk situations. Many devices fail their first 12 month test due to grit damaging the seal, which then needs to be replaced.*

Decision on BPDs

Having considered the range of comment received on this topic, the conclusion reached is that the risks associated with the failure of a BPD due to poor or non-existent maintenance are such that the implementation of mandatory inspection and testing requirements through the Plumbing Act is warranted.

These requirements should be consistent with the schedule set out in Table 2.1 of Australian Standard AS 2845.3 *Field testing and maintenance of prevention devices* and manufacturer's specifications. This means that the requirements will apply in relation to testable BPDs i.e. high hazard and medium hazard BPDs, but not for non-testable (i.e. low hazard) BPDs.

Building and Energy has researched the position in the other jurisdictions across Australia and, as demonstrated by the table at Appendix C of this DRIS, has identified that the implementation of a testing requirement in WA would be consistent with the majority of the other states and territories.

Impact analysis

For the purposes of the CRIS, Building and Energy conducted a risk analysis to determine the risk rating (extreme, moderate or low) associated with a failure of each of the three types of BPD (low hazard, medium hazard and high hazard), and the impact on that risk if an annual testing program were to be put in place. This showed that for both high hazard and medium hazard BPDs, an annual testing program would reduce the risk rating from 'extreme' to 'low'. For low hazard BPDs, the risk would remain constant at 'low'.

The cost benefit analysis conducted by Marsden Jacob to accompany the CRIS concluded that although the benefits of annual testing of BPDs may not sufficiently outweigh the costs, further consultation should be undertaken (see Section 3.6 of the Marsden Jacob report at Appendix A).

While the CRIS consultation process did not elicit much more in the way of empirical evidence of device failures, the responses did serve to reinforce the notion that the lack of any mandatory testing requirement undermines and compromises the requirement for BPDs to be installed in the first place. Moreover, there was general agreement that the risk analysis carried out by Building and Energy was sufficient in itself to warrant government intervention through regulation.

(b) TMVs

A TMV is a valve that blends hot water with cold water to achieve a temperature that avoids scalding while still ensuring that stored heated water is kept at a sufficiently high temperature to protect against harmful bacteria such as legionella.

Under the plumbing legislation in WA, all new heated water installations and all replacement solar water heater installations used primarily for personal hygiene purposes in facilities and buildings for the aged, sick, children or the disabled must be fitted with a complying temperature control device that is adjusted to an outlet temperature not exceeding 45ºC. Clause 1.9.2 of Australian Standard AS 3500.4 requires this temperature control device to be a TMV. An almost identical provision applies in relation to all other types of facility and building, albeit with a maximum temperature limit of 50ºC.

The purpose of these mandatory temperature controls is to reduce the risk of scalding, particularly when the water is heated by an uncontrolled heat source such as solar power.

Given the importance of TMVs in protecting vulnerable people such as residents of nursing homes, aged care facilities and homes for people with a disability, it is important that TMVs are properly maintained and regularly tested by appropriately qualified people.

CRIS proposal

As with BPDs, although the plumbing legislation requires any testing and maintenance work to be done by licensed plumbers, there is no corresponding requirement for owners or occupiers of premises to put in place an appropriate maintenance and testing program for TMVs installed on their premises or to call in a plumber to undertake that work.

The CRIS therefore proposed the introduction of legislation to require owners/managers of the following types of high-risk facility to ensure that TMVs are kept in good condition and proper working order in accordance with manufacturers' specifications and Australian Standard AS 4032.3 *Thermostatic Mixing Valves – Materials, Design and Performance Requirements*:

- aged care residential accommodation (including nursing homes);
- healthcare buildings;
- childcare centres, primary schools and secondary schools; and
- residential accommodation for the disabled.

Stakeholder comment

As shown in Table 13 in Appendix D, the analysis of the submissions received in response to this issue in the CRIS showed strong support for the proposal to regulate the testing and maintenance of TMVs. Only one submission did not support the proposal in the CRIS. No reason was given for that view.

The reasons provided by those who did support the proposal were again largely based on public health grounds, as shown in the extracts quoted below.

- *Because there is a cost involved it does not get done, no matter the advice provided. Until someone gets injured.*
- *Will avoid liability and protect workers and occupants of these facilities.*
- *We cannot allow children or the elderly to be scalded.*
- *Product [manufacturing] standards require annual testing and 5-yearly servicing but no-one regulates this.*
- *Scalding is an obvious risk and water temperature has been legislated to be controlled because of such risk.* (Note: this respondent said he had recently worked on a nursing home where the valves were 25 years old but he was told not to replace them. He said legislative back-up would prevent this problem.)
- *All valves can fail due to lack of maintenance. The result of a failed TMV can be major as they are installed for protection of [the] elderly, [the] sick and children.*

In the MPGA executive submission, the comment was made that as a defective TMV can result in serious burns, it was in the interests of public health and safety for the testing regime set out in the Australian Standard to be made a legal requirement.

Decision on TMVs

Having reviewed this issue in the light of the feedback received during the consultation process, the conclusion reached is that mandatory testing of TMVs in accordance with Australian Standard AS 4032.3 *Thermostatic Mixing Valves – Materials, Design and Performance Requirements* should be implemented, as per the proposal set out in the CRIS.

Impact analysis

The economic analysis conducted by Marsden Jacob to accompany the CRIS indicated that the additional costs that would arise as a result of this change would be expected to result in the delivery of a number of benefits, by far the most of which are avoided risks to human safety and health. Marsden Jacob concluded that it appeared likely that requiring the maintenance and testing of TMVs would save at least one life over a 20-year period (or 0.05 lives per annum) and on that basis it should be implemented. (See section 3.6 of the Marsden Jacob report at Appendix A.)

Decision Eight

The scope of the Plumbing Act is to be broadened to require owners/persons with control of high-risk facilities* to put systems in place to ensure that plumbing safety devices such as BPDs and TMVs are inspected, tested and maintained by an LPC in accordance with manufacturers' specifications and the relevant Australian Standards.

*In the case of BPDs, high-risk facilities are: communal residential facilities; buildings that members of the public would use (e.g. hospitals); buildings to which members of the public are permitted access; and buildings where employees are at risk from cross contamination (e.g. manufacturing facilities, laboratories, abattoirs.)

*In the case of TMVs, high-risk facilities are: aged-care residential accommodation; healthcare buildings; childcare centres and schools; and residential accommodation for the disabled.

2.5 Decision Nine – The Plumbing Code of Australia (PCA)

Since 1 May 2015, the PCA has been the primary technical standard for plumbing and plumbing work in WA. The PCA forms part of the National Construction Code (NCC) and contains a nationally-uniform set of technical provisions for the design and installation of plumbing and drainage systems in new and existing buildings. It is updated on a three-yearly basis. The most recent edition (PCA 2019) was published on 1 May 2019.

At the time of drafting the CRIS, the edition of the PCA that was in force (PCA 2016) covered the following scopes of work:

- Cold water services (Part B1 of the PCA)
- Heated water services (Part B2 of the PCA)
- Non-drinking water services (Part B3 of the PCA)
- Fire-fighting water services (Part B4 of the PCA)
- Sanitary plumbing systems (Part C1 of the PCA)
- Sanitary drainage systems (Part C2 of the PCA)
- Roof drainage systems (Part D1 of the PCA)
- Surface and subsurface drainage systems (Part D2 of the PCA)
- Heating, ventilation and air-conditioning systems (Part E1 of the PCA)
- On-site wastewater management systems (Part F1 of the PCA)
- On-site liquid trade waste systems (Part F2 of the PCA)

Each state's and territory's legislation adopts the PCA, subject to the variation or deletion of some of its provisions, or the addition of extra provisions, to suit local conditions or work practices. No jurisdiction has adopted the PCA in its entirety. This means that no state or territory regulates all of the types of work covered in the PCA as licensed plumbing work.

Adoption of the PCA in WA

The current narrow definition of 'plumbing work' in the Plumbing Act means that until the Plumbing Act is amended, WA can only adopt into legislation those parts of the PCA that deal with cold water services, heated water services, sanitary plumbing systems and sanitary drainage systems (Parts B1, B2, C1 and C2). This has already been achieved via amendments to the Plumbing Regulations which took effect on 1 May 2015.

The work covered by Parts B3, B4, D1, D2, and E1 of PCA 2016 has never been regulated as plumbing work in WA.

The work covered by Part F1 of PCA 2016 is regulated principally through the public health legislation administered by the WA Department of Health. Similarly, Part F2 is primarily the responsibility of the sewerage services providers, principally the Water Corporation.

CRIS discussion and stakeholder feedback

Sections 4.2.2 and 4.2.7 of the CRIS examined the case for adopting the remainder of PCA 2016 into legislation in WA, noting that some of the technical standards in the PCA are mirrored in the Building Code of Australia (BCA) which is already called up in WA's building laws.

The comments received in response to the CRIS, and the conclusions that have been reached in the light of those comments, are set out under separate headings below.

Part B3 of PCA 2016 – Non-drinking water services

As adoption of Part B3 of the PCA is implicit in the decision to expand the scope of water supply plumbing work to include non-drinking water (see section 2.4.1 above), no further discussion about Part B3 is necessary.

Part B4 of PCA 2016 – Fire-fighting water services

Fire safety is covered in both the PCA and the BCA. The PCA applies to work carried out from the point at which the fire-fighting equipment connects to the water supply, up to the fire-fighting equipment inside the building (e.g. fire hose reels).

The PCA's principal functions are to avoid the likelihood of contamination of drinking water and ensure the correct flow rate and pressure to the fire-fighting equipment.

In contrast, the BCA deals more with the triggers that determine whether or not a fire-fighting system is required within a building and, if so, the type of system that must be installed.

CRIS discussion

As WA has not traditionally treated fire-fighting water services as plumbing work, the CRIS sought comment from stakeholders about whether there was a case for adopting Part B4 of the PCA as a branch of licensed plumbing work.

Stakeholder comment

The majority of stakeholders who commented on this issue agreed that because fire suppression systems are connected to the water supply, the backflow and cross-connection risks meant that the work covered in Part B4 of the PCA should be treated as licensed plumbing work. In particular, the detailed submissions received from the National Fire Industry Association and the Fire Protection Association of Australia were strongly in favour of the introduction of a category of plumbing licence specifically for fire safety practitioners.

Subsequent developments

In April 2018, the BMF released the *Building Confidence Report* on the effectiveness of compliance and enforcement systems for the building and construction industry across Australia. The *Building Confidence Report* made a number of recommendations for reform, one of which being that there should be a registration requirement for building practitioners in a range of disciplines, including fire safety. Specifically, the *Building Confidence Report* called for there to be categories of registration for fire safety engineers, fire protection systems engineers, fire safety system installers and fire safety system maintenance contractors.

The BMF has given in-principle support to all of the recommendations in the *Building Confidence Report* and has recommended that they be implemented over a three-year period. Priority has been given to some of the recommendations, one of which is the requirement for registration for building practitioners, including fire safety practitioners. This work is already underway as part of a separate project being undertaken by Building and Energy.

As a consequence of the BMF's decision, it has been decided to include further consideration of the issues surrounding adoption of Part B4 of the PCA in WA as part of the broader implementation of the recommendations in the *Building Confidence Report,* rather than as part of the plumbing reforms discussed in this DRIS. A CRIS specifically relating to the registration of fire safety practitioners is expected to be released in early 2020 for broad industry consultation.

Parts D, E and F of PCA 2016 – Stormwater drainage systems; heating, ventilation and air-conditioning systems; and on-site wastewater management

In the CRIS, it was noted that in preparing for the release of the next edition of the PCA in May 2019, the ABCB had queried whether those parts of the PCA that deal with stormwater drainage systems; heating, ventilation and air-conditioning systems; and on-site wastewater management systems should be removed from the national provisions on the grounds that the majority of jurisdictions (including WA) do not treat the work covered in those Parts as regulated plumbing work.

The ABCB's reasoning was that it is not logical to include in a national code scopes of work that are not regulated as plumbing work across all jurisdictions.

Accordingly, the public consultation draft of PCA 2019 released by the ABCB in February 2018 sought comment on a proposal to exclude Parts D, E and F from the national provisions and move the content of those Parts to the appendices applicable to the one or two jurisdictions who do currently regulate that work as plumbing work.

Parts D and E

In light of the proposed exclusion of Parts D and E, and taking into account the results of some mapping work that identified a degree of overlap between the PCA and the BCA called up under WA's building laws, the CRIS advised that the Government was not contemplating amending the plumbing laws in WA to call up Parts D and E of PCA 2016. However, it was noted that this would be revisited should the ABCB proposal not proceed.

Although comment was not specifically sought in relation to Parts D and E of PCA 2016, the MPGA executive submission did make reference to the matter, saying that the CRIS discussion around the adoption of the PCA was *"flawed"* and that there was, "…*no substance to the claim that the ABCB is proposing to "delete" Parts D and E of the PCA and move them to the appendices."*

The MPGA executive submission went on to say, *"We know the ABCB Board has not approved the proposal and industry stakeholders around Australia are strongly opposed to it. We believe it will never happen. In any case, such a proposal could never be an acceptable reason for WA to discard Parts D and E. Instead of giving up and declaring that progress is too hard, the State Government should honour its commitment under the Australian Building Codes Board Intergovernmental Agreement [IGA] and adopt the PCA in its entirety….In addition, the State Government should take a position of leadership and encourage other jurisdictions to do likewise."*

At the time of releasing the CRIS, the public consultation draft of PCA 2019 had been out for public comment for around three months.

The draft contained national provisions relating to the following scopes of work only:

- Cold water services (Part B1)
- Heated water services (Part B2)
- Non-drinking water services (Part B3)
- Fire-fighting water services (Part B4)
- Cross-connection control (Part B5)
- Rainwater harvesting and use (Part B6)
- Sanitary plumbing systems (Part C1)
- Sanitary drainage systems (Part C2)
- Excessive noise (Part D1)
- Facilities (Part E1)

As the parts relating to stormwater drainage systems and heating, ventilation and air-conditioning systems (i.e. Parts D and E of PCA 2016) had all been removed, it is difficult to accept the argument that there was no substance behind the discussion in the CRIS around the ABCB's proposal to remove Parts D and E from the main body of the PCA.

National public comment on PCA 2019

In response to the ABCB's request for public comment on the consultation draft of PCA 2019, the only industry body to comment on the proposal to remove Parts D and E from the national provisions was Master Plumbers Australia (MPA).

The view expressed by MPA was that because the scopes of work covered in those Parts are embedded in the national training package for plumbing, they should be regarded primarily as plumbing work and therefore should remain as national provisions in the PCA. MPA also argued for any decision to be postponed until the 2022 edition of the PCA so as to enable the jurisdictions to consult with stakeholders and to allow more time for detailed consideration and a more thorough discussion of the impacts.

After considering all parties' comments on the consultation draft of PCA 2019, the ABCB Board resolved at its meeting on 22 November 2018 to proceed with its proposal to remove stormwater drainage systems and heating, ventilation and air-conditioning systems (Parts D and E) from the national provisions in the PCA and move them to the appendices applicable to Victoria and Tasmania only (where this type of work is regulated as plumbing work).

The ABCB Board's decision has removed the basis for the MPGA's argument that because work relating to stormwater drainage systems and heating, ventilation and air-conditioning systems is covered in the PCA, it must be adopted as regulated plumbing work in WA in order to comply with the IGA.

Decision - Parts D and E of PCA 2016

The removal of stormwater drainage systems and heating, ventilation and air-conditioning systems from the scope of the PCA, coupled with the lack of evidence to show that there are unacceptable risks in allowing non-plumbers to continue to carry out this type of work, has led Building and Energy to conclude that there is no case for extending the definition of 'plumbing work' in the Plumbing Regulations to adopt Parts D and E of PCA 2016 in WA.

This position is consistent with the vast majority of other Australian jurisdictions. The only jurisdiction to regulate heating, ventilation and air-conditioning systems as plumbing work is Victoria. Stormwater drainage systems are only regulated as plumbing work in Victoria and Tasmania, with Tasmania being the only one to treat surface and subsurface drainage systems (Part D2 of the PCA) as regulated plumbing work.

Part F of PCA 2016 – On-site wastewater management systems

Part F of the PCA covers two aspects - on-site wastewater treatment systems (Part F1) and on-site systems for managing liquid trade waste (Part F2).

Taking Part F2 first, the CRIS concluded that the current regulatory arrangements around liquid trade waste systems were working well in WA and that there was no evidence to suggest that the aspects currently regulated by the waste management laws administered by the Department of Water and Environmental Regulation, and the permit system operated by sewerage service providers such as the Water Corporation, needed to be brought within the scope of the Plumbing Act.

The MPGA executive submission disagreed with that conclusion, saying that while the Water Corporation currently enforces the laws around liquid trade waste, the systems used for the onsite treatment, conveyance and/or disposal of liquid trade waste were very clearly covered by Part F2 of the PCA and should therefore be:

"… the responsibility of the Building Commission and applied by calling up the PCA in its entirety."

Decision - Part F2 of PCA 2016

As no evidence was presented during the CRIS process to support a case for amending the Plumbing Regulations to adopt Part F2 of the PCA, it remains the view of Building and Energy that no change needs to be made to the current arrangements for liquid trade waste.

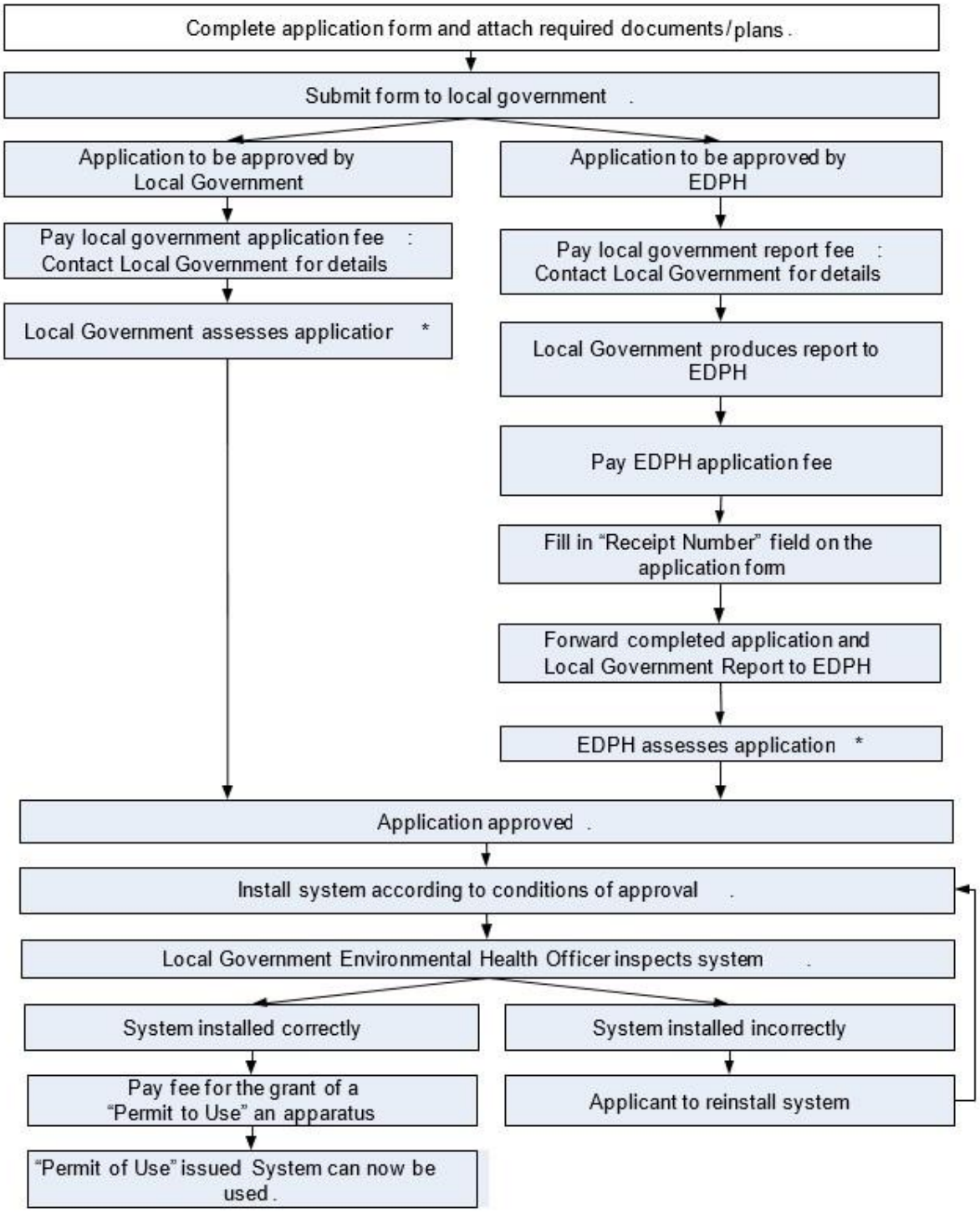
Part F1 of PCA 2016 – On-site wastewater management systems

For on-site wastewater treatment (Part F1 of the PCA), the CRIS sought comment on whether the work involved with the installation or on-site construction of wastewater management systems should become licensed plumbing work in WA.

Current regulatory position

Currently, the legislation for on-site wastewater treatment systems (also referred to as on-site wastewater management systems, or OWMS) in WA is contained in the *Health (Miscellaneous Provisions) Act 1911* and the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974. These laws are administered by the Department of Health and local government authorities. The process that must be followed by those wishing to install an on-site wastewater treatment system is shown in the following flowchart.

Current application process under the *Health (Miscellaneous Provisions) Act 1911*



** If the proposed system will handle less that 540L/day of wastewater **OR** the building to be serviced is a single dwelling, the application is handled by the relevant local government authority. If the volume to be generated is more than 540L/day **AND** the building being serviced is not a single dwelling, the local government assesses the application but approval can only be given by the Department of Health (EDPH).

As part of the implementation of the *Public Health Act 2016*, the Department of Health is reviewing the process for approving the installation of wastewater treatment systems, with a view to making it more streamlined and remove any unnecessary red tape.

One aspect the Department of Health is looking at is whether licensed plumbers could have a role in the approval process through the adoption of Part F1 of the PCA as licensed plumbing work. The intention would be for the plumber to complement the role of the environmental health officer and local government in the approval process for the installation and on-site construction of wastewater treatment systems.

CRIS proposal

Currently, only the installation of the drainage pipework from the point of discharge from the premises to the point of connection to the treatment system is licensed plumbing work. The CRIS therefore sought comment on whether this should be expanded to also cover the installation and/or on-site construction of the treatment system itself (i.e. a septic tank or an ATU).

Stakeholder feedback

Almost every submission from members of the plumbing industry (including the MPGA members' combined submission, the MPGA executive submission and the two union submissions) said that the installation and on-site construction of wastewater treatment systems should become regulated plumbing work for which a plumber's licence is required.

Many gave no reason for their view but of those who did, most, including the MPGA members' combined submission, quoted the objectives and functional statements contained in Part F1 of the PCA as the justification for their position.

Some of the other reasons quoted were as follows:

- *Making this work licensed plumbing work will ensure a unified method of installation which will assist with maintenance and repair and in protecting the environment.*
- *OWMS's are part of the plumbing system so it should be done by licensed plumbers. Other installers do not have sufficient understanding of how the plumbing system is run to achieve fall to the system.*
- *The discharge of effluent can cause disease so OWMS's need to be installed by licensed plumbers so as to ensure that the necessary public health and environmental standards are achieved.*
- *To protect public health, any pipe containing effluent within the boundary of a property should be licensed plumbing work*
- *It should be licensed plumbing work to ensure compliance and good standards of workmanship.*
- *An OWMS is no less dangerous than a treated effluent system discharged into a reticulated sewerage system so it should be licensed plumbing work in the same way. Regulators should focus on the bigger picture and take their heads out of the sand.*
- *It is essential to have a basic understanding of the system components and how they work. As there is a high level of risk to public health and of damage to buildings and surroundings, it should be controlled through the plumbing legislation.*

The submission from the MPGA executive also indicated that the main reason why it believed that the installation and on-site construction of OWMS's should become licensed plumbing work was because such work is covered in the PCA. Their submission did, however, recognise that additional skills training would be required by most plumbers, and suggested that WA should implement a Certificate II level of training course in on-site wastewater management systems and make the successful completion of this qualification a mandatory prerequisite for plumbers wanting to do this type of work.

In order not to put existing installers out of business, the MPGA executive submission said that those installers must be allowed to continue the work they are doing, provided that they too have successfully completed the Certificate II qualification in on-site wastewater management systems proposed by the MPGA.

The MPGA executive submission also referred to a recent submission the MPGA had made to the Department of Health in response to a request for comment on the review of the training requirements that would be needed if plumbers were to take over the installation and on-site construction of wastewater treatment systems.

In the submission to the Department of Health, the MPGA made some important observations that are relevant to the broader discussion about whether this type of work should become a task that only licensed plumbers may carry out. These observations are reproduced below.

> *"The installation of on-site wastewater management systems requires cooperative work between two distinct trades, i.e. licensed plumbers and the irrigation specialists…*
>
> *The practical reality is that licensed plumbing contractors do not want to be involved in the installation of on-site wastewater management systems, apart from connecting the sewerage system to the septic tank or aerobic treatment unit. In addition, many licensed plumbers in suburban areas will never work on on-site wastewater management systems."*

This view appears to contradict the view put forward in the MPGA Executive submission in response to the CRIS for the plumbing reforms.

Comment from other stakeholder groups

A number of other stakeholders provided detailed submissions in response to the CRIS discussion on this issue. These are summarised below.

Department of Health

The submission from the Department of Health supported the position that the installation and on-site construction of OWMS's should become licensed plumbing work. Some of the benefits they saw in such a change were as follows:

- *Better clarity and transparency to consumers, with clear roles and responsibilities between the involved stakeholders.*
- *Any installation work will be guaranteed [under the Plumbing Regulations] for a six-year period (note: under the current arrangements, there is no such statutory guarantee).*
- *Plumbers will be liable for incorrect installations [under the Plumbing Regulations].*

- *There would be a significant reduction of regulatory red-tape for local governments who could rely on plumbers' certificates of compliance to issue 'permits to use', rather than devoting their own resources to checking whether each system has been properly installed.*
- *It may reduce the permit cost for the community.*

However, the Department of Health also drew attention to some other matters that need to be taken into consideration, as follows:

- *Additional training and resources will be required to ensure licensed plumbers have adequate skills and competencies in relation to the construction/installation of OWMS's, in particular the requirements of Australian Standard AS 1547 – On-site Domestic Wastewater Management. [This supports the view of the MPGA executive that plumbers would need additional specialist training to be able to carry out this work competently.]*
- *Because secondary treatment units, i.e. ATUs, have electrical requirements, licensed plumbers installing secondary treatment systems will need to have a restricted electrical permit as per the regulatory requirements for electrical work.*
- *The economic impact to current installers who do not have a plumber's licence, such as earthworkers and manufacturers/installers of secondary treatment systems, needs to be considered.*
- *To enable local governments to deal with any complaints post installation, plumbers will need to provide to local government a copy of the certificate of compliance and drainage plumbing diagram for each job.*
- *Plumbers will need to become familiar with any environmentally sensitive areas, any specific setback distances, town planning requirements or other agencies' regulatory requirements (for example, some local governments require the installation of nutrient removal systems). This may require plumbers to consult with local government before commencing the installation or on-site construction of an OWMS.*

Local government

In contrast to the submissions from the plumbing industry and the Department of Health, all bar one of the local governments who commented on this topic were opposed to making the installation and on-site construction of wastewater treatment systems licensed plumbing work, with most citing the specialised nature of the work and the equipment needed to do it as key reasons.

The one local government that was not opposed did qualify its position by saying that plumbers should be required to hold a Certificate IV in On-site Effluent Disposal Systems.

The following extracts from some of the local government submissions sum up the majority view of local government.

- *The current model ensures a cost effective approval and assessment process, which ensures that 100 per cent of on-site wastewater treatment systems installed are inspected and approved. This provides a high level of protection to our community.*

- *A licensed plumber is unlikely to be qualified to undertake the geotechnical site investigation (AS 1726:2017) or site and soil evaluation (AS/NZS 1547:2012) that will be required under the* [Department of Health's] *new policies.*

  The Department of Health still requires all OWMSs to use equipment or components of a design that has been approved by the Department of Health's EH [environmental health] team and to ensure a property has sufficient area for leach drains, soak-wells or irrigation areas (many old properties now have insufficient area to meet modern standards). So a licensed plumber may assist with some tasks in installing a basic septic tank or aerobic sewage treatment unit, however [the City] does not agree that a plumbing certificate of compliance covers all aspects of the environmental (high ground water tables) and public health issues (virus, bacteria, metals, micro-plastics, detergent, endocrine, toxic algae) produced by some OWMSs.

  Furthermore, a plumbing certification which has a six year warranty on installation is inadequate, given that issues resulting from an incorrectly installed or sized system may become evident after this timeframe. Local governments will then be left to deal with the issue.

Another important factor raised in the local government submissions was the availability of suitably qualified and experienced plumbers in the more remote parts of WA. A submission made on behalf of a number of shires in the southern half of the State said that it can be difficult to get licensed plumbers in remote areas and, as their rates tend to be higher, it would increase costs to the consumer. The same submission concluded that the installation of anything more than a domestic septic system needed to be done by specialist installers, not plumbers. Two other regional local governments commented that this type of work should be left with local government as they can provide a service and advice in regional areas that the plumbing industry may not be able to offer.

When read in conjunction with the MPGA Executive's comment that many plumbers do not want to take on the installation or on-site construction of wastewater treatment systems, these observations are critical to the evaluation of whether such work should become licensed plumbing work.

Environmental health professionals

Submissions from the Metropolitan Environmental Health Management Group[13] (MEHMG) and the WA branch of Environmental Health Australia (EHAWA) largely echoed the views contained in the local government submissions. The following extracts from the MEHMG and EHAWA submissions illustrate the broad position of this stakeholder group.

> *"Onsite liquid effluent disposal systems (in this case conventional septic tanks and leach drains) are often installed by earth moving contractors. The connection with local government Environmental Health Officers (EHOs) means earth moving contractors invariably have good local knowledge of key issues such as ground water level and soil types and a clear understanding of installation requirements. The outcome has been that there is a record of high accountability and compliance which assists owners greatly. The critical element of understanding local conditions should not be underestimated with some plumbers not operating in the range of conditions or regularly on onsite liquid effluent disposal systems."*

[13] The MEHMG represents the managers of environmental health in the 31 local governments in the Perth Metropolitan area including Mandurah, plus the cities of Bunbury and Busselton.

"Many installers of Aerobic Treatment Units (ATU's) are currently not licensed plumbers, however have been successfully installing and servicing these systems for many years and understand the specific requirements of the products they bring to market. The change to requiring the systems to be installed by licensed plumbers will…. have negative impacts for this sector of the effluent disposal industry."

"It has been established that because a person may be a licensed plumber, it does not automatically mean that they are proficient in the installation of on-site effluent disposal systems. Conversely, there are trades in the community (principally earth workers and ATU installers) that are not licensed plumbers, however they have a wealth of experience in installing these systems with a high competence level. So therefore the installation of any effluent disposal system is much more about competence than an arbitrary plumber's licence."

"The improvement and retention of the existing inspection and regulatory framework is the most likely to produce the best public health, cost efficiency and environmental outcomes for all concerned. The success of the existing regulatory regime should not be underestimated, and with local trades and Environmental Health Officers working in collaboration it is difficult to see a change of the nature proposed generating improved outcomes than those occurring currently."

The potential cost impacts of bringing the installation and on-site construction of OWMS within the scope of licensed plumbing work was also raised. For example, the submission from MEHMG stated the following:

"Existing septic and ATU contractors have strong links with suppliers and sub-contractors which can help to minimise costs to the consumers….should such work be delegated to licensed plumbers, the overall outcome would be expected to increase costs to the consumer. This would be a deterrent to consumers and may result in illegal installations…"

The point was also made that plumbers would be unlikely to have the necessary earthmoving machinery to do the work and would therefore need to hire that in, thereby adding additional cost to the consumer. This quote from a construction company serves to illustrate that point:

"I have had several biosystems installed, on private and commercial properties. Some one tank, some multiple tanks of eight or more. This is specialist work and best left to the manufacturer or his nominated installer. If there is a problem, the manufacturer or his representative have no excuse for not rectifying. In every case, the plumber has been more than happy to just plumb into these systems – he doesn't want the liabilities of installation either.

As far as normal septics [go], the earthmoving contractor has the machinery on hand and the know-how to do the job just as well as the plumber, especially if the plumber has to mobilise or hire in machinery."

Installers and servicers of on-site wastewater treatment systems

The submissions received from current installers and servicers of OWMS again emphasised the specialist nature of this type of work.

They also pointed to the importance of ensuring that installers have undertaken training that is specific to the task, and the potential loss of business their industry would suffer if they were no longer permitted to carry out the installation or on-site construction of wastewater treatment systems.

One respondent also highlighted how much knowledge and experience would be lost to the community if current installers were excluded from this market. To illustrate the point, the respondent said that in the period since 2006 he had installed over 200 domestic systems, attended over 17,000 services and had 13 different systems endorsed on his authorised installer certification. He argued that if the installation work were to become licensed plumbing work, all that experience would be lost to the wastewater industry and he would lose both his business and his business premises.

Decision on Part F1 of PCA 2016

Having weighed the evidence in the light of the detailed comments made on this complex issue, it is considered that the case for extending the scope of licensed plumbing work to include the installation and on-site construction of OWMS is not made out. On that basis, no changes are to be made to the Plumbing Regulations to make this work licensed plumbing work that only an LPC may carry out.

PCA – Subsequent developments

As previously noted, in the period since the CRIS was released, the ABCB has made a number of significant changes to the content of the PCA. These changes took effect on 1 May 2019 and involve the addition of new scopes of work not previously included in the PCA.

The new scopes are:

Part B5 – Cross-connection control

Part B6 – Rainwater harvesting and use

Part D1 – Excessive noise

Part E1 – Facilities

Building and Energy has reviewed the content of the four new Parts and is of the view that adoption of Parts B5 and B6 is appropriate as the content of those Parts aligns with the proposed new definitions for water supply plumbing work discussed in Decisions Four and Seven in this DRIS.

In contrast, adoption of Parts D1 and E1 is not considered appropriate as the standards they contain are adequately covered under the building legislation via the adoption of the corresponding Parts of the BCA in the Building Regulations 2012 (WA).

Decision summary

The table below summarises the decisions reached in relation to the adoption of PCA 2016 and PCA 2019.

Decision Nine For those Parts of PCA 2016 and PCA 2019 that are not already regulated as plumbing work in WA, the following decisions will be implemented.	
PCA 2016	**Action**
Part D Stormwater drainage systems	The scope of the Plumbing Act will not be expanded to include stormwater drainage as regulated plumbing work.
Part E Heating, ventilation and air-conditioning systems	The scope of the Plumbing Act will not be expanded to include heating, ventilation and air-conditioning systems as regulated plumbing work.
Part F1 On-site wastewater management systems	The scope of drainage plumbing work will not be extended to include the installation or construction of on-site wastewater management/treatment systems.
PCA 2019	**Action**
Part B3 Non-drinking water services	This Part is to be adopted as licensed plumbing work via the definition of water supply plumbing work (see Decision Four in section 2.4.1 of this DRIS.)
Part B4 Fire-fighting water services	Adoption of this part will be considered in the context of the review of fire safety regulation currently being undertaken by Building and Energy in the light of the recommendations of the *Building Confidence Report*.
Part B5 Cross-connection control	The provisions of Part B5 are to be adopted as mandatory.
Part B6 Rainwater harvesting	The provisions of Part B6 are to be adopted as mandatory (with the exception of the roof catchment system and the rainwater tank itself). This is linked to Decision Four in section 2.4.1 of this DRIS.
Section D Excessive noise	This Section will not be adopted as licensed plumbing work as it is sufficiently covered under the BCA.
Section E Facilities	This Section will not be adopted as licensed plumbing work as it is sufficiently covered under the BCA.

2.6 Decision Ten – Minor plumbing repairs by and on behalf of private homeowners

ACIL Allen noted that, with the exception of the Northern Territory, WA is the only Australian jurisdiction not to have some level of exemption for simple plumbing repairs carried out by private homeowners or non-plumbers acting on their behalf.

ACIL Allen concluded that this should be addressed, and recommended that the Plumbing Regulations be amended to "carve out" of the plumbing regulatory regime specified simple plumbing repairs carried out by private people in their own homes. ACIL Allen also indicated that if the exemption were to be extended to also cover non-plumbers acting on behalf of private homeowners, this would provide the greatest benefit to Western Australians because it would maximise their freedom to choose whether to engage a plumber or a non-plumber to carry out that work for them. [14]

ACIL Allen discussed various ways in which this reform could be achieved, but did not come to a firm view about which one was preferable.

CRIS proposal

In the light of ACIL Allen's recommendation, the CRIS sought comment on a proposal to amend the Plumbing Regulations so as to allow private homeowners/occupiers, as well as non-plumbers engaged by private homeowners/occupiers, to legally carry out the following basic plumbing tasks in their own homes:

a) repairing or replacing a shower head;
b) repairing a tap or tap mixer valve;
c) replacing an inlet or outlet washer in a toilet cistern;
d) replacing a domestic water filter cartridge; and
e) clearing a blocked waste pipe by the use of a plunger.

Stakeholder feedback

As detailed in Table 14 in Appendix D of this DRIS, the majority of stakeholders who responded to this aspect of the CRIS did not support the proposal to deregulate. The reasons for taking that view are discussed in the following summaries of the feedback provided.

Plumbing industry feedback

Of the 116 submissions received from plumbers, just 12 supported the proposal to allow private homeowners/occupiers to carry out basic plumbing tasks in their own homes, and only six supported extending the proposal to also include non-plumbers engaged by homeowners/occupiers to carry out such work on their behalf.

The MPGA members' combined submission said they were against the proposal on the grounds that it would be "*a backflow risk*". Their submission said that non-trained people have no background or knowledge about plumbing and that allowing them to do any plumbing task, no matter how minor, *"could potentially contaminate the public water supply and infrastructure."*

[14] ACIL Allen final report p.57

In responding to the list of tasks proposed in the CRIS, both the MPGA members' combined submission and the MPGA executive submission gave a number of reasons why non-plumbers should not be permitted to carry out the work. These reasons are summarised in the table below.

Task	Reason
Repairing or replacing a shower head	The shower hose could extend into wastewater, thereby giving rise to a risk of back syphonage
Repairing a tap or a tap mixer valve	This is technical work that has potential for burst hoses, backflow and scalding
Replacing an inlet or outlet washer in a toilet cistern	Depending on the cistern, this work can be very complicated
Replacing a domestic water filter cartridge	This should remain as licensed plumbing work
Clearing a blocked waste pipe	This poses an insurance risk and could damage the pipe infrastructure. Moreover, increased chemical use would have an adverse effect on treatment plants

The general thrust of both the MPGA members' submission and the MPGA executive submission was that to allow unqualified people to carry out any plumbing work, regardless of the level of difficulty of the task, would create unacceptable health and safety risks. One of the respondents further added that 'non-conforming plumbing' impacted not only the current owner of the property but also any future owners of that property.

The following extracts from individual plumbers and plumbing companies not affiliated with the MPGA submissions provides a general overview as to why they too were of the view that this proposal should not be implemented.

- *People don't use the right tools, tape, seals etc. and can damage the job even further. If it starts here, how far will they go in the end?*
- *The risk to our water supply and sewer treatment plants is huge – this would be madness.*
- *If the job requires the water supply to be turned off, only trained, qualified plumbers are the right and safe people to do the job.*
- *Main risk to consumers is cross contamination; a house that has plumbing installed by a novice would not be insurable.*
- *Risks of cross contamination, and of water leaks near electrical water heaters causing explosions.*
- *There are massive safety risks with this. There are standards and quality that need to be upheld for various reasons.* [Note: these reasons were not specified]

The possible scenarios that respondents said could arise if the proposal was implemented included the following:

- *A homeowner replaces tapware and doesn't realise a pressure lowering valve is needed then a hose bursts in the cupboard, flooding the house and costing $15,000 to rectify.*
- *An unqualified person leaves out a fibre washer, the taps leak into a robe, black mould infests the house.*

For the minority of plumbing industry respondents who spoke in favour of the proposal to allow homeowners, and non-plumbers on their behalf, to carry out limited plumbing repair tasks in their own homes, the following extract largely encapsulates why.

> *The risks are wet floors. You will never stop homeowners carrying out basic repairs. When they make mistakes, they will call a plumber.*

Other plumbing industry respondents acknowledged that it is impossible to police homeowners changing tap washers and repairing sink taps. However, they drew the line at allowing non-plumbers to do such work for reward, saying that it would take work away from the licensed plumbing trade.

Non-plumbing industry feedback

The responses from other stakeholder groups showed that the vast majority broadly supported the implementation of this proposal, at least insofar as it applies to homeowners/occupiers doing the work themselves. A flavour of the comments made by these groups is provided below.

Hydraulic consultants and plumbing manufacturers

- *Supported, but only if there is an external isolation valve to the fixture. I have seen upper floors flooded due to an owner trying to change a tap washer. This can have massive structural implications and make the home uninhabitable. Another risk is health due to exposure to mould arising from a slow leak that may not be noticeable.*
- *Supported but it should be limited to the replacement of minor components that do not require testing or calibrating*
- *Supported for tapware in single residential buildings as the consumer risk is low.*
- *I think the general public are well equipped to assess their level of skill and in the majority of cases do not try to fix a tap or a valve if they believe it is too difficult and in these instances would call a plumber.*
- *Allowing the homeowner to rectify a simple problem can reduce health risks as they can fix the issue as soon as it occurs rather than waiting for a plumber to attend.*

Registered Training Organisations (RTOs)

- *Supported, as the risk is borne by the consumer who is doing the work. The boundaries would need to be very clear though.*
- *If extended beyond homeowners it will open the floodgates to the handyman industry. Owners have a go anyway and you'll never stop that.*
- *There are risks to consumers/owners. Someone can have a leak and this could result in slips/falls to anyone, including children. Another example is infectious disease by sewage.*
- [Not supported] *consumer safety can be compromised through incomplete works and incompetent non-plumbers.*
- [Not supported] *undermines plumbing being a licensed trade and means we will be competing with the DIY market. LPCs are called to houses where DIY has gone wrong, which may have the potential to put consumers at risk.*
- *I don't see a problem with the owner replacing a shower head or tap washers. And I can't see any danger to the public.*
- *I don't believe there are any pertinent health risks. However, there may be insurance risks.*

Water service providers

- *Supported as it will allow homeowners to install more water-efficient fixtures and repair leaks in a timely fashion thereby preventing water wastage.*
- *Will potentially reduce ongoing leakage of taps and showers where a simple, cost-effective fix can be carried out by the property owner or other capable person.*
- *Will encourage water conservation but should not extend to adding additional taps or mains-connected reticulation systems which introduce a backflow risk.*
- *If extended to also apply to non-plumbers, could create health risks for consumers and the possibility of fraudulent behaviour.*

Industry associations

- *Proposal supported as it enables upkeep of residences without implications. Given the practicalities of the proposed scope, the risk to consumer safety is minimal.*
- *Not supported. This is old-fashioned cottage plumbing thinking. Modern systems are much more technical than the old jumper valve tap and single flush toilet. The home is not necessarily a stand-alone cottage but could be one of 200 in a high rise block with centralised heated water and services where a mistake could jeopardise the health and safety of many. All the tasks listed pose threat of cross contamination, scalding, or water hammer leading to bursts and floods. Clearing a blocked waste pipe that is directly connected to sewer with a hose connected to a tap is a hazard regardless of whether or not a low-hazard backflow prevention device is fitted.*

Non-licensed plumbing work in the other states and territories

The following table shows how this issue is regulated in the other states and territories.

Building and Energy has sought feedback from the regulators in those jurisdictions to ascertain if any health or safety issues have been reported as a consequence of allowing minor plumbing repairs to be carried out by homeowners or non-plumbers acting on behalf of homeowners. The feedback received was that few, if any, issues had occurred as a result of non-licensed people carrying out minor works that are exempt from the plumbing laws.

Scope of non-licensed work	
NSW	The following plumbing work can be carried out by owners or occupiers of a dwelling, or a person authorised to carry out the work by the owner or occupier of the dwelling who does not receive payment or other consideration for carrying out the work: • repairing a tap or shower head in a dwelling (other than a repair of a thermostatic mixing valve, tempering valve or backflow prevention device); and • installing water-restricting or flow-regulating devices to tap end fittings (including shower heads) in a dwelling.
VIC	Plumbing work able to be carried out by any non-plumbers: • replacement of 3 star shower heads; • the repair or replacement of tap washers and other minor tap repairs in a dwelling; and • clearing of blockages in sanitary and drainage pipes using existing inspection openings and removable grates.
SA	Plumbing work able to be carried out by any non-plumbers: • the installation, alteration, repair, maintenance or disconnection of a cold water pipe not exceeding 25mm in diameter except where the pipe is in or on a building; • the installation, alteration, repair, maintenance or disconnection of a non-testable backflow prevention device; • the replacement, alteration, repair, maintenance or disconnection of domestic tapware; and • the clearing of blockages in pipes not exceeding 50 mm in diameter (or associated traps) installed to convey wastewater to sanitary drains.
TAS	Plumbing work able to be carried out by an owner or a competent person contracted by the owner: • maintenance, repairs or replacement of existing tapware; • replacing or repairing a shower head or hose; • maintenance and repairs to water closet cistern outlet and inlet valves; • replacing a domestic water filter cartridge; • removing/replacing ground level inspection openings on sanitary drains; and • unblocking toilets, showers or other plumbing fixtures with a handheld plunger.
NT	No exemptions in the legislation. Historically, no action is taken when tap washers are replaced by home owners.

Scope of non-licensed work	
ACT	Plumbing work able to be carried out by any non-plumbers: • Removing a washer or something similar from a tap or valve, or repairing or fitting the washer or the similar thing, unless the removal, repair or fitting involves damage to part of— ▪ a water service; ▪ a hot-water system; ▪ an irrigation system; or ▪ a fire sprinkler system. • Inspecting a sanitary drain, clearing a blockage or obstruction of the drain, or cleaning the drain, unless the inspecting, clearing or cleaning involves damage to, or removal of part of, the sanitary drain or is done for reward; or the operation of a grey-water diverter. • Inspecting sanitary plumbing, clearing a blockage or obstruction of the plumbing or cleaning the plumbing unless the inspecting, clearing or cleaning involves damage to, or removal of part of, the sanitary plumbing or is done for reward.
QLD	Plumbing work able to be carried out by any non-plumbers: • cleaning or maintaining ground level grates to traps on sanitary drains; • replacing caps to ground level inspection openings on sanitary drains; • maintaining an above or below ground irrigation system for the disposal of effluent from an on-site sewerage facility or greywater use facility; • installing or maintaining an irrigation or lawn watering system downstream from an isolating valve, tap or backflow prevention device on the supply pipe for the irrigation or lawn watering system; • replacing a jumper valve or washer in a tap; • changing a shower head; • replacing, in a water closet (WC) cistern, a drop valve washer, float valve washer or suction cup rubber; and • replacing a domestic water filter cartridge.

Analysis

In undertaking the cost-benefit analysis as part of the regulatory impact assessment conducted prior to the release of the CRIS, Marsden Jacob concluded that the current legislation potentially imposes an unnecessary burden on homeowners by requiring them to hire a plumber for minor maintenance activities where both the skill level required and the risk to the community are low. Marsden Jacob also noted that to retain the legislation but have a policy of not enforcing it did not align with the principles of good regulation[15].

Marsden Jacob considered the main impacts of this change to be increased choice and lower costs for owners/occupiers and, potentially, less minor plumbing work for plumbers.

[15] This is based on the fact that the PLB currently operates a policy of not prosecuting private homeowners in such circumstances.

In discussions with industry stakeholders, Marsden Jacob was informed that there would be health and safety consequences for the community if the laws were to be relaxed as proposed. However, Marsden Jacob did not find sufficient evidence of health and safety incidents related to non-compliant work of the type under consideration to be able to assess those risks.

Similarly, Marsden Jacob found no evidence to suggest there would be significant public health risks in relation to the narrow scope of work that is contemplated. (See section 3.5 of the Marsden Jacob report at Appendix A.)

A key aim of the CRIS discussion on this topic was therefore to gather evidence of the potential risk to public health based on 'real life' examples of where things have gone wrong.

However, as illustrated by the stakeholder feedback, many responses offered opinions of what *could* happen but very few cited cases they had heard about, or seen first-hand, where a botched repair, or an attempted repair, by an unqualified homeowner had resulted in an actual risk to the health and safety of the occupier(s) or the community more broadly. Of those who did provide examples, the following were cited:

- *Damaged breech piece after a handyman had performed tap services; resultant leak caused water damage to the vanity unit and inconvenience to homeowner.*
- *Shower taps serviced by a non-plumber but leaked as a crack in the seat had not been identified. Owner ended up paying twice due to not using a plumber in the first place.*
- *Owners replaced taps but they leaked; owner changed shower head but had poor water pressure afterwards. Plumber had to attend to fix both. Plumber found that the shower head was blocked with thread tape debris left behind by the owner.*
- *A maintenance contractor in a nursing home moved on from changing tap washers and unblocking basins to replacing water heater relief valves without any understanding of their operational or pressure rating requirements.*
- *Re-seating of taps attempted but damage is done, resulting in the taps needing to be replaced.*

In terms of the possible extension of the proposal to non-plumbers acting on behalf of homeowners, a number of respondents cited the need to ensure that consumers are protected from poor work as a reason for not allowing non-plumbers to carry out simple plumbing repair tasks on behalf of private homeowners.

While the protection of consumers from sub-standard work is a valid concern, it is important to note that irrespective of the plumbing laws, all consumers in WA are covered by the significant protections offered under the Australian Consumer Law (ACL).

In general, the ACL requires anyone who provides a service to use an acceptable level of skill or technical knowledge and to take all necessary care to avoid loss or damage when providing that service.

In addition, the ACL provides that a person who supplies a service also guarantees that service. This is referred to as the consumer guarantee and means that a supplier not only guarantees that the service they provide will achieve its intended purpose, but also takes the responsibility for fixing a problem with a service if it does not meet the guarantee.

Given the protections offered by the ACL, it is the view of Building and Energy that consumers' rights would not be adversely affected by any decision to allow non-plumbers to carry out the limited scope of simple plumbing work contemplated in this proposal.

Decision

While acknowledging the strength of opposition from the plumbing industry to this proposal, very little in the way of firm evidence has been provided to support the view that public health would be compromised were WA to follow the lead of the other states and territories in de-regulating these minor plumbing tasks.

Additionally, the protections offered by the Australian Consumer Law would both ensure that the consumer's right to expect an appropriate standard of work is maintained, and provide sufficient remedies should the standard not be met.

Taking both of those factors into account, and having regard for the very limited scope of work under consideration, there is a sound economic argument that the current legislation imposes an unnecessary burden on homeowners by requiring them to hire a plumber for minor maintenance activities where both the skill level required and the risk to the community are low.

However, it is also important to recognise that de-regulation to the extent recommended by ACIL Allen carries a greater risk of overreach than the PLB's current policy of not prosecuting private homeowners who do the work themselves. In other words, there is a greater risk that non-plumbers would (albeit sometimes unintentionally) go beyond the narrow scope of work that would be permitted under the law.

As the potential for overreach brings with it a risk (although low) for homeowners, as well as a possible loss of work for licensed plumbers, it has been decided to take a cautious approach to this de-regulation measure and to follow the New South Wales model whereby only a homeowner or a person acting on their behalf in a non-commercial capacity (e.g. a family member or a friend) is permitted to undertake minor plumbing repairs in the homeowner's own home.

Accordingly, the Plumbing Regulations are to be amended to allow a private homeowner, or a person acting on behalf of that private homeowner in a non-commercial capacity (i.e. pro bono), to carry out a limited range of low-risk plumbing repair tasks legally in their own home

This will mean that the approach adopted in WA aligns with New South Wales, but is much more conservative than that which has been adopted in Queensland, South Australia, Victoria, Tasmania and the Australian Capital Territory.

Decision Ten

The Plumbing Regulations are to be amended to allow the following tasks to be carried out by a private homeowner in his/her own home or by a non-licensed person acting on behalf of that private homeowner in a non-commercial capacity (i.e. not for payment or reward):

(a) Repairing or replacing a shower head;
(b) Repairing a tap or tap mixer valve but not a thermostatically controlled tap;
(c) Replacing an inlet or outlet washer in a toilet cistern;
(d) Replacing a domestic water filter cartridge; and
(e) Clearing a blocked waste pipe by the use of a plunger.

2.7 Decision Eleven – Modular plumbing installations

In recent years, there has been an increase in the use of pre-fabricated bathroom 'pods' or 'modules' and other variations of pre-fabricated plumbing modules in residential construction. In such cases, entire bathrooms or kitchens are manufactured off site – often overseas – and transported to site as complete modules to be connected in-situ by a local plumber.

While this is a more efficient and less costly method of construction for builders and developers, it causes issues in relation to compliance with the plumbing standards and the compliance notification process under WA's plumbing laws.

This is because when licensed plumbers in WA connect a pre-fabricated plumbing module on site in cases where the integral plumbing has been neither certified by another licensed plumber nor WaterMarked under the WaterMark certification scheme, they take on the responsibility for that integral plumbing and must certify that the entire installation complies with the plumbing standards even though they may have no knowledge of how it has been constructed.

WaterMark certification scheme and ABCB direction

The ABCB has been investigating the issues posed by pre-fabricated plumbing installations and has considered both WaterMark certification and certification by a licensed plumber as options that might be applied to the regulation of 'pods' or 'modules' and other variations of pre-fabricated plumbing modules.

Having completed that review, the ABCB has taken the decision to extend the scope of WaterMark Technical Specification WMTS-050 from just shower modules and bathroom modules to, "shower modules, bathroom modules, laundry modules, kitchen modules and any combination of the above". This change came into effect on 21 May 2019.

Since that date, all pre-fabricated plumbing modules, including those incorporated within a transportable building, can be certified to WMTS-050 as a 'system'. This is in accordance with the WaterMark certification scheme's *Schedule of Products authorised for use in a Plumbing or Drainage Installation in Australia*.

This means that all pre-fabricated plumbing modules that have received such certification do not need to be constructed by a licensed plumber. The only time a licensed plumber is required to be involved is when the WaterMark-certified module is installed and connected on site. This is similar to the installation of a WaterMark-certified modular heated water system or bank of water heaters.

In addition to the extended scope for WMTS-050, the ABCB has issued a Notice of Direction stating that, "*prefabricated plumbing installations assembled off site can be accepted as 'regulated work' by the authority having jurisdiction. Work must be done in accordance with the requirements for regulated work within that jurisdiction and installed only within that jurisdiction. In this case the work will not need to be WaterMark certified as a prefabricated module*".

In this scenario, a licensed plumber in WA would install the integral plumbing within a pre-fabricated module and certify that work under the Plumbing Regulations to ensure it meets the technical standards of the PCA. The certification could also cover the connection of the pre-fabricated module on site if the licensed plumber who has had general direction and control over the off-site work assembly of the module also has responsibility for its connection.

Importantly, the ABCB's Notice of Direction states that ***other similar pre-fabricated plumbing modules*** will be treated in the same way. In other words, other similar pre-fabricated plumbing modules can either be WaterMark certified or have the integral plumbing constructed by a licensed plumber in WA in accordance with WA's Plumbing Regulations.

Industry concerns and stakeholder comments in response to the CRIS

In their feedback on the CRIS, representatives from the plumbing industry, together with the PLB, raised concerns about the general principle of allowing non-plumbers to fabricate plumbing installations, and about the application of the WaterMark certification scheme to complete bathrooms or kitchens rather than the individual components that make up such installations.

They have also raised concern around cases where the connecting plumber carries the liability for the work done by non-plumbers involved in the manufacture of the 'pod' or 'module'.

At the time the CRIS was published, plumbing regulators nationally were looking to develop a consistent policy response to the emerging issue of pre-fabricated plumbing modules. To assist in developing that response, the CRIS sought comment from WA stakeholders on:

(a) the extent to which pre-fabricated bathroom and kitchen 'pods' are being used in the residential construction sector in WA;

(b) what issues plumbers are experiencing with this emerging trend; and

(c) what solutions stakeholders would like to see implemented by plumbing regulators.

Stakeholder comment

In their responses on this issue, stakeholders cited the following concerns with the way things were operating:

- *Unfair responsibilities for plumbers connecting to prefabricated modules or buildings that have not had the internal plumbing certified by another plumber and/or do not have WaterMark certification.*
- *Concern about whether plumbing products within a prefabricated module or building are safe and fit for purpose.*
- *Concern about whether the plumbing installation within a module has been carried out to the prescribed standards or that the workmanship is of a high quality.*

Across the board, the view expressed was that a regulatory solution was required to address the issues.

MPGA executive submission

The MPGA executive submission provided examples of prefabricated modular structures with integrated plumbing services ready for connection, such as kitchen modules, pre-fabricated granny flats, pre-fabricated sheds and workshops and complete dwellings such as transportable houses and cabins.

The submission also cited areas of construction where pods, modules and pre-plumbed units of various descriptions are becoming more prevalent, particularly:

- city apartment buildings;
- student accommodation;
- hotels;
- worker accommodation, kitchens, and ablution facilities for mine sites and resource developments; and
- schools and day care centres.

They cited several examples of developments in the Perth CBD and surrounding suburbs where pre-fabricated modules from China have been installed, such as Peppers Kings Square Hotel, Tribe Hotel West Perth, Double Tree hotels in Barrack Square and Northbridge and Hyatt Place at Leighton Beach.

In regard to the question about the sorts of issues plumbers are experiencing with this emerging trend, the MPGA executive submission's response was:

> "*As off-site prefabrication becomes more prevalent, so too will the workload on plumbers and building inspectors who are responsible for assessing the WaterMark compliance of integrated plumbing systems. This is a far reaching issue because prefabrication involves more than modules or complete transportable structures such as granny flats. It includes a wide range of sub-components, for example banks of water heaters, wall frames, pumps and fire protection systems that arrive on site with pipes and fittings attached. The installing plumber is responsible for the compliance of 'pods' that are made in factories by non-plumbers. In other words they have legal liability for something over which they have no control. Plumbers are under pressure from builders and developers to install 'pods' or risk being unemployed.*"

In regard to possible solutions, the MPGA executive submission proposed the following:

> *"A broadly–scoped WaterMark Technical Specification that addresses all types of prefabricated units - not just bathroom modules - will keep the WaterMark system in step with the industry. In addition to taking the pressure off plumbers and building inspectors and making importers and suppliers responsible for compliance, it will create a more clearly defined protection for public health and safety."*

MPGA members' combined submission

The MPGA general submission stated the following:

> *All offsite plumbing work should be regulated the same as on-site plumbing work. All work needs to be carried out by a licensed plumber otherwise nobody has any idea as to what has been installed and by whom. All works need to comply with AS 3500, the Plumbing Code of Australia and the NCC (PCA V3) in its entirety.*

Plumbing industry comment separate to MPGA

Comment from the broader plumbing industry (including general and housing plumbing businesses, plumbing employees and major project plumbing contractors) reflected that there is a general acceptance that modular construction with built-in plumbing components is a growing trend and is becoming more commonplace due to cost savings and ease of construction.

However, the feedback highlighted a general consensus that compliance with plumbing standards, plumbing certification and/or WaterMark certification is unsatisfactory and needs to be addressed. Many comments were along the lines that compliance is failing in this area and that some form of tighter regulation is required, whether that be Watermark certification, a certificate of compliance by a licensed plumber or more inspections by plumbing inspectors.

There was also general agreement that the current situation unfairly places the compliance responsibility for all the integral plumbing on the connecting plumber.

Some of the comments made by plumbers and plumbing companies were:

- *Pods are the future but still need to comply with Australian Standards.*
- *It's fine if plumbing is carried out to Australian Standards. I have seen units from China and none of the internal plumbing is WaterMarked.*
- *Construction of imported pods must be supervised by an LPC who is accountable otherwise there will be issues within the walls when it is too late. We are experienced with these installations and issues.*
- *Plumbers have no knowledge of the material and origin and are then required to test, commission and certify.*
- *Pods must be provided with a Certificate of Compliance.*
- *Should not be installed unless constructed in Australia and Watermarked or certified.*

Conclusion

Having considered the issues associated with pre-fabricated modular plumbing installations in light of the information provided in the submissions on the CRIS and the ABCB's May 2019 decision and Notice of Direction, it seems clear that any solution needs to align both with the changes to the WaterMark certification scheme and the plumbing standards applicable to WA.

On that basis, it is proposed to implement the decision set out below in relation to pre-fabricated modular plumbing installations in this State. Building and Energy is of the view that this decision will ensure that only safe and fit-for-purpose plumbing products and systems are installed, while at the same time ensuring that innovation and flexibility for builders and developers is maintained.

Decision Eleven

In line with the May 2019 amendments to the WaterMark certification scheme, the Notice of Direction issued by the ABCB, and the feedback from industry stakeholders in response to the CRIS, the Plumbing Regulations are to be amended where necessary to require the following:

(a) Pre-fabricated plumbing modules with integral plumbing that are deemed to fit within the WaterMark scheme and are WaterMark certified to WMTS-050 can be installed in, or connected to, a plumbing installation in WA. The module may be constructed by a person who does not hold a plumbing licence. However, the installation or connection of the module on site must be performed by, or under the direction and control of, a WA-licensed plumber and be certified by a WA LPC in accordance with the Plumbing Regulations.

(b) Pre-fabricated plumbing modules with integral plumbing that are not WaterMark certified must have the integral plumbing constructed by, or under the direction and control of, a WA-licensed plumber and be certified by a WA LPC in accordance with the Plumbing Regulations. The installation or connection of the module on site must also be performed by, or under the direction and control of, a WA-licensed plumber and must be certified by a WA LPC in accordance with the Plumbing Regulations.

2.8 Decision Twelve – Regulating plumbing designers and plumbing design verifiers

The PCA sets out the minimum technical standards that plumbers must meet when carrying out plumbing work. These standards are referred to in the PCA as "Performance Requirements". Compliance with the Performance Requirements can be met through the following methods:

(a) by complying with the relevant Australian Standards (referred to in the PCA as a "Deemed-to-Satisfy" Solution);
(b) by a "Performance Solution"; or
(c) by a combination of both (a) and (b).

The CRIS discussed a number of issues surrounding the verification of Performance Solutions and the design of Deemed-to-Satisfy Solutions in complex plumbing installations. That discussion took into account a recommendation made by ACIL Allen that WA's plumbing legislation be amended to assign responsibilities to designers of plumbing installations, and provide a mechanism for designers to be sanctioned if their designs are found not to meet the Performance Requirements of the PCA.

(a) Designers of complex Deemed-to-Satisfy Solutions

Deemed-to-Satisfy Solutions are by far the most common method used to comply with the PCA. Arguably, they are also the more straightforward way to ensure compliance as they rely on the simple application of the relevant Australian Standards and require no independent verification by an expert. However, as building projects and the plumbing installations that go with them become more complex and technologically challenging, plumbing inspectors are increasingly coming across Deemed-to-Satisfy Solutions that have not been designed in compliance with the Performance Requirements of the PCA.

CRIS proposal

As the plumbing legislation currently contains no requirement that designers must ensure that their designs comply with the PCA, the CRIS asked whether that should be addressed by placing duties on designers of Deemed-to-Satisfy Solutions for buildings in Classes 2 to 9 of the building classification system used in the NCC (i.e. buildings other than single dwellings).

As shown in Table 16 in Appendix D, 99 per cent of the responses to this question in the CRIS supported this proposal. However, opinions varied significantly as to the degree of regulation that should be imposed.

Stakeholder feedback on complex Deemed-to-Satisfy Solutions

The Association of Hydraulic Services Consultants Australia (AHSCA) submission, supported by the MPGA executive, proposed that a two-tier licensing arrangement for hydraulic designers should be put in place, based on the type of building involved and the specific hydraulic service that is being designed. The following matrix provided with the MPGA executive submission summarises the AHSCA's concept.

Building Classification (NCC)	2 Storey and under. (<6m) License Grade	3 Storey and above. (> 9m) License Grade	> 500sqm in TOTAL building area. License Grade
Class 1 a & b	Grade 1	Grade 1	Grade 2
Class 2	Grade 1 *	Grade 2	Grade 2
Class 3	Grade 2	Grade 2	Grade 2
Class 4	Grade 2	Grade 2	Grade 2
Class 5	Grade 1 *	Grade 2	Grade 2
Class 6	Grade 2	Grade 2	Grade 2
Class 7	Grade 2	Grade 2	Grade 2
Class 8	Grade 2	Grade 2	Grade 2
Class 9a	Grade 2	Grade 2	Grade 2
Class 9b	Grade 2	Grade 2	Grade 2

Specific Hydraulic Service	Residential Class 1 <6m. License Grade	Residential Class 2 & 3 >9m & <25m. License Grade	Commercial project. License Grade	Industrial Project. License Grade	Mulit storey >25m. License Grade
Wet Fire Services*	Grade 2	Grade 2	Grade 2	Grade 2	Grade 2
Onsite Sewer Treatment & disposal	Grade 1	Grade 2	Grade 2	Grade 2	Grade 2
Sanitary Drianage and Stack systems	Grade 1	Grade 2	Grade 2	Grade 2	Grade 2
Cold & Hot water systems	Grade 1	Grade 2	Grade 2	Grade 2	Grade 2
Recycled water systems**	Grade 1	Grade 2	Grade 2	Grade 2	Grade 2
Fuel gas services	Grade 1	Grade 2	Grade 2	Grade 2	Grade 2
Trade Waste Systems		Grade 2	Grade 2	Grade 2	Grade 2
Stormwater -Catchment < 1000sqm***	Grade 1	Grade 2	Grade 2	Grade 2	Grade 2
Stormwater -Catchment >1000sqm***	Grade 2	Grade 2	Grade 2	Grade 2	Grade 2
Roof Drainage design (DTS)	Grade 1	Grade 2	Grade 2	Grade 2	Grade 2
Roof Drainage (Performance based)	Grade 2	Grade 2	Grade 2	Grade 2	Grade 2
Pump Station (Sewer/ Stormwater)	Grade 2	Grade 2	Grade 2	Grade 2	Grade 2

Grade 1	Certificate 4 Level Qualification in DESIGN stream and two years experience under a Full member of the AHSCA.
Grade 2	Diploma Level Qualification in DESIGN stream and six years experience , suitable for Full membership of the AHSCA
	Not generally applicable.

* Limited to 4 units in Development

In principle, the AHSCA believe that designers should be licensed by government but that the assessment/accreditation process for obtaining a licence should be carried out by a competent body independently of government. The AHSCA is developing an accreditation scheme that it hopes will become the hydraulic services industry standard. In its view, the minimum level of qualification to become a licensed designer is a Certificate IV.

Other submissions from the plumbing industry supported a tiered model whereby the level of qualification increases in line with the level of complexity of the plumbing installation. For example, one plumbing company that specialises in major projects suggested the following tiers of qualification:

- For buildings up to three storeys in height, but excluding complex buildings such as hospitals, aged care homes and sports stadiums – an LPC
- For buildings between four and six storeys in height, but excluding complex buildings such as hospitals, aged care homes and sports stadiums – a person who holds a Certificate IV in Hydraulic Design.
- For buildings above six storeys in height and all types of complex building – a Diploma in Hydraulic Design or a degree in hydraulic engineering (a degree in another engineering discipline was not supported on the basis that the holders would not have sufficient understanding of the complexity of the design and installation process for plumbing installations).

Although less complex than the one put forward by the AHSCA, the above model is based on the same principal that the more complex the installation, the higher the level of competency should be.

Many submissions included the LPC in the category of person who should be permitted to design plumbing installations. However, views varied as to whether it should be all LPCs or only those LPCs who are 'experienced' or who have 'proven knowledge' or who have completed further training or obtained other (relevant) qualifications, such as a Certificate IV.

Another major project plumbing company said that the growing trend of 'design and construct' projects meant that plumbers were designing complex plumbing installations "out of their depth". The company said that this trend was price-driven and resulted in non-compliant installations – a situation that they regarded as "dangerous" and a "potential disaster". Conversely, other respondents argued that anyone designing a plumbing system needed to have either a plumbing background or some level of plumbing training, regardless of the level of design or engineering qualification they may have.

Others cited the current lack of any career path for LPCs as another reason why they wanted to see the introduction of training and qualification requirements for designers of plumbing systems.

A number of submissions said that regulating plumbing design was more of a national issue and that WA should follow the path of other jurisdictions in having some form of registration or licensing scheme for designers of plumbing installations.

The vast majority of people who responded to the question about whether there were any types of project where they felt that design qualifications were not warranted (Question 24 in the CRIS) replied in the negative.

Among those who felt there was some room for exemption, the following situations were cited:

- Simple and straightforward residential projects (also referred to as "cottage work") where any risk is confined to the residence.
- LPCs should be permitted to design systems for 'design and construct' projects and for domestic and commercial buildings up to three storeys in height.

(b) Designers and verifiers of Performance Solutions

In the case of Performance Solutions, the PCA requires the design to be verified using one of four methods prescribed in the PCA. Those prescribed verification methods include "expert judgement" and "evidence of suitability". The PCA does not list the categories of person permitted to provide "expert judgement". Similarly, aside from a reference to professional engineers, the PCA does not specify the categories of person permitted to provide "evidence of suitability" of a Performance Solution.

CRIS proposal

Currently, the limitations of the Plumbing Act in WA mean that the responsibility for ensuring that the design of a Performance Solution complies with the PCA falls to the LPC. As this often places an unfair burden on the LPC, the CRIS proposed amending the legislation to allocate the responsibility more appropriately. Four options setting out various levels of regulation, ranging from self-assessment to licensing were presented for consultation. These are discussed later in this DRIS.

Stakeholder feedback on Performance Solutions

The feedback received supported the view that in addition to regulating the design of Performance Solutions, the verification of Performance Solutions should also be regulated. The view was also expressed that the liability for non-compliant designs should lie with the designer and/or design verifier and not the installing LPC (unless they are the same person.)

However, as detailed below and in section 9 of Appendix D, views varied as to how that should be achieved, with the majority wanting to see a class of licence introduced both for designers and verifiers of Performance Solutions.

The MPGA executive submission and the MPGA members' combined submission both referenced the terminology used in the PCA, saying that the regulations should specify that a performance solution must be verified by a person with "expert judgement" in the area of plumbing and drainage.

In determining what qualifies as "expert judgement", the MPGA executive submission proposed that a Diploma course should be developed to provide the level of knowledge that a verifier would need in order to meet the "expert judgement" requirement. They said that the qualification needed to be broad, *"to allow the capturing of skills possessed by the high level qualifications of an engineer/hydraulic design consultant."* The MPGA executive submission also supported a licensing requirement for this type of work.

The general view expressed by hydraulic services consultants was that in the same way that licensed plumbers are required to certify that their work to install a performance solution complies with the PCA, hydraulic designers should similarly be required to certify that their designs are compliant. Opinions varied as to the qualifications that designers should be required to have in order to be able to certify compliance, with some respondents saying that the regulations should simply refer to *"a person with expert judgment and who has the knowledge and experience to carry out research and prepare data to demonstrate the performance requirements"*, and others saying that it should only be open to design engineers who are qualified in "*all areas of plumbing".*

The solution proposed in the submission from the AHSCA was for a two-tier licensing arrangement for hydraulic designers, based on the type of building involved and the specific hydraulic service being designed. They also said that designers should be members of a relevant professional association, such as AHSCA. The two-tier licensing structure proposed by the AHSCA was supported by the MPGA executive.

Of the responses received from individual members of the plumbing industry, many were aligned with that of the MPGA executive. Others specified that the person verifying a performance solution should be a qualified hydraulic engineer. One or two indicated that verification could be done by an experienced LPC, saying that the best designs were by "*plumbers, not draftsmen*".

Among the industry associations who submitted comment, the majority expressed similar views to those outlined above. The only exception was a suggestion from one plumbing industry association that there should be two tiers of verification – one being for design and the other for installation and operation.

The remaining groups of stakeholders all expressed similar views to those already discussed above.

The options for regulating design and design verification services

The CRIS presented four options for the regulation of plumbing designers and design verifiers and asked stakeholders to say which of the options they preferred, and why. The four options are detailed below.

Option One – Self-assessment

As the fundamental issue is to ensure that a design complies with the PCA, the simplest way to address the problem is to provide in regulation that a person who designs and/or verifies a plumbing installation must ensure (prior to installation) that the solution will comply with the PCA. This would obviate the need for any regulation around who can be a plumbing designer or verifier and would simply focus on the required outcome (i.e. compliance with the PCA).

In a practical sense, this replicates the current approach in WA but with the added benefit of ensuring that both the designer and the installing plumber have a shared responsibility for ensuring overall compliance with the PCA. This would also address ACIL Allen's recommendation that the responsibility for any failure relating to the design of an installation should rest with the designer.

Option Two – Competent person

The second option adds a little more prescription to Option One by amending the Plumbing Regulations to add that the designer and verifier must be a 'competent person'. The term 'competent person' is used in the Occupational Safety and Health Regulations 1996 and is defined very broadly in those regulations as: *"in relation to the doing of anything, a person who has acquired through training, qualification or experience, or a combination of those things, the knowledge and skills required to do that thing competently."*

There is no reason why a similar construct, supported by guidance material, could not be used in the Plumbing Regulations. This option imposes little in the way of regulatory burden but does recognise that designing and verifying plumbing installations is work that requires competency and expertise.

Option Three – Authorisation

The third option increases the level of prescription still further by designating specific categories of person as being 'authorised' to design and verify plumbing installations. This could be achieved by listing the categories in the Plumbing Regulations. For example, the Plumbing Regulations could list the following as 'authorised persons' for the purposes of designing plumbing installations and verifying Performance Solutions:

- Licensed plumbing contractors
- Hydraulic consultants
- Practising engineers with a hydraulics specialisation
- Practising architects with a hydraulics specialisation
- Any other person specifically authorised by the regulator

This is still a relatively 'light touch' approach in terms of regulatory burden but would provide clarity as to who is permitted to design and verify plumbing installations.

Option 4 – Licensing

The most costly and regulation-heavy option is to limit plumbing design work and plumbing design verification work to people who have been licensed by the plumbing regulator to carry out such work.

Because each person would be assessed on an individual basis, this would ensure there is tight control around who is permitted to design and verify performance solutions and complex plumbing installations. However, it would impose costs on industry and government and it is arguable whether those costs would be outweighed by the benefits that would accrue from such tight regulatory control.

Stakeholder feedback on the options

A total of 123 submissions responded on the options presented in the CRIS. This included the MPGA executive submission and the MPGA members' combined submission.

The vast majority favoured Option 4 – licensing for designers. The following extracts from some of the submissions illustrate the reasons for taking that view.

- *Licensing promotes responsibility, control and penalty.*
- *Defines a pathway.*
- *Then everyone will be accountable and traceable.*
- *Licensing process will include verification of competencies, and penalties.*
- *Will achieve competent designs.*
- *If he is licensed he is liable.*

The next most popular option was a hybrid of Option 4 (licensing) and Option 3 (Authorisation), followed by Option 3 on its own. Some of the comments made were:

- *Authorisation would protect builders, plumbers and customers without overly burdensome regulation.*
- *Designs should be registered and final construction is signed off as compliant with the design – as in New Zealand.*
- *A hybrid of 3 and 4 to be in line with engineers/architects and other design disciplines.*

Option 2 was supported by only 3 respondents, although two more did support a hybrid of Options 2 and 3. One supported a hybrid of Options 2 and 4. Option 1 received no support from stakeholders.

An alternative option suggested was for there to be a register of 'approved' designers.

Design regulation in other jurisdictions

As illustrated in Table 17 in Appendix D, research conducted by Building and Energy indicates that each jurisdiction has a slightly different approach to the regulation of plumbing designers and verifiers.

New South Wales and Victoria have no specific requirements for design and verification, leaving it up to the installing plumber to ensure compliance with the PCA.

Queensland allows design services up to a value of $1,000 to be carried out by any person. Anything over that amount must be done by a licensed plumber or a hydraulic designer.

South Australia has no regulation around who can design or verify a plumbing solution, but hydraulic designs for water supply, sanitary and drainage plumbing in the larger and more high-risk developments must be submitted to the plumbing regulator who carries out audits and inspections of those designs.

In Tasmania, the legislation does specify who may design a plumbing installation but the compliance side of things is dealt with by the local government as part of the building permit process.

The Australian Capital Territory has a category of certifier called a Plumbing Plan Certifier who must sign off on plumbing designs. It is the Plumbing Plan Certifier who then takes responsibility for any compliance issues.

Analysis

Building and Energy has considered matters in the light of the extensive feedback provided in response to this proposal in the CRIS and is of the view that there is a case for amending the Plumbing Act to place duties on designers of both Deemed-to-Satisfy Solutions and Performance Solutions, and to specify who is permitted to verify Performance Solutions.

The *Building Confidence Report*

The *Building Confidence Report* released by the BMF in April 2018 set out a number of recommendations for a national best practice model to strengthen the effective implementation of the NCC as a whole.

Two of the recommendations in the *Building Confidence Report* relate specifically to the roles and responsibilities of designers and the adequacy of the design documentation they produce to demonstrate that the buildings they have designed comply with the Performance Requirements of the NCC.

The BMF has accepted the recommendations in the *Building Confidence Report* and has agreed an implementation plan. In developing that plan, the BMF has chosen to give particular priority to six of the recommendations. Those six include the recommendation that each jurisdiction should require designers, draftspersons and engineers to be registered (Recommendation 1) and that design documentation submitted by those registered practitioners as part of the building approval process must adequately demonstrate compliance with the NCC (Recommendation 13).

While the focus of the *Building Confidence Report* was largely on Volumes 1 and 2 of the NCC (the Building Code of Australia), the Report did identify that in relation to plumbing design work, only some jurisdictions require complex work to be documented by a registered engineer before building approval is given, and that in other jurisdictions there is no regulatory requirement for plumbing design documentation at all at building approval stage. This leaves the plumber responsible for both the design and installation even though they may not have the engineering skills to design the system. The Report said that this weakness should be addressed in the implementation of Recommendation 13.

Decision

WA has given the BMF its in-principle agreement to implement Recommendations 1 and 13 of the *Building Confidence Report*, and Building and Energy is currently working on the preparation of two CRIS documents to seek stakeholders' views on the options available.

As the implementation of Recommendations 1 and 13 will cover all aspects of the NCC, including plumbing, any decision as to whether a licensing or registration requirement should be brought in for plumbing designers and design verifiers needs to be taken following the outcome of the CRIS processes referred to above.

On that basis, it is not proposed that the plumbing legislation be amended at the current time to incorporate a licensing or registration requirement for plumbing designers and design verifiers.

However, in the intervening period, steps will be taken to address ACIL Allen's recommendation that WA's plumbing legislation should be amended to assign responsibilities to people who design plumbing installations, and provide a mechanism for such designers to be sanctioned if their designs are found not to meet the Performance Requirements of the PCA.

This will ensure there is greater regulation around plumbing designers than there is at present, and will also lay the foundations for any licensing or registration requirement that may result from the implementation of Recommendations 1 and 13 of the *Building Confidence Report*.

Decision Twelve

The scope of the Plumbing Act is to be broadened to implement the following new provisions for the regulation of plumbing design work for buildings classified in Classes 2 to 9 of the National Construction Code*:

(d) Any person may design a **Deemed-to-Satisfy Solution** but he or she must ensure that the design is such that the installation will comply with the Performance Requirements of the PCA. Designers will face sanctions if the design of a Deemed-to-Satisfy Solution is found not to comply with the PCA.

(e) Any person may design a **Performance Solution** but he or she must ensure that the design is such that the installation will comply with the Performance Requirements of the PCA. Designers will face sanctions if the design of a Performance Solution is found not to comply with the PCA.

(f) All Performance Solution designs must be verified as meeting the Performance Requirements of the PCA by a person authorised under the Plumbing Act to verify Performance Solutions. The Plumbing Regulations will list the categories of authorised person.

***This excludes single dwellings and small residential facilities.

2.9 Decision Thirteen – Corporate Licensing for Plumbing

Background

In their report, ACIL Allen indicated that during the various consultation sessions it had conducted, it had been pointed out that the current licensing framework for plumbing does not permit corporate structures such as licensed plumbing companies or partnerships[16].
This view appears to have been based on the fact that under regulation 14 of the Plumbing Regulations, plumbing licences can only be issued to natural persons, not business entities.

ACIL Allen questioned the desirability of preventing corporate structures in the plumbing industry and saw no reason why a plumbing business could not be operated by a non-plumber, provided that the person carrying out the plumbing work for the business is appropriately licensed to do so. ACIL Allen's view was that the current arrangement in WA represents an unnecessary barrier to entry to the plumbing industry and should be removed.

Expanding the regulatory regime to include a class of plumbing licence for companies and partnerships in addition to the existing 'natural person' class could also provide greater transparency for the consumer. This is because it would address the anomaly that currently arises in cases where a company that is not operated by a licensed plumber contracts with a customer to carry out building work that incorporates an element of plumbing work. For example, a bathroom or kitchen renovation.

In such cases, the way the plumbing legislation is currently structured generally means that the building company must sub-contract out the plumbing work to a licensed plumbing contractor who is then not only required to ensure the work complies with the legislative requirements but must also take liability for any issues with the work for the next six years (or longer in certain cases).[17] At no stage does the statutory liability for the plumbing work transfer to the building company, even if the plumber disappears or passes away.

This can create issues for the building company and/or the company's customer in cases where a plumbing inspector subsequently finds the plumber's work to be sub-standard or faulty and in need of rectification. While there are avenues available for the customer to seek redress either through the courts or by making a complaint to Building and Energy, those actions cannot succeed unless the person who actually carried out the plumbing work can be identified.

The business licensing model

ACIL Allen recommended that the plumbing laws be amended to introduce a corporate licensing structure similar to that which had been proposed under the now-abandoned National Occupational Licensing Scheme (NOLS).

Under that proposal, it was envisaged that any company or partnership could apply for a plumbing licence provided that they could identify someone within the business to be their 'nominee'.

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[16] Section 4.1.1 of the ACIL Allen report (p. 52)
[17] Under regulation 71 of the Plumbing Regulations, a rectification notice can be issued to a licensed plumbing contractor at any time during the 6 years following the completion of the plumbing work. If a rectification notice is issued in that period, a further 6 year 'warranty' period commences from the time that notice is given.

The nominee had to be the holder of a valid plumbing contractor's licence **and** occupy one of the following roles in the business:

- In the case of a body corporate or a partnership involving a body corporate – a director or employee.
- In the case of a partnership involving individuals – a partner or an employee
- In the case of an individual (sole) trader – an employee.

NOLS proposed to establish a link between the nominee and the business so that it could be readily determined which person within the business had ultimate responsibility for ensuring compliance with the plumbing laws. As was pointed out in the DRIS for the NOLS proposal, it can be far more difficult to establish responsibility for breaches where a licence holder who performs the work has no ongoing link to the business that has contracted for the work as it can be hard to locate and contact the licence holder, particularly when a large company is involved.[18]

ACIL Allen saw no reason why the NOLS approach could not work in WA and no reason why a plumbing business could not be operated by a non-plumber.

Accordingly, they recommended that the NOLS 'nominee model' be adopted in WA's plumbing laws.

Impact analysis

As part of the development of the CRIS, Marsden Jacob was asked to assess the impact of introducing a new business licence category for plumbing.

The modelling used by Marsden Jacob in conducting the assessment assumed that only large or medium-sized businesses would be likely to take up the business licence option. On that basis, they calculated that around 15 per cent of the number of plumbing contractor licences currently on issue would convert to a business licence. Their estimate as to the cost of implementing the new type of licence was $2.46 million, or $289 per entity per annum.

Marsden Jacob acknowledged that the potential beneficiaries of the change would be consumers, the broader industry and business licence holders (to the extent that the business licence would be a preferable arrangement for them). However, Marsden Jacob had difficulty in seeing how those benefits would be realised. In large part, that was due to a lack of clarity around how the responsibilities and liabilities associated with running a plumbing business and performing plumbing work might change under this reform.

The uncertainty around the benefits associated with the introduction of a business licence meant that Marsden Jacob was unable to determine whether the corresponding costs would be outweighed. On that basis they did not recommend a reform to introduce a business licence. (See Section 3.7 of Marsden Jacob's report at Appendix A.)

[18] P. 50 of the Decision Regulation Impact Statement on the Proposal for national licensing of the plumbing and gasfitting occupations. (ISBN 978 1 921916 11 3)

Subsequent to the completion of the assessment by Marsden Jacob, the Government asked the ERA to undertake a state-wide inquiry into options to reduce the regulatory burden and other economic costs of all state government business licensing. As the ERA inquiry was to incorporate a public consultation process of its own, the CRIS did not seek comment from stakeholders on ACIL Allen's recommendation around corporate licensing for the plumbing sector.

The MPGA said it was disappointed by the decision to defer the discussion, saying that the proposal was very important and required further consideration and consultation and that the *"existence of the ERA review should not be an excuse for avoiding it."*

While the MPGA submission did not go on to offer its views on the matter of business licensing for the plumbing industry, it is noted that in the MPGA's February 2014 response to the ACIL Allen report, it stated that it "totally disagreed" with the recommendation that the Plumbing Regulations be amended to allow contractors who are not plumbers, and did not agree with the ACIL Allen recommendation that a contractor level of licence be introduced.

Subsequent events

The ERA's report, *"Inquiry into reform of business licensing in Western Australia"*[19] (ERA Report), was tabled in Parliament on 21 March 2019. One of the key themes in the ERA Report was the importance of applying the principles of best practice regulation when considering the implementation of a licensing requirement. The point was also made that as licensing creates costs and delays for businesses, government should impose those costs only when there is a justifying community benefit.[20]Moreover, those benefits should be greater than the costs of implementing and managing the licensing requirement.

Decision

Building and Energy has re-examined the ACIL Allen recommendation in the light of the ERA Report and is of the view that in the absence of any evidence to demonstrate that there is a clear need for the introduction of a business licence category to enable non-plumbers to operate a plumbing business, or that the costs of such a scheme would be outweighed by the benefits it would bring, the case for adopting ACIL Allen's recommendation is not made out.

On that basis, no changes are to be made to the current licensing arrangements to introduce a corporate plumbing licence category.

Decision Thirteen

The Plumbing Regulations will not be amended to introduce a category of corporate licence for plumbing. Consequently, plumbing licences will continue to be issued to 'natural persons' only.

[19] Available online at https://www.erawa.com.au/licensinginquiry
[20] ERA Report p.4

2.10 Decision Fourteen – Business training as a pre-requisite for a plumbing contractor licence

Under the current arrangements, to qualify for a plumbing contractor's licence, a person must (among other things) complete three specified business units of competency. One unit is taken from the Business Services Training Package and two are from the Construction, Plumbing and Services Training Package.

ACIL Allen took the view that including business training in the eligibility requirements for a plumbing contractor licence was an unnecessary barrier to entry into the industry and should be removed. ACIL Allen's opinion was that business skills are not a relevant consideration in the context of public health and thus should not be a condition for obtaining a plumbing contractor's licence.

The CRIS sought comment on ACIL Allen's recommendation.

Stakeholder feedback

As shown in Table 18 in Appendix D, the vast majority of respondents expressed strong opposition to removing the business training requirement, on the grounds that it provides valuable information for people starting a business and that it was important for LPCs to be prepared for the commercial and legal realities of the business world. One submission went further by saying:

> *[Business training] reduces the number of contractors going out of business and ensures they are competent. Ultimately it's good for the tax payer [sic].*

Some respondents also pointed to the fact that being able to understand the fundamental basics of business, such as estimating; pricing work; establishing work procedures and understanding liabilities, also protected the consumer. The following quote from one submission illustrates this point of view:

> *The industry needs to have this training to provide some level of business competence for the business owner so they do not put themselves or others at financial risk.*

For those who supported the removal of the business training element, the reasons given were that the licence prerequisites should only focus on plumbing technical matters and that as not all LPCs run their own businesses, not all applicants should be required to undergo business training to be eligible for a licence.

Regulation in the other states and territories

In looking at how this issue is dealt with in the other states and territories, the only jurisdiction that does not require business training as a prerequisite for obtaining a contractor licence is New South Wales. As section 10 in Appendix D shows, all of the other jurisdictions are similar to WA in terms of the type of business training they require.

Conclusion

While it is reasonable to argue that it is not for the plumbing legislation to ensure that LPCs are given a grounding in how to operate a successful business, one of the things that the legislation does seek to do is to ensure that consumers of plumbing services are sufficiently protected not only from a health perspective but also a commercial perspective.

Although the cost benefit analysis conducted for the CRIS was unclear as to whether the current business training does in fact result in a better service to customers, it concluded that the net benefit of removing the requirement was minimal (see Section 3.8 of Marsden Jacob's report at Appendix A).

On that basis, there seems to be little economic reason to disturb the current arrangement.

Decision Fourteen

The current requirement for business training as a prerequisite for obtaining a plumbing contractor's licence is to be retained.

2.11 Decision Fifteen – Insurance for LPCs

ACIL Allen noted that, unlike Victoria, WA does not require LPCs to hold insurance. ACIL Allen viewed mandatory insurance as an important consumer protection measure and recommended that it be introduced for LPCs in WA as a condition of licensing.

In their report, ACIL Allen made references to both public liability insurance and professional indemnity insurance but it was not entirely clear whether they thought that both types of insurance should be mandatory or just one or the other. In conducting the cost benefit analysis for the CRIS, Marsden Jacob therefore assessed both types of insurance.

Marsden Jacob concluded that while the costs of introducing mandatory *public liability insurance* would be minimal as most LPCs already carry such insurance, the cost of mandating *professional indemnity insurance* would be significant. Moreover, their analysis was not able to easily identify the corresponding benefits that would accrue. (see Section 3.9 of Marsden Jacob's report at Appendix A). Consequently, the conclusion reached in the CRIS was that the introduction of mandatory insurance could be construed as adding red tape and should not be implemented.

Stakeholders were therefore asked to comment on a proposal that insurance **not** be made a mandatory condition of licensing despite ACIL Allen's recommendation to the contrary.

Stakeholder feedback

The responses to the CRIS showed that just under 50 per cent of people who answered this question were opposed to the introduction of both types of insurance. This compared to around 35 per cent of respondents who thought that professional indemnity insurance should be mandatory but public liability insurance should not be mandatory; and 19 per cent of respondents who thought both types of insurance should be mandatory (see Table 19 in Appendix D).

Although the reasons given in support of those views were varied, one important observation made by several respondents was that many LPCs do not run their own businesses and operate only as employees. For these LPCs, the imposition of mandatory insurance as a condition of being able to carry out plumbing work would be both onerous and of little value as they would likely be covered by their employers' insurances.

Those who supported the concept of mandatory insurance said that it would protect consumers; provide consumer confidence and was just *"smart business"*.

Conclusion

As the consumer is already protected from poor workmanship through the disciplinary provisions in the Plumbing Regulations and the six-year statutory warranty scheme that makes all LPCs liable for the rectification of sub-standard or non-compliant work, it is the view of Building and Energy that there is little need for a further layer of regulation through the introduction of mandatory insurance.

Furthermore, it is important to note that as part of the business training discussed in section 2.10 above, prospective LPCs must complete the unit of competency, *Establish legal and risk management requirements of small business (BSBSMB401)* from the Business Services national training package. One element of that unit of competency - *Identify and treat business risks* - has as one of its performance criteria, *Develop actions to mitigate risks including identifying insurance requirements and adequate cover*.

On that basis, it could be argued that as every LPC should already be aware of the financial risks associated with running a plumbing business (and the action he or she should take to mitigate those risks), there is no need for further regulation to underscore the important role that adequate insurance can play.

Decision Fifteen

Mandatory insurance requirements will not be introduced as a prerequisite for obtaining a plumbing contractor's licence.

2.12 Decision Sixteen – Scope of a restricted plumbing permit

A restricted plumbing permit (RPP) allows suitably qualified licensed electricians and gasfitters to carry out like-for-like water heater changeovers under a reciprocal arrangement that also enables licensed plumbers to carry out a limited scope of electrical work in the course of doing the same type of work. Electricians and gasfitters are required to complete appropriate training units to attain the required skills and knowledge prior to obtaining an RPP.

The RPP scheme has been in operation since October 2005. However, in July 2007 the PLB closed the scheme to new entrants. In January 2015, the then Minister for Commerce reversed that decision on the grounds that it was unreasonable to expect a consumer to engage two separate tradespersons to carry out a job that could be done safely by one or the other.

CRIS proposal

As changes in technology and installation requirements since 2005 have rendered RPP holders unable to comply with the Plumbing Regulations when carrying out a water heater changeover in many instances, the CRIS sought feedback on whether the scope of work covered by an RPP should be amended and, if so, how far those amendments should go. The following five options were presented for consultation.

Option one

Amend the Plumbing Regulations to allow a restricted plumbing permit holder, in the course of replacing a water heater, to install an approved flexible hose connector in circumstances where the plumbing standards allow.

Option two

Amend the plumbing regulations as per option 1 and replace a water heater isolation valve.

Option three

Amend the Plumbing Regulations as per Option 2, and replace a minimal amount of pipework.

Option four

Amend the Plumbing Regulations as per Option 3, and alter a relief valve overflow pipe to meet the required standards.

Option five

Amend the Plumbing Regulations as per Option 4, and replace a tempering valve.

Stakeholder feedback

As detailed in Section 12 of Appendix D, the MPGA and the plumbing industry strongly opposed all of the options, with many respondents saying that there should be no amendments to the scope of work permitted under an RPP, even to enable holders to comply with the Plumbing Regulations.

Safety concerns were cited by these respondents but no evidence was provided to show that any safety issues had actually arisen as a consequence of allowing RPP holders to carry out the permitted work, or that the proposed increase in the scope of work would jeopardise safety.

Loss of work for plumbers was also cited by many respondents as a reason not to amend the scope of work covered under an RPP.

Conversely, the Electrical Licensing Board, Electrical and Communications Association of Western Australia (NECA) and the Electrical Trades Union all supported an increased scope of work to varying degrees.

Decision and impacts

The key points to be considered in coming to a determination on this matter are:

- Safety;
- the best possible outcome for consumers;
- the intent of the RPP and its useability; and
- a fair reciprocal arrangement for the trades concerned.

Having considered the five CRIS options in the light of each of those factors and the comments received during the consultation process, the decision reached is to implement **Option two**. This option allows an RPP holder, in addition to what they are currently authorised to do, to carry out the following in the course of replacing a water heater:

- Replace a flexible connector with an approved flexible connector, if the water heater to be replaced was **previously installed with a flexible connector**; and

- Replace a water heater isolating valve if the existing valve is not functional, or if the existing valve is required to be replaced with a full flow ball valve by the water heater manufacturer, providing the valve is able to be replaced without changing the configuration of the existing water supply pipework.

This option reinstates the useability of the RPP, given that:

- flexible connectors are often used in water supply installations nowadays, including for connections to instantaneous water heaters and the current Plumbing regulations ‘specifically’ do not allow a RPP holder to use a flexible connection; and
- a water heater changeover cannot be carried out if the water supply to the unit cannot be isolated and/or the RPP cannot meet the manufacturer’s requirements, which in the case of some instantaneous water heaters requires the isolating valve to be changed to a full-flow ball valve.

These changes recognise that the expertise of an LPC is required if any change to the existing pipes is required; if a relief valve drain line is required to be altered; or if a tempering valve is required to be repaired or replaced.

The changes also recognise that the skills and knowledge of an LPC are superior to those of an RPP holder when it comes to plumbing pipework, relief drain line terminations and tempering valve requirements, thereby ensuring that such work is excluded from the scope of work permitted to be carried out by an RPP holder.

Overall, it is Building and Energy’s view that the revised scope of work in **Option two** ensures that the fundamental purpose of the scheme is achieved without compromising the safety of any party.

This decision is not expected to have any adverse financial impacts.

Decision Sixteen

The scope of work permitted to be carried out by the holder of an RPP is to be amended to add the following when carried out in the course of replacing a water heater:

- replace a flexible connector with an approved flexible connector, if the water heater to be replaced was **previously installed with a flexible connector**; and
- replace a water heater isolating valve if the existing valve is not functional, or if the existing valve is required to be replaced with a full-flow ball valve by the water heater manufacturer, provided that the valve is able to be replaced without changing the configuration of the existing water supply pipework.

2.13 Decision Seventeen - Transition from apprentice to tradesperson

The way the term “apprentice” is defined in regulation 3 of the Plumbing Regulations means that apprentice plumbers cannot carry out plumbing work legally in the period between the completion of their training contract and the day they receive their tradesperson’s licence.

In recognition of that, the PLB operates a policy of not prosecuting apprentice plumbers who carry out plumbing work in such circumstances, provided that he or she has both received a ‘completion agreement’ confirming the successful completion of the training contract, **and submitted an application** for a tradesperson’s licence within 14 calendar days of receiving that agreement.

The CRIS proposed amending the Plumbing Regulations to obviate the need for the PLB’s policy by inserting a provision to the effect that an apprentice who has successfully completed his or her training contract is legally permitted to carry out plumbing work under the direction and control of an LPC from the day they receive their ‘completion agreement’ until the date their tradesperson licence **is issued**, provided that the apprentice applies for and receives his or her licence within two months of the date the training contract was completed.

The aim of the two-month ‘grace period’ is to allow sufficient time both for the applicant to submit an application for a tradesperson’s licence and for that licence to be granted by the PLB, while enabling him or her to work under the direction and control of an LPC during the licensing process.

The question asked in the CRIS was whether two months was an appropriate period of time.

As shown in Table 22 in Appendix D, the number of ‘yes’ votes was only slightly more than the number of ‘no’ votes. However, an analysis of the reasons why people voted ‘no’ shows that it was not so much the time period that they were voting against, but the general proposal to amend the Plumbing Regulations in the way described.

In taking that view, many people supported the MPGA executive’s position on the matter, which was that, *a ‘regulatory fix’ to allow graduate (unlicensed) apprentices to carry out plumbing work is not acceptable to industry*.

The MPGA executive submission also speculated that the proposal was, *merely a mechanism to delay the issue of licences from a government standpoint*, and opined that *there is a very real industrial relations risk to both the employer and employee in any scenario which could result in an excessive delay to the issue of a licence*.

The MPGA executive said that a graduate apprentice should be able to attend the offices of the relevant licensing body the very next day after finishing their apprenticeship and apply for a tradesperson’s licence immediately. Consequently, the MPGA executive stated that a ‘grace period’ of no more than 14 days was a more appropriate timeframe to finalise any documents necessary for the issuing of a tradesperson’s licence.

Conversely, among those stakeholders who did support the principle set out in the CRIS, many said two months was reasonable given that there are several government agencies involved in the process and it takes time to receive the relevant paperwork from each one in order to be able to submit an application for a tradesperson’s licence. Some suggested that because of that, a timeframe of three or six months was more appropriate than two months.

Another submission in support of the proposed change included the following comment:

> *allowing apprentice plumbers to continue to operate under supervision for two months is acceptable, and appropriate to enable them to continue in their trade during a period that is only administrative in nature.*

Conclusion

Building and Energy is satisfied from enquiries made of the Labour Relations Division of DMIRS that the scenario proposed in the CRIS will not give rise to any industrial relations issues and that the concerns raised by the MPGA executive in that regard will not eventuate.

Similarly, Building and Energy does not accept the argument that the implementation of the proposal would financially disadvantage graduate apprentices or impede their ability to obtain employment. Indeed, aside from the timeframe, the proposal in the CRIS simply codifies current PLB policy.

It is also important to note that, while there is nothing to stop a graduate apprentice from submitting his or her licence application on the very next day after (or even the very same day as) he or she receives his or her 'completion agreement', the requirement under the Plumbing Regulations for the PLB to assess the applicant's fitness and propriety to hold a licence means that it is not feasible or reasonable to expect the licence itself to be issued on the same day that the application is submitted.

Aside from the resourcing implications for what is just one licence category among many that DMIRS deals with, the PLB takes very seriously its responsibility under the Plumbing Regulations to ensure that every applicant is a 'fit and proper' person to hold a licence. It therefore follows that the PLB needs a reasonable period of time in which to complete that assessment properly.

In terms of the length of time proposed (two months), the aim is certainly not to stretch out the processing time unnecessarily or unreasonably, but rather to allow those who have completed a four-year plumbing apprenticeship to legally carry out the work they have been trained to do as soon as they graduate.

Decision and impacts

Having considered matters carefully in the light of the feedback received during the consultation process, Building and Energy remains of the view that as the current PLB policy is *ultra vires*, the Plumbing Regulations need to be amended to enable graduate plumbers to work legally in the period between completing their training contract and obtaining their plumbing tradesperson's licence.

To ensure that graduate apprentices have enough time to obtain the relevant paperwork to make a licence application – and that the PLB has time to complete the checks it is required to make under the Plumbing Regulations – a period of two months, as proposed in the CRIS, is considered reasonable and appropriate.

This decision is not expected to have any adverse or financial impacts.

Decision Seventeen

To amend the Plumbing Regulations to the effect that a person who has successfully completed a plumbing apprenticeship under a training contract and has obtained a Certificate III in Plumbing as part of that contract, does not commit an offence if he or she carries out plumbing work under the direction and control of an LPC in the two-month period following the completion of the training contract, provided that an application for a plumbing tradesperson's licence has been submitted to the PLB and the applicant has not received notification from the PLB that the application has been refused.

2.14 Decision Eighteen – Advertising plumbing services

Currently, there is nothing in the plumbing legislation that prevents an unlicensed person or a non-plumbing business from advertising the provision of plumbing services, or services that include regulated plumbing work.

For example, a bathroom or kitchen renovation company operated by a non-plumber is legally entitled to advertise its services even though an element of those services will generally be regulated plumbing work. The only obligation in such cases is that the actual plumbing work must be carried out by an appropriately licensed plumber. Penalties apply if a person knowingly employs or engages a non-plumber to carry out regulated plumbing work.

In order to establish if an offence has occurred in cases where a non-plumbing company has contracted with a consumer to provide services that include plumbing, the regulator must follow a chain of evidence to identify who performed the work. ACIL Allen commented that it would be much more pragmatic and cost reducing if the regulator were instead permitted to act on advertising by non-licensed plumbers. The ACIL Allen report therefore recommended that the Plumbing Regulations be amended to make it illegal for an unlicensed person or business to advertise or otherwise offer to provide plumbing services.

CRIS discussion

The CRIS contained a detailed discussion on the pros and cons of implementing ACIL Allen's recommendation and asked stakeholders to provide comment on whether they considered it appropriate for a ban to be imposed.

Stakeholder feedback

The plumbing industry – led by the MPGA and the Plumbing Trades Employees Union – has long advocated for it to be illegal for people and companies that are not LPCs to advertise plumbing services. They believe that the situation has become much more urgent since the advent of Internet advertising services such as Gumtree and Airtasker. This view was echoed in over 80 per cent of the submissions received in response to the CRIS.

As was summarised in the MPGA executive submission, the plumbing industry's concerns are focused not only on a loss of work for qualified plumbers but also on the implications for consumers and their health and safety. The MPGA also said that allowing such advertising to persist was tantamount to inviting consumers to break the law by engaging unlicensed people.

Section 14 in Appendix D contains further detail on the stakeholder responses to this issue.

Conclusion

While recognising that there will undoubtedly be cases where advertising does lead to the carrying out of plumbing work by unlicensed people (whether intentionally or through ignorance), the empirical evidence indicates that it is not as widespread as the anecdotal evidence suggests.

Similarly, although many responses to the CRIS provided solid reasons as to why such advertising *could* lead to non-compliance, those responses were not generally accompanied by firm evidence that it *had* or that consumers had suffered as a result. Nor has Building and Energy been supplied with evidence to bear out the comment made by the MPGA executive in its submission that unlicensed plumbing work is "*rampant in the community*."

Without diminishing the strength of the views expressed during the CRIS process or the risks that unlicensed plumbing work presents, it is by no means certain that a ban on advertising would have the desired effect unless considerable regulator resources were allocated to it.

For example, the regulator would first need to devote considerable time to identifying current and potential advertisers to notify them of the introduction of a ban. Then, once a ban is in place, the regulator would need to allocate significant resources to follow up on each advertiser who has failed to observe the ban. As no unlicensed plumbing work may have even taken place, this could be viewed as an inefficient use of valuable inspector resources.

There is also the more fundamental question of how to shape the legislation to implement an effective advertising ban that is not easily flouted.

The introduction of a class of business licence as discussed under Decision Thirteen above might address the problem if advertisers such as bathroom renovation companies were required to hold such a licence and put the licence number on their advertising. However, it is highly unlikely that a regulatory impact assessment of the costs of imposing a licensing requirement on such businesses as a way of weeding out unlicensed plumbing work would be outweighed by the potential benefits it could be expected to bring.

It is also important to note that a ban will disadvantage the majority of non-plumbing businesses who already do the right thing and ensure that only appropriately licensed plumbers are engaged to carry out the plumbing work involved as part of the services they advertise. As outlined in the CRIS, many such legitimate companies could be put out of business if an advertising ban of the type under discussion were to be implemented.

Decision and impacts

Taking everything into account, and noting that the regulator has finite resources with which to administer and enforce the plumbing legislation in its entirety, it is Building and Energy's view that the most effective way to tackle the underlying issue is not to ban advertising outright, but rather to make it an offence for a person without a plumbing licence to hold themselves out to be a plumber by advertising to carry out any type of plumbing work.

This would enable businesses such as bathroom renovation companies or companies in the home building sector to continue to advertise, but would make it an offence for, say, a handyman to advertise a tap replacement service or any other regulated plumbing work unless they hold a plumbing licence. This would deal with the area of greatest risk to consumers while enabling those companies who do the right thing to continue operating under their current business models.

As shown in Section 14 of Appendix D, this type of approach is consistent with the majority of the other jurisdictions across Australia.

This decision is not expected to have any adverse or financial impacts.

Decision Eighteen

The Plumbing Regulations are to be amended to make it an offence for people who are not LPCs to hold themselves out to be a plumber by advertising to carry out any kind of licensed plumbing work.

2.15 Decision Nineteen – Supervision and general direction and control by LPCs

The CRIS contained a proposal to amend the Plumbing Regulations to provide greater clarity around the requirement for an LPC to exercise general direction and control over the work carried out by plumbing tradespersons and to supervise the work of apprentices and holders of provisional licences.

It was also proposed that a modified penalty provision be included for use in situations where an LPC has failed to exercise adequate direction, control or supervision.

Although the CRIS did not ask a specific question about this matter, some parties did provide comment, mostly to the effect that more clarity around what constitutes 'general direction and control' and 'supervision' would be welcome.

Others expressed the view that there should be more focus on dealing with illegal operators than penalising licensed people for *minor misdemeanours*.

Decision

Having reviewed the issue in the light of the consultation feedback, Building and Energy sees no reason not to proceed as proposed in the CRIS.

Impact analysis

This decision is not expected to have any adverse or financial impacts.

Decision Nineteen

The Plumbing Regulations are to be amended to clarify the LPC's duty to exercise direction, control and supervision over plumbing tradespersons, apprentices and provisional licence holders, and enable enforcement action to be taken in cases where an LPC has failed to exercise adequate direction and control.

Guidance material to assist LPCs in the exercise of those duties will be developed by Building and Energy in consultation with the PLB and industry stakeholders.

2.16 Decision Twenty – Increasing the statutory penalty

The CRIS noted that the maximum penalty of $5,000 for offences against the plumbing legislation had not changed since the commencement of the Plumbing Act in mid-2000 and is out of step with other comparable legislation such as the *Gas Standards Act 1972*, where maximum penalty is ten times higher.

It was therefore proposed in the CRIS to increase the maximum penalty amount under the Plumbing Act to $50,000. This would also have the effect of increasing 'on-the-spot' infringement notice fines by the same factor. For example, the on-the-spot fine for carrying out unlicensed plumbing work would increase from $1,000 to $5,000.

Although the CRIS did not ask a specific question in relation to this proposal, a number of stakeholders nevertheless took the time to make comment.

In general, support for the increase was mixed, with many saying that they supported the increase if it was to be applied to people who had carried out plumbing work illegally (i.e. without a plumbing licence), but not if it was to be applied to plumbers.

This was echoed in the MPGA executive submission, which said the penalty should,

> *only apply to work that is illegal plumbing work by a non-plumber, not for 'being behind in paperwork' by a licensed plumber*.

Conversely, other stakeholders agreed that the current maximum of $5,000 was insufficient and that increasing the figure to $50,000 would reduce the incentive to carry out illegal plumbing work.

Decision Twenty

As the current maximum penalty of $5,000 for an offence against the Plumbing Act or Regulations provides little deterrent, particularly to those carrying out unlicensed work, it is to be increased to $50,000, commensurate with the *Gas Standards Act 1972*.

Impact analysis

This decision is not expected to have any adverse or financial impacts.

2.17 Decision Twenty-one – Limitation period for prosecutions

Currently, the Plumbing Act does not prescribe the timeframe within which prosecution action for an offence must be commenced. As a result, the timeframe automatically defaults to that contained in the *Criminal Procedure Act 2004*. This means that a prosecution for an offence against the plumbing legislation must be commenced within 12 months after the date on which the offence was allegedly committed, unless the respondent agrees to it being commenced at a later time.

Given the time required to investigate a complaint and determine whether prosecution or the issuing of an infringement penalty is warranted, a 12-month timeframe is often inadequate. It is also inconsistent with the two-year timeframe prescribed in both the *Gas Standards Act 1972* and the *Electricity Act 1945.*

The CRIS therefore proposed amending the Plumbing Act to enable prosecution action to be commenced within two years after the date on which the allegation of an offence is made. Stakeholders were invited to comment on this proposal should they wish.

The responses from stakeholders were mixed, with some commenting that as some problems (particularly those relating to design or installation) often don't arise until six or more months after the work is completed, a two-year timeframe was more reasonable. Others felt that the current 12-month timeframe was sufficient and that it was unreasonable to, *put people's lives on hold for more than 12 months*.

The MPGA executive submission also supported retaining the current status quo and commented that the CRIS as a whole contained a *misplaced emphasis on punishing licensed plumbers* and not enough focus on *what really matters, which is the pursuit of DIY plumbers and non-plumbers who charge for plumbing work. There are very few prosecutions for such illegal activities although they are rampant in the community*.

Building and Energy takes the view that extending the timeframe for taking a prosecution, coupled with the proposed increase in the size of any penalty should an offence be proven, should go some way towards to addressing the industry's concerns regarding the incidence of unlicensed plumbing work.

It could also be argued that as licensed plumbers have a very important role to play in keeping consumers and the wider community safe from the ill effects of poor plumbing and sanitation, it is right and proper that they be held to high standards and made accountable should they fall short of what the legislation requires and the community expects. Moreover, as the vast majority of plumbers act within the law, they will not be affected by any tightening of the enforcement provisions discussed in this DRIS. In contrast, where people carry out illegal plumbing work, or where plumbers do the wrong thing, these more punitive sanctions will better reflect the seriousness of those offences.

Decision Twenty-one

The Plumbing Act is to be amended to prescribe a two-year limitation period for taking prosecution action or issuing infringement notices for offences.

Impact analysis

This decision is not expected to have any adverse or financial impacts.

2.18 Decision Twenty-two – Compliance notification for "minor plumbing work'

Currently, LPCs must notify the PLB on a monthly basis of any 'minor plumbing work' (as defined in regulation 3 of the Plumbing Regulations) they have carried out. Notification must be made on a form known as a multi-entry certificate (MEC) which LPCs must purchase from the PLB.

As part of the move to an online system for all notifications required under the plumbing legislation, it was proposed that the requirement to submit MECs be replaced by a requirement to simply keep a record of such work and make the record available for inspection by a plumbing inspector as and when requested. The CRIS reiterated that proposal and advised that it was intended to amend the Plumbing Regulations accordingly.

While not specifically asked to comment on this issue, those stakeholders who did provide feedback were overwhelmingly supportive of the removal of the notification process. The only proviso was that the requirement to keep a record of such work must still be retained.

Decision Twenty-two

The Plumbing Regulations are to be amended to remove the notification requirement for minor plumbing work, and replace it with the less onerous requirement that LPCs must simply keep a record of such work and make it available for inspection on request.

Impact analysis

This decision is not expected to have any adverse impacts and will reduce red tape and administrative costs for plumbers.

2.19 Decision Twenty-three - Scope of “minor plumbing work” and “major plumbing work”

Due to an anomaly, regulation 3(b) of the Plumbing Regulations lists “maintenance or repair of an existing water heater” as ‘minor plumbing work’ even though regulated water supply plumbing work as defined in regulation 4(1)(a) does not include internal work to appliances such as water heaters.

Consultation

Question 35 of the CRIS asked for feedback on the proposal to remove ‘the maintenance or repair of an existing water heater’ from the list of work described as minor plumbing work in regulation 3(b), so as to align the work descriptions with the actual definition of plumbing work in regulation 4(1)a.

There were 170 responses to this question, including the MPGA executive submission and the MPGA combined submission. Of those, 126 did not agree with removing the description of work from the list of *minor plumbing work* in regulation 3(a), and 44 did agree with removal of the description of work.

The MPGA executive submission said they disagreed with the proposal on the grounds that, *this is plumbing work and should be done by a qualified person.* This was echoed in the MPGA members’ combined submission, which said such work should be undertaken by a licensed plumber.

Analysis

The majority of the responses were against the removal of regulation 3(b). However, closer analysis revealed that there was some confusion around the proposal for the following reasons:

- Many respondents mistakenly thought that servicing and maintenance work within a water heater is regulated plumbing work, which is not the case.
- Some respondents thought that removing the definition from the list of minor plumbing work would mean that the maintenance, repair or replacement work carried out on pipework and associated relief valves, expansion valves and tempering valves which are connected to and from a water heater would no longer be regulated plumbing work. This is also not the case as this work is captured in Regulation 3(a), ‘the maintenance, repair or replacement of existing water supply plumbing’.

Decision and impacts

Based on the evidence provided, and the fact that the wording in regulation 3(b) of the Plumbing Regulations does not align with the definition of regulated plumbing work in regulation 4(1)(a), it is considered appropriate to repeal regulation 3(b).

This decision is not expected to have any adverse or financial impacts.

Decision Twenty-three

The Plumbing Regulations are to be amended to remove work involving the maintenance or repair of an existing water heater from the definition of ‘minor plumbing work’ in regulation 3 of the Plumbing Regulations.

The definition of ‘minor plumbing work’ is to be further amended to clarify that:

- the installation or replacement of a testable backflow prevention device is ‘**major** plumbing work’;
- the installation of a non-testable backflow prevention device is ‘**major** plumbing work’; and
- the replacement of a non-testable backflow prevention device is ‘**minor** plumbing work’.

3. Implementation plan

Implementation of the decisions set out in this DRIS will occur as set out in the following table. As there is considerable detail to be worked through in some cases, Building and Energy intends to establish an implementation working group comprising key stakeholders to assist with the development and implementation of the required legislative changes.

At this stage, it is not possible to estimate an implementation timeframe for all of the decisions in this DRIS.

Table 4: Implementation summary

Decision number	Subject matter	Implementation method	Estimated implementation timeframe
One	New funding model	Depending on the model adopted, may require a new Act.	TBC
Two	Reforms to the organisational structure	Amendments to the Plumbing Act	TBC
Three	Amendments to the definition of “plumbing work” in the Plumbing Act	Amendments to the Plumbing Act	TBC
Four	Amendments to the definition of “water supply plumbing work” in the Plumbing Regulations	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21
Five	Amendments to the definition of “sanitary plumbing work” in the Plumbing Regulations	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21
Six	Amendments to the definition of “drainage plumbing work” in the Plumbing Regulations	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21
Seven	Amendments to clarify the application of the Plumbing Regulations to garden reticulation work	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21
Eight	Amendments to the Plumbing Act to place maintenance duties on owners and persons with control of high risk facilities.	Amendments to the Plumbing Act	TBC
Nine	Adoption of Parts B3, B5 and B6 of the Plumbing Code of Australia 2019	Amendments to the Plumbing Regulations	Commencement of Part B5 on 1 May 2019; Commencement of Parts B3 and B6 in financial year 2020/21
Ten	Deregulation of minor plumbing tasks by private homeowners	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21

Decision number	Subject matter	Implementation method	Estimated implementation timeframe
Eleven	Modular plumbing	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21
Twelve	Placing duties on plumbing designers and verifiers	Amendments to the Plumbing Act	TBC
Thirteen	Corporate licensing	No change	N/A
Fourteen	Business training for LPCs	No change	N/A
Fifteen	Insurance for LPCs	No change	N/A
Sixteen	Expanding the scope of work covered by an RPP	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21
Seventeen	Amendment to the Plumbing Regulations to allow newly qualified apprentices to work under the direction and control of an LPC once their training contract has been completed.	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21
Eighteen	Amendment to the Plumbing Regulations to make it an offence for a non-plumber to hold themselves out to be a plumber by advertising to carry out regulated plumbing work.	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21
Nineteen	Amendment to the Plumbing Regulations to clarify the LPC's duty to exercise direction, control and supervision.	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21
Twenty	Increasing the maximum penalty for offences	Amendments to the Plumbing Act	TBC
Twenty-one	Extending the limitation period for prosecutions	Amendments to the Plumbing Act	TBC
Twenty-two	Amendment to the Plumbing Regulations to remove the requirement for plumbers to submit MECs.	Amendments to the Plumbing Regulations	Commencement on 1 January 2020
Twenty-three	Amendment to the Plumbing Regulations to clarify the definitions of 'minor plumbing work" and "major plumbing work".	Amendments to the Plumbing Regulations	Commencement in financial year 2020/21

4. Evaluation

As detailed in the Implementation Plan above, these reforms will result in amendments to both the Plumbing Act and the Plumbing Regulations. WA's regulatory impact assessment process therefore requires that a post-implementation evaluation be undertaken to review the performance of the reforms set out in this DRIS.

Evaluation plan for the amendments to the Plumbing Act

Section 62 of the Plumbing Act requires the responsible minister to carry out a review of the operations of the Act as soon as practicable after every 5th anniversary of the commencement of the Act. This statutory review provision will ensure that the following Decisions in this DRIS are formally evaluated by the responsible minister as part of his or her obligations to Parliament under section 62:

Decision One	The new model for funding plumbing regulation
Decision Two	The revised role and functions of the PLB
Decision Three	The scope of plumbing work covered by the Act
Decision Eight	The duties of owners and persons with control of high-risk facilities
Decision Twelve	The duties of designers and design verifiers
Decision Twenty	The maximum penalty for offences
Decision Twenty-one	The limitation period for prosecutions

While the approach to undertaking the review required by section 62 of the Plumbing Act is at the discretion of the Minister responsible for the administration of that Act, it could be expected to have regard for the following elements:

- the attainment of the objectives of the Plumbing Act;
- the administration of the Plumbing Act;
- the effectiveness of the new funding model in achieving its objectives;
- the effectiveness of the streamlined PLB and any of its advisory committees; and
- the need for the continuation of the PLB.

Evaluation plan for the amendments to the Plumbing Regulations

For the reforms that are to be implemented via amendments to the Plumbing Regulations, it is expected that for completeness, and in order to achieve the greatest efficiency in the use of staff resources, the evaluation of those reforms will be undertaken in tandem with the next statutory review of the Plumbing Act.

While again subject to the discretion of the responsible Minister, the main aim of the implementation review of the regulatory reforms will be to assess how effective the reforms have been in achieving their intended objectives, and to identify any issues that have arisen following their commencement.

On that basis, it is expected that an evaluation strategy for the regulatory changes set out in this DRIS will be built around the following key questions:

- Have the reforms achieved the outcomes sought?
- Has compliance with the requirements of the Plumbing Regulations improved following the implementation of the reforms?
- Are the new definitions for water supply plumbing work, sanitary plumbing work and drainage plumbing work well understood and being adhered to?
- Is the decision to bring non-metered drinking water and non-drinking water within the scope of water supply plumbing work operating as intended? What is the level of compliance with those new requirements?
- Is the clarification around garden reticulation work well understood, and is it working as intended?
- What has been the impact of not bringing the installation or on-site construction of on-site wastewater treatment systems within the scope of drainage plumbing work?
- What has been the impact of allowing private homeowners to carry out a limited range of simple plumbing repairs in their own homes? Specifically, have there been any safety and health issues as a result of this change?
- Has the level of compliance with the plumbing standards improved as a result of the additional duties around design and design verification?
- What has been the impact of introducing requirements for the maintenance of plumbing safety devices?
- What has been the impact of introducing regulation around advertising by non-plumbers? Has it led to a decrease in the amount of unlicensed plumbing work?
- Has the strengthening of the requirements for LPCs to exercise supervision, direction and control over tradespersons and provisional licence holders led to a discernible improvement in the level and adequacy of those requirements by LPCs?
- What have been the impacts of the reforms on the regulatory burden for business?
- What have been the impacts on government in terms of the provision of regulatory services? Have efficiencies been achieved? Has the service been enhanced?

Data collection

In order to adequately inform the statutory review of the Plumbing Act and the evaluation of the regulatory reforms, Building and Energy intends to put in place a data collection and analysis process. A benchmark from which to measure the impact of the reforms will also be set.

APPENDIX A

FINAL REPORT SEPTEMBER 2017

Economic analysis of proposed reforms to plumbing regulation in Western Australia

Report prepared for the Department of Mines, Industry Regulation and Safety

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Executive summary and recommendations

This report presents the findings from economic analysis by Marsden Jacob Associates (Marsden Jacob) on a number of proposed reforms to plumbing regulations in Western Australia.

The analysis is intended to support a Consultation Regulation Impact Statement (RIS) being prepared by the Building Commission, a division of the Department of Mines, Industry Regulation and Safety. The proposed reform amendments envision changes to the *Plumbers Licensing Act 1995* (the Plumbing Act) and the Plumbers Licensing and Plumbing Standards Regulations 2000 (the Plumbing Regulations).

Background

Plumbers are an essential part of the wider building industry. Importantly, because plumbers deal with both water and wastewater, they play key roles in the conservation of the resource and in ensuring public health. To maintain minimum levels of quality and safety, plumbers must be licensed through the Plumbers Licensing Board to work in Western Australia.

Scope and reform options

A total of eight reforms were considered in this analysis. The reforms fit into four themes, and the scope for economic analysis differs across the themes. For ease of reference, we have labelled the reforms A through to H.

The reforms and options considered for assessment are summarised in Table 1. We provide a fuller description of each reform in the body of this report.

Table 1: Summary of reforms and options for assessment

Change	Base case and reform options
Changes relating to governance and funding of plumbing legislation	
A Amend the regulatory funding mechanism	It is proposed to amend the cost-recovery mechanism funding the regulator's activities in compliance. A 'Do nothing' base case option is not considered a realistic option, as the current level of fee collection is considered insufficient. For this reason, the two options for consideration were: ▪ **Option 1:** Make minor changes to the current system. Revise Regulation 45 (fixture fees) to ensure that it captures a broader range of plumbing work. ▪ **Option 2:** A plumbing safety levy collected from water service providers (akin to the Energy Safety levy).
B Restructure administrator and regulator roles	The options for assessment were: ▪ **Option 1:** Maintain the status quo. ▪ **Option 2:** Adopt a more streamlined role for the Plumbers Licensing Board. ▪ **Option 3:** Disband the Plumbers Licensing Board completely.

Change	Base case and reform options
	▪ **Option 4:** Disband the Plumbers Licensing Board and move day-to-day plumbing licensing and compliance and enforcement activities to a Technical Regulator that covers the plumbing, gas and electrical industries[21]. ▪ **Option 5:** Create a new Plumbing Commissioner position and a plumbing directorate within the Building Commission. ▪ **Option 6:** Create a Plumbing Technical Regulator who will would be supported by an Office of the Plumbing Technical Regulator and a Plumbing Technical Registration Board.
Changes relating to the scope of plumbing legislation	
C Broaden the scope of regulated plumbing legislation to cover: (i) Non-drinking-water services (Part B3 of the Plumbing Code of Australia) (ii) All sources used for drinking water (not just those connected to a metered supply.)	There are two key areas of exclusion which, in the absence of reforms to coverage, pose a potential risk to individuals and members of the public. They are: 1. C.1. Non-drinking-water services (as outlined in Part B3 of the Plumbing Code of Australia) 2. C.2. Drinking water, where that water does not pass through a meter. The options assessed were: ▪ **Base case:** No change. ▪ **Option 1:** Require work to be undertaken by a licensed plumber.
D Exempt simple plumbing work on own home	The options assessed were: ▪ **Base case:** No change (with adequate enforcement). ▪ **Option 1:** Exempt specified minor work undertaken by an owner-occupier of a dwelling in that dwelling, including: - repairing or replacing a showerhead - replacing a washer in a tap - replacing an inlet or outlet washer in a toilet cistern - replacing a domestic water filter cartridge - clearing a blocked waste pipe by the use of a plunger, flexible hand rod or handheld water hose only (i.e. by non-mechanical and non-electrical means).
A requirement for owners of specified building to test and maintain plumbing safety devices	
E Impose a duty of care on owners of complex sites. Two examples are: (i) sites with backflow regulators (ii) thermostatic mixing valves at prescribed types of properties.	The reform option was assessed in relation to the two examples. The options assessed in relation to backflow prevention devices were: ▪ **Base case:** No change. ▪ **Option 1:** Introduce a head of power to impose a duty of care on property owners where a testable backflow prevention device[22] is installed within a property boundary. The options assessed in relation to thermostatic mixing valves were:

[21] Under this option, it is envisaged that the role of the energy safety regulator (currently EnergySafety that sits within the Department of Mines, Industry Regulation and Safety) could be expanded to encompass plumbing.

[22] As defined in the AS3500.1.2015 and referred to in the Plumbing Code of Australia.

Change	Base case and reform options
	▪ **Base case:** No change. ▪ **Option 1**: Introduce a head of power to impose a duty of care on property owners of prescribed sites that have thermostatic mixing valves installed. Prescribed sites would include aged-care facilities, health-care facilities, childcare centres, schools, disability service residential facilities.
Changes relating to the licensing of and requirements on plumbers	
F Introduce a business licence	▪ **Base case:** No change. ▪ **Option 1:** Introduce a business licence for individuals, partnerships and companies that intend to trade as plumbers, and require plumbing companies holding that licence to have a nominated licensed plumbing contractor as the plumbing practitioner to oversee plumbing work.
G Remove requirement for plumbing contractors to undertake business training	The regulations covering qualifications for a plumbing contractor licence refer to an equivalent Western Australian qualification 'as determined by the Board' (meaning the Plumbers Licensing Board). Changes to exclude or include business units in training courses will require a change in legislation to remove that reference. The two options assessed were: ▪ **Base case:** No change. ▪ **Option 1:** Align the link to the board's discretion so that the objectives of the Act are considered in appropriate training. The effect of this would be that business units would no longer be mandatory.
H Introduce a requirement for contractors and businesses to hold specific insurances	The options assessed were: ▪ **Base case:** No change. ▪ **Option 1:** Introduce a requirement for insurance(s) to be held as a condition of the licence.

Approach to analysis and forms of analysis

Marsden Jacob used a three-step approach to this analysis:

- Step 1: Research and refinement of reform options.
- Step 2: Analysis, modelling and preliminary assessment against selected criteria (using cost–benefit analysis or a principles-based approach).
- Step 3: Validation of data inputs and stakeholder impacts via informal industry discussions.

Three main forms of analysis were adopted, depending on the nature of the change being considered:

- A **principles-based approach** was adopted for changes A and B. The approach in each case was tailored to the change, assessing each of the reform options against best practice guidance and principles.
- An assessment based on **cost–benefit analysis** (CBA) was used for changes D, F, G and H. A CBA assessed the economic costs and benefits of each of the options incrementally, compared to the business-as-usual or base case.

- An assessment based on **threshold analysis** was used for changes C and E. This approach is based on a CBA, but for each of these changes only the change in costs was estimated. The assessment was made by identifying the quantum of health benefits that would justify the change in costs. For these assessments, we used value of statistical life[23] data to estimate the number of deaths or instances of ill health to be avoided.

Both the CBA and the threshold analysis assessments are underpinned by quantitative modelling. Modelling was conducted over a 20-year period from 2017 to 2038, and future impacts were discounted at a standard discount rate of 7%.

Summary of assessment and recommendations

Change A (Amend the regulatory funding mechanism)

Change A involves two amendments to the regulatory funding mechanism. Option 1 involves only minor change to the current system and retains the notice of intention and certificate-based method of collecting compliance-related fees. In contrast, Option 2 considers the introduction of a plumbing safety levy that would be collected through water service providers. In both cases, licence-related fee structures (payments on application and renewal) remain unchanged.

Marsden Jacob's assessment considered the performance of each of the options against criteria developed from existing government guidelines on costing and pricing of government services[24] and principals for cost recovery[25].

The criteria against which each option was assessed and our findings are summarised in Table 2.

Based on our assessment, Option 2 appears to be preferable. Subject to consultation, further work should be undertaken to implement this reform.

Table 2: Assessment of reform options for Change A against defined criteria

Key: 🔴 = Does not meet criteria 🟡 = Partially fulfils criteria 🟢 = Fulfils criteria	Option 1: Minor changes	Option 2: Plumbing safety levy
Legality		
Able to be charged (i.e. not a tax)	🟢	🟢
Clarity of purpose		
Fees should be linked to work (i.e. the beneficiary pays)	🟡	🟢
Revenue adequacy	🟢	🟢

[23] The value of a statistical life is an estimate of the financial value society places on reducing the average number of deaths by one. A related concept is the value of a statistical life year, which estimates the value society places on reducing the risk of premature death, expressed in terms of saving a statistical life year. See Office of Best Practice Regulation, *Best practice regulation guidance note: value of statistical life,* December 2014, p. 1, online.

[24] Department of Treasury, *Costing and pricing government services: guidelines for use by agencies in Western Australian public sector*, Government of Western Australia, June 2015, online.

[25] Department of Finance, *Australian Government cost recovery guidelines*, 3rd edition, resource management guide no. 304, Australian Government, July 2014, online.

Key: 🔴 = Does not meet criteria 🟡 = Partially fulfils criteria 🟢 = Fulfils criteria	Option 1: Minor changes	Option 2: Plumbing safety levy
Consistent income	🟡	🟢
Transparency		
Costs should be explicit and recognisable	🟢	🟢
Fee structure should not be excessively complicated	🟡	🟢
Efficiency		
Creating right incentives	🔴	🟡
Consistent fees for companies	🟢	🟢
Cost of collection	🟡	🟢
Minimise cross-subsidisation	🟢	🟡
Timeliness		
Need to review regularly	🟢	🟢
Able to be implemented in a timely manner	🟢	🟡

Source: Marsden Jacob Associates, 2017.

Change B (Restructure of administrator and regulator roles)

Change B involves restructuring the administrator and regulator roles. Six options were considered. The principles-based approach to assessment considered each reform option against a range of governance criteria and used a traffic light system to highlight areas of relative strength (🟢), potential improvement (🟡) and weakness (🔴) (Table 14).

Table 3: Assessment of reform options for Change B against best practice governance criteria

Key: 🔴 = Relative weakness of option 🟡 = Potential for improvement 🟢 = Relative strength of option						
Model	**Options**					
	1	**2**	**3**	**4**	**5**	**6**
Clarity of role and purpose	🟡	🟢	🟢	🟡	🔴	🟡
Authority and decision-making	🟡	🟢	🟢	🟢	🟢	🟢
Accountability	🟡	🟢	🟡	🟡	🟢	🟢
Efficiency	🟡	🟢	🟢	🟢	🔴	🔴
Transparency	🟡	🟡	🔴	🟢	🟢	🟢
Durability	🟡	🟢	🟢	🟢	🟡	🟡

Based on the analysis, Option 2 (a streamlined role for the Plumbers Licensing Board) is the most favourable, as it meets the highest number of criteria. Subject to feedback through consultation, it is recommended that Option 2 be further developed and implemented.

Change C (Broaden the scope of regulated plumbing legislation)

Change C involves broadening the scope of regulated plumbing legislation to cover non-drinking-water services and unmetered drinking-water services.

Cost modelling of changes to include non-drinking-water services focused on the impacts from coverage of recycled and greywater systems and rainwater tanks. We estimate that the change would result in net additional costs of $45.89 million ($2017, present value). Translated into statistical lives, the reform would need to save approximately 0.52 lives (or avoid equivalent illness) per annum to justify this cost. Although the number of deaths reported from incidents relating to non-drinking water services is currently low and may not justify the reform, it is expected that increasing popularity of third pipe scheme options will mean the number of services will increase and as a consequent the number of incidents will also rise. In addition, considerations such as the need for regulatory clarity to increase around non-drinking water services and a desire for the definition to align with that used in other states, mean that this change is recommended.

Cost modelling of the impact of the change to include unmetered drinking-water services focused on the impacts from coverage of two types of remote sites: mining towns and remote infrastructure sites; and remote recreational facilities. We estimate that the change would result in net benefit of $1.63 million ($2017, present value). A threshold analysis on the number of statistical lives that need to be saved to justify the reform has not been conducted on the basis that the reform already delivers benefits. Additionally, we see no reason for unmetered and metered drinking water to be differently from regulatory perspective where human health risks are concerned. Therefore, we recommend the scope of plumbing be broadened to include unmetered drinking water services.

Change D (Exempt simple plumbing work on own home)

Change D involves a reform to exempt specified minor plumbing work undertaken by an owner-occupier of a dwelling.

For this analysis, the base case reflected the current legislation, but with additional enforcement because compliance with the current regulations is potentially low. Modelling quantified the impacts from changes involving tap washers and showerheads, although the definition of ‘minor plumbing work’ may extend beyond this to include replacing an inlet or outlet washer in a toilet cistern, replacing a domestic water filter cartridge and clearing a blocked waste pipe with the use of a plunger, flexible hand rod or handheld water hose.

Using the modified base case assumptions, modelling results indicated that there will be significant net benefits of around $266.79 million ($2017, present value) from the exemption for minor plumbing work. Anecdotal feedback from industry and our own experience suggest that real compliance rates in the absence of changes to the current enforcement regime are low. Therefore, the impacts from the change are likely to be significantly less than those modelled, but still positive.

On this basis, and noting that the definition of ‘minor plumbing work’ will need to be tightly scoped to ensure that additional risks to human health from inadequate plumbing are minimised, we recommend that the reform to exempt minor plumbing work undertaken by an owner-occupier proceed.

Change E (Impose a duty of care on owners of complex sites)

Change E involves reforms to impose a duty of care (via a head power under the Act) on owners of prescribed properties to test and maintain specified devices. This change is slightly different from the other changes considered in this report in that it imposes requirements on stakeholders who are not plumbers (or plumbing businesses).

Two types of devices were considered. In each case, the prescribed properties are linked to the properties where the devices are required according to technical standards.

For **backflow prevention devices**, prescribed properties would extend to buildings that may be used by third parties (other than the owner), such as employees or members of the public. Similar to Change C, a definition that draws from the *Building Act 2011* is proposed to be used for coverage. The relevant drafting of the Building Act sections is as follows:

> *… apply to a building or an incidental structure…—*
>
> *(a) that is, or is proposed to be, a residential facility or a recreational facility; or*
>
> *(b) that members of the public normally use; or*
>
> *(c) to which members of the public are permitted access.*

For **thermostatic mixing valves**, prescribed properties would include aged-care facilities, health-care facilities, childcare centres, schools and disability service residential facilities. This scope aligns with Section 1.9.2 of AS/NZS 3500.4, which specifies standards for sanitary fixtures' delivery temperatures.

Threshold modelling was conducted in a similar manner to modelling for Change C: the costs were quantified to set a threshold for benefits needed to justify the reform.

For backflow devices, we estimate that the additional costs from imposing a duty of care will be around $35.45 million ($2017, present value). The benefits from adequate testing of backflow devices are a reduction in diseases arising from the contamination of potable water and may extend to a reduction in disease and disability arising from metallic or other chemical contamination from plumbing infrastructure (if the proper selection of devices is also considered). Based on the cost impacts, the benefit threshold to justify the change equates to saving around 0.40 lives per annum (or avoiding equivalent illness). It is unclear whether the reform would be effective in achieving this level of benefit and so we do not recommend this reform. However, feedback from stakeholders may help to determine whether this reform should be implemented.

For thermostatic mixing valves, we estimate the additional costs to be around $4.41 million ($2017, present value), which translates to a benefit threshold of at least one life over the 20-year period of the analysis. The main benefit from appropriate maintenance of thermostatic mixing valves is the avoided health risk of scalding from poorly controlled heated water. As for backflow devices, the benefits may also extend to avoided disease and disability arising from metallic or other chemical contamination from plumbing infrastructure (if the proper selection of devices is also considered). We consider it likely that the reform will produce benefits at the threshold level or beyond for thermostatic mixing valves and therefore recommend that the reform proceed in relation to those devices.

Change F (Introduce a business licence)

Change F involves the introduction of a business licence that would be held by individuals, partnerships and companies that intend to trade as plumbers. The licence is distinct from existing licences, as the current range of licences and permits can be held only by natural persons.[26] The business licence is not intended to replace the existing contractor licence, as any business applying for a licence will still need to nominate a licensed plumbing contractor as the plumbing practitioner to oversee plumbing work.

We modelled the costs of the introduction of the licence. The net additional costs are estimated to be around $2.46 million ($2017, present value) or around $289 per business per annum.

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[26] Regulation 14 of the Plumbing Regulations.

Benefits associated with the change are currently unclear, as the details of how liabilities and responsibilities would change between the licensed plumbing contractor currently responsible for overseeing plumbing work and the business entity holding a business licence are not clear.

On this basis, Marsden Jacob does not recommend a reform to introduce a business licence.

We note that the current model adopted for the plumbing industry is different from that provided for the building and electrical industries in Western Australia and envisioned as part of the National Occupational Licensing Scheme. However, as noted in Section 3.7.2, it aligns the arrangements for gasfitters in the state.

Change G (Remove requirement for plumbing contractors to undertake business training)

Change G seeks to align the Plumbers Licensing Board's discretion over training that contributes towards the certification of a plumbing licence and constrains that discretion to align with the objective of the Plumbing Act (if one is introduced, as proposed by ACIL Allen in 2013). The objective of the Act proposed by ACIL Allen is:[27]

> *To protect the long term interests and health of Western Australians with respect to the safety of the water supply and wastewater removal system by ensuring that plumbing work is performed in accordance with technical requirements appropriate for available technologies by sufficiently skilled persons.*

The effect of the change would be that business units in the licensed plumbing contractor licence certification course would no longer be mandatory course requirements.

Modelling of the impacts of this reform considered the change in course fees and course costs as a transfer between registered training organisations in Western Australia and plumbing tradespeople who would have otherwise undertaken the course. The quantified net benefits are limited to the recouping of wages that would otherwise have been forgone. Those benefits amount to a net benefit from reform of $3.96 million ($2017, present value).

While there are likely to be some benefits from undertaking the training for plumbing businesses (and their customers) as well as course participants where the skills directly relate to their jobs, we are unclear about the extent of those benefits. We recommend that the reforms be adopted to align the training requirements with the new objective of the Act (if that is introduced). In adopting the reform, the Plumbers Licensing Board should consider retaining the course as a non-mandatory optional contributor to certification. In this way, plumbing tradespeople may still elect to take the course if they foresee benefits from the training.

Change H (Introduce a requirement for contractors and businesses to hold specific insurances)

Change H involves the introduction of a requirement for public liability and professional indemnity insurance to be held as a condition of contactor's or business licences.

Our analysis showed that a requirement to hold public liability insurance would have only a limited impact, as this form of insurance is held by almost all plumbers. The net cost of making public liability insurance compulsory is estimated to be $1.25 million (net present value) over the 20-year period used in the analysis.

In contrast, a requirement to hold professional indemnity insurance would impose significant additional costs on the industry. The net cost of making it compulsory is estimated to be $3.24 million (net present

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[27] ACIL Allen Consulting, *Review of plumbing regulations in WA*, report to the Minister for Commerce, Western Australia, 8 November 2013, pp. 30 and 50, online.

value) over the 20-year period. The exact scale of the costs will depend on the detail of the requirements, such as the level of insurance, excess and limitations.

We note that the requirement to hold insurances would also bring Western Australia regulations into line with New South Wales and Victorian provisions. If the requirement to hold insurances is pursued, we recommend that the Building Commission investigate an approach that uses a scaling mechanism or thresholds above which insurances must be held to ensure that smaller business are not unduly burdened by insurance premiums for higher levels of cover.

Overall, making insurance compulsory may be perceived to be adding red tape, as the requirement adds to the cost of running a business but brings only limited identified benefits. Subject to additional information provided through consultation, we recommend that this reform not be implemented.

1. Introduction

Marsden Jacob Associates (Marsden Jacob) was commissioned by the Building Commission within the Department of Mines, Industry Regulation and Safety to prepare a quantitative economic analysis of proposed reforms to plumbing regulation in Western Australia.

The analysis is intended to support a Consultation Regulation Impact Statement (RIS) on proposed amendments to the *Plumbers Licensing Act 1995* (the Plumbing Act) and the Plumbers Licensing and Plumbing Standards Regulations 2000 (the Plumbing Regulations).

1.1 Background

Plumbers are an essential part of the wider building industry. Importantly, because plumbers deal with both water and wastewater, they play key roles in the conservation of the resource and in ensuring public health. To maintain minimum levels of quality and safety, plumbers must be licensed through the Plumbers Licensing Board to work in Western Australia.

In 2013, the Western Australian Government commissioned a review of plumbing regulations to help it decide on the adoption of national reforms that were underway at that time and to consider ways in which the plumbing laws could be streamlined and modernised.

That review, by ACIL Allen Consulting, included the release of a discussion paper in July 2013 (Figure 1). Following public consultation in which 42 submissions were received, a final report was delivered to the Minister for Commerce on 8 November 2013 and made publicly available on 13 February 2014.

The final report included 51 recommendations, all of which were accepted by the government, and also recommended that any future alterations to the licensing regime should only be made following a cost–benefit analysis (CBA) showing a clear case for making the changes.[28]

Following the review, the first phase of reforms commenced on 1 January 2015; the second phase of reforms came into effect on 30 April 2016.[29] The first two phases covered reforms that were considered to be relatively straightforward and that could be implemented relatively quickly.

This economic analysis and the RIS it accompanies forms a third (and final) phase of the reforms. It was considered that these reforms require a RIS because some reforms may have a significant impact on the Western Australian economy and some others required further consideration and scoping. The analysis seeks to ensure that the proposed reforms will provide a net benefit to Western Australia.

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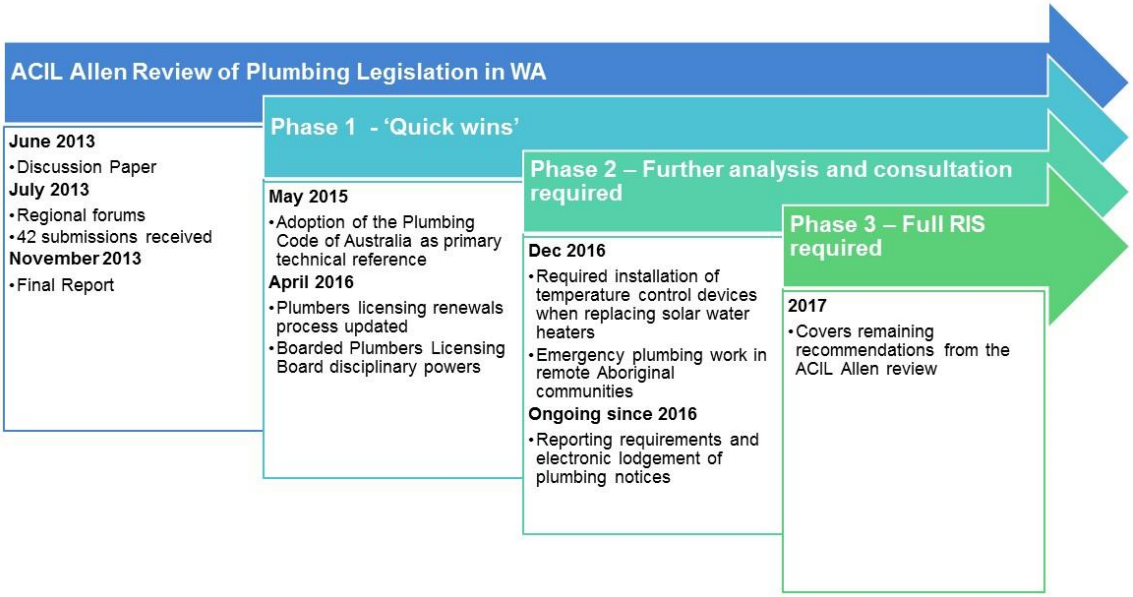
[28] ACIL Allen Consulting, *Review of Plumbing Regulations in WA*, page x.

[29] Information on the content of first- and second-phase reforms is available on the Department of Mines, Industry Regulation and Safety (previously the Department of Commerce) website. Refer to the 'Latest developments' section of the 'Plumbing review' page: https://www.commerce.wa.gov.au/building-commission/plumbing-review.

Figure 1: Timeline of reforms to the plumbing legislation in Western Australia



Source: Marsden Jacob.

1.2 Scope and reform options

A total of eight reforms were considered in this analysis. The reforms fit into four themes, and the scope for economic analysis differed across the themes. For ease of reference, we have labelled the reforms A through to H.

The scope of the changes, the options considered for assessment and the approach to analysis are summarised in Table 4.

The methods for assessment are described in detail in Section 2.2.

Table 4: Summary of reforms and approach to analysis

Change	Current situation	Base case and reform options	Method of assessment
Changes relating to governance and funding of plumbing legislation			
A. Amend the regulatory funding mechanism	The current fees are set out in Schedule 1 of the Plumbing Regulations. The fees fall into two categories: ▪ licence fees—charged on applications for plumbing licences ▪ compliance fees—charged for notices of intent, certificates of compliance and the installation of fixtures.	It is proposed to amend the cost-recovery mechanism funding the regulator's activities in compliance. A 'Do nothing' base case option was not considered a realistic option, as the current level of fee collection is considered insufficient. For this reason, the two options for consideration were: ▪ **Option 1:** Minor changes to the current compliance fees system. Regulation 45 (fixture fees) will be revised to ensure that it captures a broader range of plumbing work.	Principle-based approach to assessment

Change	Current situation	Base case and reform options	Method of assessment
		▪ **Option 2**: A plumbing safety levy collected from water service providers (akin to the Energy Safety levy).	
B. Restructure administrator and regulator roles	The current delineation of roles is as follows: ▪ Licensing policy is determined through legislation. The licensing authority sets criteria and standards, including for how to apply and assess applications. Advice is provided to the minister by the Building Commission. The Plumbers Licensing Board can only advise the minister if the board goes through the Building Commission. ▪ The licensing administrator role is performed by the Plumbers Licensing Board. The board receives applications and provides plumbing licences on the basis of the criteria set out by the legislation. ▪ The technical regulator is also the Plumbers Licensing Board. The Building Commission provides technical staff to support the board to ensure compliance. The technical standards are set by the minister on the advice of the Building Commission.	▪ **Option 1** maintains the status quo. ▪ **Option 2** adopts a more streamlined role for the Plumbers Licensing Board, which is responsible only for the licensing of plumbers. The role of the technical regulator (enforcing compliance with technical standards) is the responsibility of the Building Commissioner, and Building Commission staff currently performing enforcement roles continue to provide that support. ▪ **Option 3** disbands the Plumbers Licensing Board completely. This is similar to Option 2, but the current Building Services Board has its representation and role expanded to include plumbing. A plumbing representative will be added to the Building Services Board. ▪ **Option 4** disbands the Plumbers Licensing Board and moves day-to-day plumbing licensing and compliance and enforcement activities to Technical Regulator that covers the plumbing, gas and electrical industries.[30] ▪ **Option 5** creates a new Plumbing Commissioner position and a plumbing directorate within the Building Commission. The Plumbing Commissioner (although this is a separate position) could be the same person as the Building Commissioner. ▪ **Option 6** creates a Plumbing Technical Regulator who is supported by an Office of the Plumbing Technical Regulator and a Plumbing Technical Registration Board. Unlike in option 4, the group would be completely removed from the Building Commission.	Principles-based approach to assessment

[30] Under this option, it is envisaged that the role of the energy safety regulator (currently EnergySafety that sits within the Department of Mines, Industry Regulation and Safety) could be expanded to encompass plumbing.

Change	Current situation	Base case and reform options	Method of assessment
Changes relating to the scope of plumbing legislation			
C. Broaden the scope of regulated plumbing legislation to cover: (i) non-drinking-water services (Part B3 of the Plumbing Code of Australia) (ii) all sources used for drinking water (not just those connected to a metered supply.)	The scope for regulated plumbing work is defined in section 4 of the Plumbing Regulations. The scope currently covers three main areas: 1. Water supply plumbing work is limited to the supply of potable water *from a meter assembly* to the points of use within any property. 2. Sanitary plumbing work covers works carrying wastewater or other waste but does not include drainage plumbing work. 3. Drainage plumbing work is work on underground pipes and other fittings used or intended to be used for the carrying of wastewater to a sewer or wastewater or other waste to an apparatus for the treatment of sewage. Work that is plumbing related but that is not included in the above definition is, as a result of the drafting of section 9(1), not required to be performed by a plumber.[a]	There are two key areas of exclusion which, in the absence of reforms to coverage, represent a potential risk to individuals and members of the public. They are: 1. C.1. Non-drinking-water services (as outlined in Part B3 of the Plumbing Code of Australia) 2. C.2. Drinking water, where that water does not pass through a meter. The options assessed are: ▪ **Base case:** No change. ▪ **Option 1:** Require work to be performed by a licensed plumber.	Threshold assessment
D. Exempt simple plumbing work on own home	Regulation 9 in Part 3 (Licences and permits) of the Plumbing Regulations sets out when a licence or permit is required. This section specifies that all 'plumbing work' requires a licence or permit:[b] 'Plumbing work' is defined in section 59I of the Plumbing Act, and that definition is expanded upon in section 4 of the Plumbing Regulations. The current definition appears to extend to include a number of minor, low-risk and relatively non-technical plumbing maintenance tasks, such as changing showerheads and tap washers in residential properties, that homeowners may reasonably perform.	The options assessed are: ▪ **Base case:** No change (but with adequate enforcement). ▪ **Option 1:** Exempt specified minor work undertaken by an owner-occupier of a dwelling in that dwelling, including: - repairing or replacing a showerhead - replacing a washer in a tap - replacing an inlet or outlet washer in a toilet cistern - replacing a domestic water filter cartridge - clearing a blocked waste pipe by the use of a plunger, flexible hand rod or handheld water hose only (i.e. by non-mechanical and non-electrical means).	CBA assessment

Change	Current situation	Base case and reform options	Method of assessment
A requirement for owners of specified building to test and maintain plumbing safety devices			
E. Impose a duty of care on owners of complex sites. Two examples are: (i) sites with backflow regulators (ii) thermostatic mixing valves at prescribed types of properties	Elements of plumbing systems require maintenance and regular testing to ensure that they are working well. Provisions in water service provider legislation ensure that property owners maintain and regularly test devices, but there is a gap in current plumbing legislation coverage for plumbing within a property boundary. Both backflow prevention devices and thermostatic mixing valves play an important role in preventing water supply contamination and acting as safety mechanisms against the risk of scalding from hot water, respectively. Neither appears to be clearly or adequately covered under current regulations.	The reform option is assessed in relation to the two examples. The options assessed for backflow prevention devices are: ▪ **Base case:** No change. ▪ **Option 1:** Introduce a head of power to impose a duty of care on property owners where a testable backflow prevention device[31] is installed within a property boundary. The options assessed for thermostatic mixing valves are: ▪ **Base case:** No change. ▪ **Option 1**: Introduce a head of power to impose a duty of care on property owners of prescribed sites that have thermostatic mixing valves installed. Prescribed sites would include aged-care facilities, health-care facilities, childcare centres, schools, disability service residential facilities.	Threshold assessment
Changes relating to the licensing of and requirements on plumbers			
F. Introduce a business licence	Regulation 14 of the Plumbing Regulations states that only natural persons can hold a plumbing licence or permit. Under the current regime, it appears that only contractor's licence holders are captured as carrying on plumbing businesses. Hence, while other types of companies and corporate structures exist in the industry, they are omitted from the coverage of the legislation. A consequence of the current drafting appears to be that the legal liability for running a plumbing business therefore rests with the plumber in the business under whose contractor's licence works are being completed. If that licensed plumber leaves the business, the obligations and responsibilities	The options assessed are: ▪ **Base case:** No change. ▪ **Option 1:** Introduce a business licence for individuals, partnerships and companies that intend to trade as plumbers, and require plumbing companies that hold that licence to have a nominated licensed plumbing contractor as the plumbing practitioner to oversee plumbing work.	CBA assessment

[31] As defined in the AS3500.1.2015 and referred to in the Plumbing Code of Australia.

Change	Current situation	Base case and reform options	Method of assessment
	for plumbing works undertaken while they were in the business remain with the plumber—not the business entity.		
G. Remove requirement for plumbing contractors to undertake business training	Clause 2, Schedule 3 of the Plumbing Regulations sets out the requirements for holding a plumbing contractor's licence, and Regulation 2(b)(ii) gives the Plumbers Licensing Board discretion in determining 'equivalent Western Australian qualifications'. The board[c] requires nine units that made up the course for the Plumbing Contractor's Licence at the time of the course's expiry on 28 February 2016 to be completed regardless of the stream(s) of plumbing work or any units that supersede the listed mandatory units. Three business units are included in the current list of courses.	As the regulations refer to an equivalent 'as determined by the Board', changes to exclude or include business units will require a change in legislation (to remove this reference). The two options assessed are: ▪ **Base case:** Do nothing—thus maintaining the current situation. ▪ **Option 1:** Align the link on the board's discretion so that the objectives of the Act need to be considered in appropriate training, the effect of which would be that business units will no longer be mandatory.	CBA assessment
H. Introduce a requirement for contractors and businesses to hold public liability and professional indemnity insurances	Currently, no requirement for plumbing contractors in Western Australia to carry any public liability or indemnity insurance is specified in the Plumbing Regulations. The relevant regulation is Clause 2, Schedule 3, which sets out the requirements for a plumbing contractor's licence.	The options assessed are: ▪ **Base case:** No change. ▪ **Option 1:** Introduce a requirement for insurance(s) to be held as a condition of licensing.	CBA assessment

a Some work has been exempted in the regulations and may be carried out by non-plumbers. However, the exemptions are currently largely limited to work performed by water service providers (and therefore covered in alternative legislation), work performed by apprentices and work in remote Aboriginal communities.

b Clauses 9(2) and (3) provide exemptions for apprentices under supervision and for permitted work performed in remote Aboriginal communities. It appears that all other plumbing work is not permitted.

c Plumbers Licensing Board Policy—Requirements to obtain a plumbing contractor's licence, 29 May 2017, online.

2. Methodology

A three-step approach to analysis was used in developing and undertaking the analysis:

- Step 1: Research and refinement of reform options.
- Step 2: Analysis, modelling and preliminary assessment against selected criteria (using a CBA or principles-based approach).
- Step 3: Validation of data inputs and stakeholder impacts via informal industry discussions.

2.1 Research and refinement of reform options

The proposed reforms originated from analysis by ACIL Allen Consulting in its review of the Plumbing Regulations in 2013. Desktop research and several workshops with representatives from the department were used to clarify and solidify the issues that needed to be addressed and to refine the reform options for assessment.

The desktop research included a review of relevant and comparable provisions used for other industries in Western Australia (such as the electrical, gas and building industries) and comparable plumbing regulations in other Australian jurisdictions.

A meeting with the Plumbers Licensing Board was also held during the research phase of the project.

2.2 Approach to analysis

In assessing the reforms, we used three different economic analysis frameworks:

- A **principles-based approach** was adopted for changes A and B. Each reform option was assessed against best practice guidance and principles, and the option that appeared to align best with the guidance was identified.

  For Change A, we assessed each reform option against criteria adopted from Australian Government and state government guidance on cost recovery and principles for setting fees and charges. Categories of criteria used included legality, clarity of purpose, transparency, efficiency and timeliness.

  For Change B, we considered each reform option against a range of range of governance criteria, including clarity of role and purpose; authority and decision-making; accountability; efficiency; transparency; and durability.

- A **CBA**-based assessment was used for changes D, F, G and H. The purpose was to assess the economic costs and benefits of each of the options incrementally, compared to the business-as-usual or base case. Economic costs and benefits were assessed by aggregating the relevant subset of financial (distributional) impacts and externality impacts. Financial transfers between stakeholder groups were excluded from the analysis because they do not result in a net economic cost or benefit.

  The results of the CBA are mainly reported as a net present value, which is the present value of economic benefits delivered by the option less the present value of economic costs incurred. The net present value measures the expected benefit (or cost) to society of implementing the policy, expressed in monetary terms.

- Assessment based on **threshold analysis** was used for changes C and E. For each of those changes, the costs could be easily quantified; however, the scale of the benefits was not readily estimated. Threshold analysis included quantitative modelling of the likely cost impacts in the same manner as in the CBA approach. The assessment was made by demonstrating the quantum of health benefits that would justify the change in costs. For these assessments, we used value of statistical life[32] data to estimate the number of deaths or instances of ill health to be avoided.

More detail on the approach used for assessment is included in the relevant parts of Section 3.

The analysis in this report is necessarily based on a series of assumptions, which means that there is some uncertainty about the results. The assumptions outlined in Section 3 reflect information at the time the assessment was completed and have been verified (to a limited degree) through the informal stakeholder discussions outlined below.

2.3 Validation and refinement of data inputs via discussion with industry

Once a preliminary assessment had been completed for each of the changes, the input assumptions and results were tested through targeted stakeholder consultations.

We contacted around 30 stakeholders, mainly by phone. They included:

- plumbing industry representatives, peak bodies and unions
- representatives from the training sector
- representatives from associated consumer groups and associations
- the Western Australian Government
- water service providers.

We note that the views expressed by those stakeholders interviewed might not represent the views of the industry more broadly. Stakeholders were not asked to provide formal, written answers to questions, so we do not attribute their contributions to specific elements in this report.

[32] The value of a statistical life is an estimate of the financial value that society places on reducing the average number of deaths by one. A related concept is the value of a statistical life year, which estimates the value society places on reducing the risk of premature death, expressed in terms of saving a statistical life year. See Office of Best Practice Regulation, *Best practice regulation guidance note: value of statistical life,* Department of the Prime Minister and Cabinet, December 2014, p. 1, online.

3. Economic analysis

As outlined in Section 2.2, three different approaches were used to assess the changes:

- A principles-based approach was used for reforms A and B.
- CBA assessment was used for reforms D, F, G and H.
- An assessment based on threshold analysis was used for reforms C and E.

Section 3.1 outlines general assumptions used in some or all of the analyses. Subsequent sections present economic analysis for each proposed reform.

3.1 General assumptions

Key assumptions that informed the analysis were:

- the evaluation period, prices and discount rates
- labour and service cost rates
- growth
- the value of a statistical life
- avoided costs (benefits).

Evaluation period, prices and discount rates

Table 5 summarises the evaluation period, prices and discount rate assumptions used in the analysis. The key points are as follows:

- A 20-year analysis period was adopted.
- Discount rates typical of CBAs in Australia were used.
- All dollar values are presented in $2017 unless otherwise specified.

Table 5: Evaluation period, prices and discount rates

Variable	Assumption
Base year	2016–17 financial year (FY 2017)
Prices	$2017
Evaluation period	FY 2017 – FY 2036
Discount rate	7% (real) 3% and 10% (real) sensitivities

Labour and service cost rates

Labour and service cost rates were used as inputs to analyses of changes C through H. The types of rates used were as follows:

- Service costs for domestic plumbing work (referred to as the **domestic plumbing rate**) are the costs that a typical domestic (residential) customer might expect to face if they were to engage a plumber to do the work.

- Service costs for commercial plumbing work (referred to as the **commercial plumbing rate**) are the costs a customer might expect to face if they were to engage a plumber to do the work at a commercial location.
- Service costs for work undertaken by a professional who is not a plumber (referred to as the **non-plumbing professional rate**) are the costs a customer might expect to face to engage a professional who is not a plumber to do the work.
- Labour cost rates (as distinct from service cost rates) are used to reflect the opportunity cost of time for licensed plumbing contractors (referred to as the **LPC labour rate**) and for plumbers with tradesperson's licences (referred to as the **tradie labour rate**).
- A shadow labour rate is used for do-it-yourself (DIY) plumbing work done by home owners (referred to as the **DIY plumbing rate**). This rate reflects the opportunity cost of the owner's time and is based on typical value of leisure rates.
- A **regional premium** of 30% is applied for remote and regional work.

Table 6 summarises the rates assumed for modelling and lists the proposed changes in which the rates are used.

Table 6: Service cost and labour rate assumptions

Variable	Assumed value	Applicable changes
Domestic plumbing rate	Call-out & first 15 minutes: $125 Additional hours: $100 per hour	Change C—Scope of plumbing work (non-drinking-water sources) Change D—Minor plumbing work
Commercial plumbing rate	No call-out fee Hours worked: $90 per hour	Change C—Scope of plumbing work (unmetered drinking-water systems) + regional premium Change E—Introduce duty of care
Non-plumbing professional rate	$70 per hour	Change C—Scope of plumbing work
LPC labour rate	$55 per hour (including super)	Change F—Introduce business licence Change H—Require insurances
Tradie labour rate	$45 per hour (including super)	Change G—Remove business training
DIY plumbing rate	$30 per hour	Change D—Minor plumbing work

Calculations to determine the cost of services (or the opportunity cost of labour) used in the analyses were all based on the following standard formulas:[33]

Labour cost = *Price × Quantity*

= *(Time required × Labour cost) × (Times performed × Number of businesses or community organisations × Number of staff)*

Purchase cost = *Price × Quantity*

= *(Purchase cost) × (Times performed × Number of businesses or community organisations)*

[33] Office of Best Practice Regulation, *Guidance note: Regulatory burden measurement framework*, Department of the Prime Minister and Cabinet, February 2016, pp. 12, 13, online.

Estimates of the number of times a service is performed, in the case of each reform option considered, were driven by factors relevant to the change in question, such as the life of the plumbing fixture, the number of devices, testing requirements, and renewal requirement rates.

Growth assumptions

Growth assumptions were used to forecast various inputs, such as the number of dwellings, the numbers of devices and fixtures and the number of plumbing licences over the period of the analysis.

Where the growth assumption was unique to the change being considered, we discuss this in the relevant sections.

Common growth assumptions used were:

- number of dwellings
- number of plumbing professionals.

Growth in the number of dwellings was based on the historical change in the number of dwellings from the 2011 Census to the 2016 Census. We assumed that growth in Western Australian dwellings will remain consistent with this historical average of 1.7% per annum. This assumption was used in changes C and D.

The number of current licences is indicative of the current number of plumbing professionals. Table 7 shows the current and historical data on plumbing licences and permits.

For changes F, G and H, we need to make assumptions on the number of licensed plumbing professionals (and businesses) that would be in operation over the 20-year period.

In each case, we used the historical average annual growth in numbers of licensed plumbing contractors of 4.7% per annum. For changes F and H, this rate was adjusted to half (to 2.35% per annum), as industry feedback indicated that fewer than half the people who hold licensed plumbing contractor's licences run plumbing businesses.

Table 7: Numbers of licensed plumbing professionals, 2009–10 to 2016–17

Year	Licensed plumbing contractor	Tradesperson	Restricted plumbing permit	Provisional licence	Total
2009–10	2,601	2657	119	–	**5,377**
2010–11	2,812	2934	119	–	**5,865**
2011–12	2,960	3,477	113	–	**6,550**
2012–13	3,147	3,788	99	–	**7,034**
2013–14	3,345	3,972	97	–	**7,414**
2014–15	3,367	3,876	89	–	**7,332**
2015–16	3,470	3,758	92	–	**7,320**
2016–17	3,577	3,673	99	32	**7,381**
Average annual growth rate	**4.7%**	**5.0%**	**–2.4%**	**–**	**4.7%**

Source: Building Commission, 2017.

Value of a statistical life

The assessments based on threshold analysis used for changes C and E involved quantitative modelling of the likely cost impacts and a comparison of those amounts as 'thresholds' of avoided costs (or benefits) that would justify the change in costs. For these assessments, we used value of statistical life data to estimate the number of deaths or instances of ill health to be avoided.

The value of a statistical life is an estimate of the financial value society places on reducing the average number of deaths by one. A related concept is the value of a statistical life year, which estimates the value society places on reducing the risk of premature death, expressed in terms of saving a statistical life year.[34]

For the analysis, we used an approach and values recommended by the Australian Government's Office of Best Practice Regulation.

The value of a statistical life used was $4,390,368, and the value of a statistical life year was $190,249. Each of these values derives from Office of Best Practice Regulation guidance, which provides values in $2014. We converted those values to $2017 using the Reserve Bank of Australia's Inflation Calculator for the period from June 2014 to June 2017.[35]

Avoided costs (benefits) from technically compliant work on plumbing systems

The avoided costs (or benefits) from a properly maintained and functioning plumbing system are numerous. For this report, we focused on the avoided risks to human health as being the benefits from using or requiring a plumber to perform work.

In its submission to the review by ACIL Allen Consulting, the Plumbers Licensing Board pointed to the risks associated with insufficient or inadequate plumbing:[36]

> *Insufficient or inadequate plumbing and plumbing that does not conform to normative standards can expose the community to risks associated with:*
>
> - *waterborne and airborne diseases associated with sewage;*
> - *diseases arising from the contamination of potable water services;*
> - *disease and disability as a result of metallic or other chemical contamination from plumbing infrastructure;*
> - *scalding from poorly controlled heated water;*
> - *injury or property damage arising from the failure of plumbing equipment or systems, as in the explosion of a hot water system, the failure of an emergency shower to perform when needed or the failure of a water service in a structure fire;*
> - *[other risks not associated with public health]*

Changes C through E involve possible reforms that would require work to be performed in compliance with the relevant plumbing standards, either because the requirement is for the work to

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[34] Office of Best Practice Regulation, *Best Practice Regulation Guidance Note—Value of statistical life*, Department of the Prime Minister and Cabinet, December 2014, p. 1, online.

[35] The RBA Inflation Calculator is available at http://www.rba.gov.au/calculator/quarterDecimal.html.

[36] Plumbers Licensing Board submission, p. 2, as quoted in ACIL Allen Consulting, *Review of plumbing regulations in WA*, p. 23.

be done by a qualified plumber or because the change introduces a duty of care that requires this standard.

Other changes indirectly affect the risks to human health inadequate installation and maintenance of plumbing systems (and related systems, in the case of greywater) because the adequate enforcement and appropriate regulation of the industry will broadly carry through to the standard of plumbing work.

3.2 Change A: Amend the regulatory funding mechanism

The Building Commission (the work of which includes the regulation of plumbing) advises that it operates on a cost-recovery basis and so does not receive any recurrent funding for compliance and enforcement activities. Under this arrangement, the regulation of plumbing (including compliance auditing, the maintenance of standards and prosecutions) is funded through industry fees.

The fees for plumbing tradespeople, contractors and permit holders are set out in Schedule 1 of the Plumbing Regulations. The current fees fall into two broad categories:

- **Licence-related fees**—charged on initial applications, the issue of licences or permits, renewals of licences and replacements of licences or permits (items 1 to 9 in Table 7)
- **Compliance-type fees**—charged for notices of intent, certificates of compliance and the installation of fixtures (items 10 to 15).

The proposed reform deals only with *compliance-type fees*, so that is the focus of the remainder of this section.

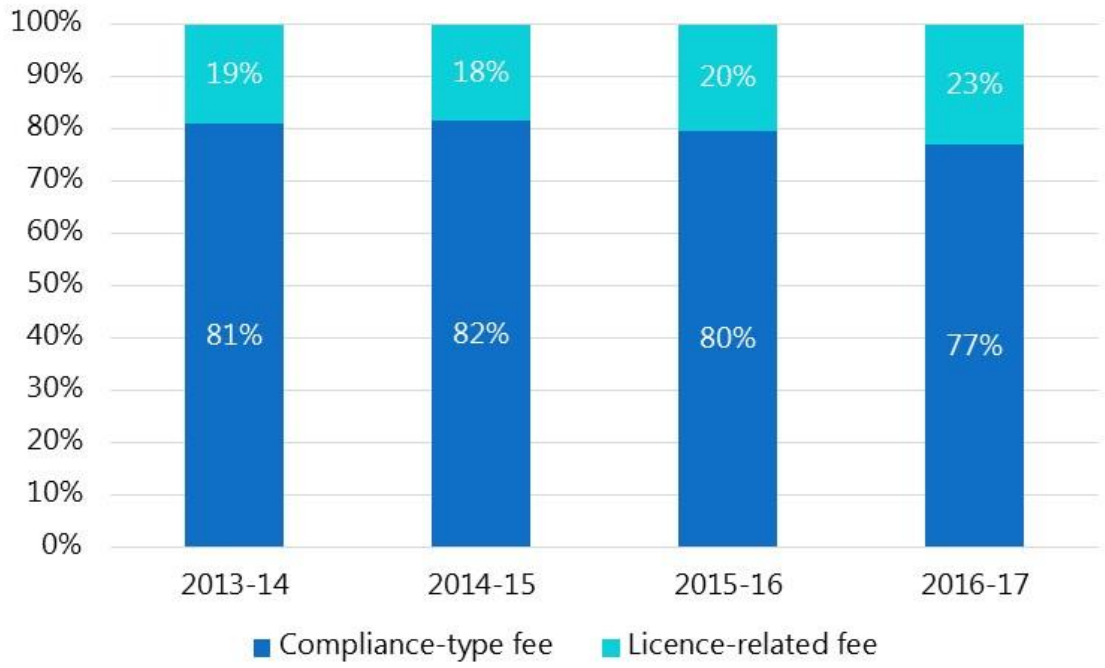
As shown in Table 8, licence-related fees include both fixed, once-off amounts (where a licence or permit is initially being processed) and renewal fees (the fees and the frequency of renewals depend on the licence type).

In contrast, the compliance-type fees are all linked to the quantity of work done. Fees are charged on a per notice/certificate, installation, lodgement, number of fixtures, per hour basis, or on a per copy basis in the case of copies and extracts from the register. The expectation is that the quantum of fees collected would increase as the work increases, reflecting additional compliance resources and activities costs likely to be incurred by the Building Commission with higher industry activity. This also acknowledges the link between ability to pay and the quantity of services that plumbers are being paid for.

As a result, most of the income generated through fee collection to fund the Building Commission's plumbing activities (including supporting the Plumbers Licensing Board) is recovered via compliance-type fees, as shown in

Figure 2.

Figure 2: Proportion of fee revenue from compliance-type fees and licence-related fees, 2013–14 to 2016–17



Source: Marsden Jacob analysis of data provided by the Building Commission.

Table 8: Current compliance-type fees set out in Schedule 1 of the Plumbing Regulations ($2017)

Item	Description of fee	Amount ($)
Compliance-type fees		
10.	Combined notice of intention and certificate of compliance (regulation 41(1) and 42(1))	22.50 per notice / certificate
11.	Combined notice of intention and certificate of compliance (regulation 41(1) and 42(1)) — booklet of 2 or more notices/certificates	22.50 per notice / certificate
12.	Multi-entry certificate of compliance (regulation 44(1)) — 1 multi-entry certificate	17.00 per certificate
13.	Multi-entry certificate of compliance (regulation 44(1)) — booklet of 2 or more multi-entry certificates	16.00 per certificate
14.	New installation fee for plumbing work involving 9 or less fixtures (regulation 45)	69.25 per new installation
15.	New installation fee for plumbing work involving more than 9 fixtures (regulation 45)	69.25 plus 11.40 for each fixture more than 9
15A.	Combined notice of intention and certificate of compliance to carry out work that includes performance solution (regulation 45A(1) and 45B(1))	22.75 per notice/certificate
15B.	Lodgment fee for notice of intention to carry out work that includes performance solution (regulation 45A(3))	780.00 per lodgement
15C.	Application for declaration for non-application or modification of plumbing standards (regulation 54)	780.00 per lodgement
16.	Re-inspection fee (regulation 73)	120.00 per hour or part hour
17.	Copy of register (regulation 102(3))	60.00 per copy
18.	Extract from register (regulation 102(4))	60.00 per copy

Source: Schedule 1 of the Plumbing Regulations.

In the 2013 review, ACIL Allen recommended reforms of the fee system for plumbing work that related particularly to the current 'notice of intent' fee system used in the collection of compliance-type fees. This was in part due to concerns that the system:

- is an inefficient method of recovering costs
- is administratively expensive to run
- incentivises the under-reporting of work and results in the under-collection of fees
- collects only new installation fees for new construction and does not collect such fees for maintenance, renovations or refurbishments (even though that work may be extensive).

The notice of intention system requires plumbers to lodge particular information or submit forms in accordance with the Plumbing Regulations. Each form attracts fees to be paid either in advance, in the case of certificates of compliance and multi-entry certificates, or upon lodgement, in the case of notices of intention and new fixture notifications (Regulation 45).

When plumbing inspectors conduct random inspections of plumbing work, they also check that the notice of intention or certificate of compliance has been lodged. Recent data from the six month period to June 2016 analysed by the Building Commission found that of 1,226 checks of certification requirements, 68 were non-compliant. Given that the plumbing work had already commenced or had been concluded on these sites it can be assumed that there is no intention to submit the notice of intention of certificate of compliance in these circumstances.

The true level of compliance will necessarily be related to the number and nature of inspections. Marsden Jacob understands from discussions with industry that the level of compliance is not well understood and that further transparency is desired. A number of stakeholders commented that lack of compliance would be driven partly by the system itself which is administratively cumbersome.

3.2.1 Options for assessment

Change A involves amendments to the cost-recovery mechanism associated with compliance fees. Funding related to licence applications and renewals has not been raised as a concern, so no change to the mechanism applicable to those activities is being considered.

The two options assessed were:

- **Option 1**—Minor changes to the current system. Revision of Regulation 45 (fixture fees) to ensure that it captures a broader range of plumbing work.
- **Option 2**—A plumbing safety levy collected through water service providers (akin to the Energy Safety levy).

A 'Do nothing' scenario was not considered a realistic option, as the current level of fee collection is considered insufficient. Therefore, the assessment compared the two options against one another rather than against a continuation of the current arrangements.

Option 1—Minor changes

Option 1 makes minor changes that are implementable under the Plumbing Regulations. The intention of the reform would be to ensure that it captures a broader range of plumbing work.

Option 2—Plumbing safety levy

Option 2 replaces the existing fee structure with a plumbing safety levy collected through water service providers. The levy would be similar to the Energy Safety levy[37] collected through electricity and gas distribution network providers and used to fund energy safety compliance and enforcement activities.

The plumbing safety levy would be legislated under the Plumbing Act. Drafting would require the government to develop an annual business plan (similar to the one in place for the Energy Safety levy) that sets out and provides transparency on:

- the intent of the levy
- the relevant business environment and challenges, including major projects
- a financial plan for the next year
- a summary of outcomes in the previous financial year.

Optionally, the government would be able to invite stakeholder comments on elements of the annual plan. The government would also be required to issue a notice that sets out the revenue to be collected.

To facilitate the collection of the levy through water service providers, amendments to legislation specific to water service providers, such as *the Water Services Act 2012*, may be required. The amendments would provide for the levy to be charged in line with usual water billing processes. The exact form of the levy has not been determined. Some options are that it could be:

- a fixed fee per property
- a variable fee based on metered water use
- a variable fee based on the value of the property (similar to sewerage charges).

The full details and an impact analysis of the particular mechanism were not in the scope for this report. Rather, the analysis sought to determine whether the approach is sound in principle and therefore should be further progressed compared to the alternative option.

3.2.2 Analysis of options and impact assessment

The primary evaluation method used for Change A was a principles-based approach that considered each reform option against defined criteria, drawing on principles from cost-recovery guidelines and principles for setting fees and charges in Australia. The potential financial impact of each option was also examined, as well as the alignment of the options with the approaches adopted for comparable Western Australian industries overseen by the Building Commission.

Evaluation criteria

For Change A, each reform option was assessed against criteria adopted from:

- the Western Australian Government's guidelines on *Costing and pricing of government services* (June 2015)[38]

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37 As outlined under the *Energy Safety Act 2016* (section 14) and the *Energy Safety Levy Act 2006*.

38 Department of Treasury, *Costing and pricing government services: guidelines for use by agencies in Western Australian public sector*, Government of Western Australia, June 2015, online.

- the Australian Government's *Cost recovery guidelines* (July 2014).[39]

Drawing on the principles outlined in the guidelines, the key principles and assessment factors against which we assessed the fee collection options included clarity of purpose, transparency, efficiency and timeliness.

Table 9 sets out the criteria that we used to assess the Change A options, including key assessment questions.

Table 9: Criteria used to assess Change A

Criteria	Description	Key assessment questions
Legality	The proposed fee structure needs to be legal in order to be effectively implemented. Of particular concern is the introduction of new or changed fees or charges that constitute a tax.	▪ Is there a risk that the fee would not be able to be charged on the basis that it is considered a tax?
Clarity of purpose	Clarity of purpose relates explicitly to the expectation that the fee or charge will be levied on the basis of full cost recovery unless the government has made a deliberate decision otherwise.	▪ Is the fee be linked to work (i.e. the beneficiary pays)? ▪ Does the fee structure provide adequate revenue? ▪ Does the fee structure provide for consistent income that aligns with costs incurred?
Transparency	Transparency relates to concerns with both the process used when setting fees and the transparency of all costs being used as the basis on which to calculate fees.	▪ Are the costs explicit and recognisable? ▪ Is the fee structure excessively complicated?
Efficiency	Efficiency is concerned with the administration costs associated with the revenue collection system being efficient. However, when considering best practice pricing, the principle also extends more broadly to consider the impact on supply and demand.	▪ Does the change create the right incentives for industry? ▪ Are fees applied consistently over time? ▪ Is revenue adequate, and is income consistent? ▪ Is cross-subsidisation minimised?
Timeliness	Timeliness refers to the need for an agency's fees and charges to remain relevant to government priorities.	▪ Do fee mechanisms and fee levels need to be reviewed regularly? ▪ Can the fee mechanisms and changes be implemented in a timely manner?

Source: Marsden Jacob analysis.

[39] Department of Finance, *Australian Government cost recovery guidelines*, 3rd edition, resource management guide no. 304, Australian Government, July 2014, online.

Assessment against criteria

A traffic light system was used to highlight where each option did not meet criteria (●), partially fulfilled criteria (●) or fulfilled criteria (●).

Table 10: Assessment of reform options for Change A option against defined criteria

Key: ● = Does not meet criteria ● = Partially fulfils criteria ● = Fulfils criteria	Option 1: Minor changes	Option 2: Plumbing safety levy
Legality		
Able to be charged (i.e. not a tax)	●	●
Clarity of purpose		
Fees should be linked to work (i.e. the beneficiary pays)	●	●
Revenue adequacy	●	●
Consistent income	●	●
Transparency		
Costs should be explicit and recognisable	●	●
Fee structure should not be excessively complicated	●	●
Efficiency		
Create right incentives	●	●
Consistent fees for companies	●	●
Cost of collection	●	●
Minimise cross-subsidisation	●	●
Timeliness		
Need to review regularly	●	●
Able to be implemented in a timely manner	●	●

On balance, Option 2 appears to better satisfy the evaluation criteria. It appears to equally or better satisfy the criteria of clarity of purpose, transparency and efficiency, while resolution of the **legality** of the proposal and the additional time needed to amend the Act rather than the regulations mean that this option performs less well for that criterion.

Option 2 appears preferable under the **clarity of purpose** criterion, as the costs are spread across the whole community—which is considered appropriate, as the benefits accrue to the whole community, too. In addition, the levy can be set to ensure a consistent and adequate income. Where members of the public come into direct contact with completed works, the compliance and enforcement activities may directly or indirectly prompt better safety outcomes.

Further, it is likely that all users of water service providers' services require plumbing services at regular intervals over time, and the number of plumbing service users who are also not users of water service providers' services is relatively small, as outlined in the financial impact assessment (below).

Transparency is balanced across the options because, while the fee structures are very different, they can be (or should be) readily communicated to end customers. The levy (Option 2) is likely to be simpler than Option 1, which would retain the current structure of differential fees for major and minor plumbing works.

Option 2 better fulfils the **efficiency** requirements. The main point of difference between the options is in the ability of each to create the right incentives. Option 1 performs less adequately due to the persistent risk that the plumbers who are most likely to drive compliance and enforcement activity costs may be those who are least likely to maintain good administrative practices that facilitate the collection of fees. Option 2 separates the two activities completely.

Both options provide relatively consistent fees for companies. Option 1 provides for aggregate fee levels commensurate on the amount of plumbing work done by businesses. Option 2 also has reflective properties, in that water bills are already commensurate to business operations where the amount of plumbing activity is correlated to the quantity of water metered.

On the two remaining efficiency factors (the cost of collection and the minimisation of cross-subsidies), the performance of each option is the opposite to the performance of the other. Option 2 fulfils the cost of collection criterion better than Option 1, as it amends the mechanism to ensure that cost recovery is highly likely and allows for under- or over-recovery of fees from one year the next to be readily balanced without introducing any additional incentives. Conversely, Option 1 appears to fulfil the criterion of minimising cross-subsidisation better than Option 2. Option 2, by its nature, results in an inherent level of cross-subsidisation in which some users of water service providers' services may contribute proportionally more to the levy than a purely beneficiary-pays system would provide for. A level of cross-subsidisation is also inherent in Option 1; however, consistent with the stronger link from fee payer to major beneficiary under that option, cross-subsidisation is also more likely to be avoided.

The **timeliness** criterion favours Option 1, as it can possibly be implemented more rapidly than Option 2.

Alignment with existing fee structure

In envisaging the likely arrangements for Option 2, it is useful to consider the existing arrangements under the Energy Safety levy. Under the *Energy Safety Act 2006* (section 14) and the *Energy Safety Levy Act 2006*, the government may collect a levy through electricity network and distribution providers and through gas distribution providers.

The legislation requires EnergySafety to develop an annual business plan that sets out:

- a statement of intent
- the business environment and challenges, including major projects
- the financial plan
- details of the proposed industry levy
- a brief outline of outcomes in the previous financial year.

The government also issues a notice (the Energy Safety Levy Notice[40]) that sets out the revenue to be collected.

Likely financial scale of a water levy

While both Option 1 and Option 2 should result in the collection of funds sufficient for cost recovery, their immediate impacts differ by stakeholder type.

Option 2 involves a significant change in the way funds are collected. Rather than costs being passed on from plumbers to their customers only when a plumbing service is required, all users of water service providers' services would contribute to the funding on an ongoing basis.

The Building Commission has indicated that a 'best practice' audit and enforcement team to ensure that plumbing standards are maintained would include around 37 full-time employees and would cost around $5.6 million per year.

An important consideration in adopting this form of funding mechanism is its impact on individual water service users. The three largest water utilities have around 1.1 million properties connected for water supply (Table 11).[41]

Table 11: Properties connected for water supply by the three largest water utilities

Utility	Properties connected
Water Corporation	1,078,639
Busselton Water	12,875
Bunbury Water (Aqwest)	17,113
Total number of properties	**1,108,627**

Sources: Utilities' 2016 annual reports.

Based the Building Commission's estimated $5.6 million cost for best practice audit and enforcement, this would equate to a levy on each property of marginally over $5. The levy would be very small compared to average annual household expenditure on water, sewerage and drainage, which is estimated at $1,553.

3.2.3 Recommendations and other findings

Option 2 appears to be preferable and, subject to consultation, further work should be done to implement this reform.

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40 For example, *Energy Safety Levy Notice 2015*, 8 April 2015, online.

41 While many households receive water services and sewerage services, there are many cases in which a house receives one service but not both. For this reason, it may be fairest if the fees are split between water and sewerage and customers pay only the fees that are relevant for their properties.

3.3 Change B: Restructure administrator and regulator roles

Administration and regulator roles for the plumbing industry are currently overseen by the relevant minister. Relevant day-to-day activities are undertaken by both the Plumbers Licensing Board and the Building Commission.

The Plumbers Licensing Board is established by Part 5A of the Plumbing Act. Its responsibilities include:

- administering the plumbers licensing scheme
- issuing licences to plumbers and managing disciplinary functions
- monitoring and advising on the qualification and training requirements for plumbers
- advising the Minister for Commerce on plumbing licensing and regulation.[42]

The Building Commission provides technical staff to support the board in administering the licensing system and disciplinary framework for plumbers, as well as monitoring and auditing performance against technical standards.

Analysis by ACIL Allen Consulting in 2013 found that the plumbing regulatory framework consisted of seven layers, from technical rules and regulations at the first levels to licensing administration and compliance by the technical regulator (Figure 3).

Figure 3: Overview of trade regulation

Layer	Decision maker	Description	Decisions to make
1		Commonly accepted definition of the trade	
2	Minister	Technical rules	▪ What should be the minimum standard of plumbing legally acceptable in WA? ▪ Would proposed technical rules place Western Australians at an unacceptable level of risk of problems due to plumbing?
3	Minister	Regulatory definition	▪ What is the scope of the plumbing regulatory regime? ▪ Where does plumbing 'stop' and other trades 'start'?
4	Minister	Objectives	▪ Why should plumbing regulation be used? ▪ What objective should the technical regulator (and possibly licensing authority) pursue as it administers the compliance regime?
5	Minister or licensing authority	Licensing regime	▪ Which branches of the trade should be reserved to licenced persons ▪ What skills do those persons need?
6	Licensing administrator	Licensing regime	▪ Have individual applicants met the licensing criteria? ▪ Should individual people be given a licence? With or without conditions?
7	Technical regulator	Compliance regime	▪ How should Government resources be allocated to ensure that plumbing work is done properly by authorised people? ▪ Has specific plumbing work been done in accordance with the technical rules? ▪ What should be done about specific individuals who have broken the rules?

Source: ACIL Allen Consulting, *Review of Plumbing Regulations in WA*, p. 73.

[42] Department of Mines, Industry Regulation and Safety, *Plumbers Licensing Board*, Government of Western Australia, 30 August 2017, online.

Based on its analysis, ACIL Allen recommended that the administration of plumbing laws be restructured to improve the clarity of the roles of:

- the licensing authority
- the licensing administrator
- the technical regulator.[43]

In considering changes to the administrator and regulatory roles, we followed the roles delineated by ACIL Allen but split the technical regulator's role into two elements: setting the technical standards and monitoring and enforcing those standards.

These roles are set out in the matrix shown in Table 12, which identifies four roles:

- For *licensing*, the setting of licensing policies (shown in blue) sets the standards for licensing. This could involve intermittent reviews of licensing requirements as technology and the industry change.
- For *licensing*, the application of licensing (shown in green) is the daily application of the licensing standards to ensure that applicants are assessed against the criteria and are issued licences as appropriate. In addition, plumbers who fail to meet the technical standards may have their licences reviewed as a disciplinary matter.
- For *technical standards*, the setting of the standards (shown in orange) includes reviews of the standards as required.
- For *technical standards*, the current standards are applied on a daily basis (shown in purple).

Table 12: Administrator and regulator roles

	Policy	**Application**
Licensing	Setting the licence requirements	Assessing licence applications against the required standards: ▪ Assess licences ▪ Issue licences ▪ Conduct / disciplinary functions
Standards	Setting the technical standards—such as input on the Plumbing Code of Australia	Monitoring and auditing performance against the technical standards

In the options outlined below, the activities in each quadrant do not change; however, the responsible agency and the agency that employs staff performing the roles varies among the options.

3.3.1 Options for assessment

Change B involves a restructuring of administrator and regulatory roles for plumbing. Six options, including maintaining the status quo, were considered for assessment. The options, which are described in full in the subsequent sections, are as follows:

- **Option 1** is the status quo.

[43] ACIL Allen Consulting, *Review of plumbing regulations in WA*, Section 4.6, p. 60.

- **Option 2** adopts a more streamlined role for the Plumbers Licensing Board, in which the board is responsible only for the licensing of plumbers. The role of the 'technical regulator' (enforcing compliance with technical standards) is the responsibility of the Building Commissioner, and Building Commission staff currently performing enforcement roles continue to provide that support.
- **Option 3** disbands the Plumbers Licensing Board completely. It is similar to Option 2, but the current Building Services Board has its representation and role expanded to include plumbing. A plumbing representative is added to the Building Services Board.
- **Option 4** disbands the Plumbers Licensing Board and moves day-to-day plumbing issues (covering both compliance and enforcement activities and the licensing administration) to a Technical Regulator that covers the plumbing, gas and electrical industries.[44]
- **Option 5** creates a new Plumbing Commissioner position and a plumbing directorate within the Building Commission. The Plumbing Commissioner could be the same person as the Building Commissioner.
- **Option 6** creates a Plumbing Technical Regulator who is supported by an Office of the Plumbing Technical Regulator and the Plumbing Technical Registration Board (which replaces the Plumbers Licensing Board). Unlike in Option 4, this group is completely removed from the Building Commission.

Option 1: Status quo

The current delineation of roles is as follows:

- **Licensing policy.** Through legislation, the licensing authority sets the criteria and standards, including for how to apply and assess applications. The Building Commission provides advice to the minister. The Plumbers Licensing Board can only advise the minister through the Building Commission.
- **Licensing administrator—Plumbers Licensing Board.** The board receives applications and provides plumbing licences on the basis of the criteria set out in the legislation.
- **Technical regulator—Plumbers Licensing Board.** The Building Commission provides technical staff to support the Plumbers Licensing Board to ensure compliance. The technical standards are set by the minister on the advice of the Building Commission

	Policy	**Application**
Licensing	Minister (on advice from Building Commission)	Plumbers Licensing Board (using Building Commission staff)
Standards	Minister (on advice from Building Commission	Plumbers Licensing Board (using Building Commission staff)

[44] Under this option, it is envisaged that the role of the energy safety regulator (currently EnergySafety that sits within the Department of Mines, Industry Regulation and Safety) could be expanded to encompass plumbing.

Option 2: A more streamlined role for the Plumbers Licensing Board

Option 2 reduces the role played by the Plumbers Licensing Board. Under this option, it is responsible only for the licensing of plumbers (both for assessing and for issuing the licences) and for deciding on conduct and disciplinary issues. The role of 'technical regulator' (enforcing compliance with the technical standards set by the minister) goes to the Building Commissioner, supported by Building Commission staff. ACIL Allen noted that this option could include a revised membership of the Plumbers Licensing Board.

	Policy	**Application**
Licensing	Minister (on advice from Building Commission)	Plumbers Licensing Board (using Building Commission staff)
Standards	Minister (on advice from Building Commission)	Building Commissioner (using Building Commission staff)

Option 3: No Plumbers Licensing Board

Option 3 disbands the Plumbers Licensing Board completely. It is similar to Option 2, but the current Building Services Board has its representation and role expanded to include plumbing. A plumbing representative is added to the Building Services board.

	Policy	**Application**
Licensing	Minister (on advice from Building Commission)	Building Services Board (expanded to include a plumbing representative)
Standards	Minister (on advice from Building Commission)	Building Commissioner (using Building Commission staff)

Option 4: Align plumbing regulation with EnergySafety

Option 4 disbands the Plumbers Licensing Board and moves day-to-day plumbing licensing and compliance and enforcement activities to a Technical Regulator. The Technical Regulator would cover the plumbing, gas and electrical industries.

We understand from the Building Commission that approximately 98% of plumbers are gasfitters and that Western Australia is the only state that licenses them separately.

Under this option, it is envisaged that the role of the energy safety regulator (currently EnergySafety that sits within the Department of Mines, Industry Regulation and Safety) could be expanded to encompass plumbing. In this report we refer to the "Technical Regulator" under option 4 as this expanded role – that includes plumbing in addition to existing gas and electrical industry roles.

The minister remains the legislative authority responsible for the licensing criteria and the setting of the technical standards. However, the Technical Regulator is responsible for the day-to-day administration of the licensing requirements. While there is no board the Gas Licensing Committee (within the current EnergySafety) could be expanded to include coverage of plumbers licensing.

The role of enforcing compliance with the technical standards is filled by plumbing compliance officers transferred from the Building Commission to the Technical Regulator.

	Policy	Application
Licensing	Minister (on advice from the Technical Regulator)	Technical Regulator or Gas Licensing Committee: ▪ Assess licences ▪ Issue licences ▪ Conduct / disciplinary functions
Standards	Minister (on advice from the Technical Regulator)	Technical Regulator (using specialist plumbing compliance officers)

Option 5: Create a single-trade plumbing regulator under the direction and control of a Plumbing Commissioner within the Building Commission

Option 5 creates a new Plumbing Commissioner position and a plumbing directorate within the Building Commission. The Plumbing Commissioner could be the same person as the Building Commissioner.

The plumbing directorate provides advice and support to the Plumbing Commissioner. The minister remains the licensing authority, but is advised by the Plumbing Commissioner and plumbing directorate rather than the Building Commission.

The role of the Building Services Board could be expanded to also cover the licensing of plumbers by including one or more plumbing representatives, or a revamped Plumbers Licensing Board could remain.

The role of technical regulator is allocated to the Plumbing Commissioner, who is supported in that role by plumbing compliance officers.

	Policy	Application
Licensing	Minister (on advice from Plumbing Commissioner)	Building Services Board or Plumbers Licensing Board: ▪ Assess licences ▪ Issue licences ▪ Conduct / disciplinary functions
Standards	Minister (on advice from Plumbing Commissioner)	Plumbing Commissioner supported by plumbing compliance officers

Option 6: A Plumbing Technical Regulator and a Plumbing Technical Registration Board supported by an Office of the Plumbing Technical Regulator

Option 6 is the preferred option of industry representatives and has the support of the Plumbers Licensing Board. This model is completely different from those used in other states and territories. Under this option, a Plumbing Technical Regulator is created and is supported by an Office of the Plumbing Technical Regulator and a Plumbing Technical Registration Board. Unlike in option 4, this group is completely removed from the Building Commission.

The minister remains the legislative authority but is supported by a separate regulator and office that report directly to the minister.

	Policy	Application
Licensing	Minister (on advice from Plumbing Technical Regulator)	Plumbing Technical Registration Board
Standards	Minister on advice (from Plumbing Technical Regulator)	Plumbing Technical Regulator (on advice from Office of the Plumbing Technical Regulator)

3.3.2 Analysis of options

The primary evaluation method used for Change B was an assessment against a range of criteria developed from published principles and guidance. In this case, the criteria against which options were assessed drew from best practice governance principles.

The costs associated with implementing each option were not considered at this point. Rather, the assessment was of whether one or more of the options should be further considered in greater detail with a view to implementation on the basis that the principles of the approach are both valid and sound, based on the assessment criteria.

Evaluation criteria

Marsden Jacob assessed the options against a range of governance criteria. Suggested criteria are set out in Table 13.

Table 13: Governance criteria used to assess Change B

Criteria	Description
Clarity of role and purpose	Does each group in this structure have a clear scope and objective for its role? Does this structure support or conflict with the industry's objectives?
Authority and decision-making	Does the structure support or impede the organisation's authority to deliver on the industry's objectives?
Accountability	Do responsibilities and accountabilities align?
Efficiency	Does the structure support the best use of resources to further the aims of the industry, with a commitment to improvement?
Transparency	Under this structure: ▪ Is there procedural and operational transparency? ▪ How is reporting undertaken? ▪ How is stakeholder communication undertaken? Does the information dissemination enable stakeholders to access and understand processes?
Durability	Is the model durable to changes in the economic, industrial and political environments?

Source: Marsden Jacob analysis.

Assessment against criteria

For Change B, the principles-based approach to assessment considered each reform option against a range of governance criteria and used a traffic light system to highlight areas of relative strength (●), potential improvement (●) and weakness (●) (Table 14). The findings in relation to each of the assessment criteria are discussed below.

Table 14: Assessment of reform options for Change B against best practice governance criteria

Key: ● = Relative weakness of option ● = Potential for improvement ● = Relative strength of option						
Model	**Options**					
	1	**2**	**3**	**4**	**5**	**6**
Clarity of role and purpose	●	●	●	●	●	●
Authority and decision-making	●	●	●	●	●	●
Accountability	●	●	●	●	●	●
Efficiency	●	●	●	●	●	●
Transparency	●	●	●	●	●	●
Durability	●	●	●	●	●	●

Clarity of role and purpose

The assessment against the clarity of role and purpose criterion answered the questions:

- Does each group in the structure have a clear scope and objective for its role?
- Does this structure support or conflict with the industry's objectives?

Options 2 and 3 were assessed as strong, as they minimise and consolidate the number of agencies currently undertaking roles. In particular, there is greater clarity on the role and jurisdiction of Building Commission staff performing compliance activities under these two options compared to the alternatives.

Under both the status quo (Option 1) and the alternative options, the position of the Plumbers Licensing Board as the authority responsible for compliance activities, but with no staff or personnel assigned to activities, introduces a potential lack of clarity on the roles and the purposes of agencies in the plumbing industry.

Option 5 was assessed as having the least clarity of roles and purposes on the basis that it introduces a further delineation of roles and potential reporting lines through the establishment of the Plumbing Commissioner role (even if that role is filled by the Building Commissioner).

Authority and decision-making

The authority and decision-making criterion addressed the questions:

- Is there a single point of accountability for each role?
- Does each person or body have a clear role and line of authority?

A third, broader question was then:

- Does the structure support or impede the organisation's authority to deliver on the industry's objectives?

The role of the current Plumbers Licensing Board and its reporting structure are unclear. Each of the reform options (options 2 to 6) has clearer roles, as the allocation of tasks has been considered from 'scratch'.

Accountability

Accountability is considered to be strong where responsibilities and accountabilities align. This criterion considers the question:

- Do responsibilities and accountabilities align?

Based on initial discussions, it appears that options 2, 5 and 6 have the best alignment of responsibilities and accountabilities.

Efficiency

The efficiency criterion considered the activities needed to be undertaken and the available resourcing for those activities. The criterion addressed the question:

- Does the structure support the best use of resources to further the aims of the industry, with a commitment to improvement?

Options 2, 3 and 4 were assessed as enabling a relatively efficient use of resources to fulfil the industry's aims. In contrast, options 5 and 6 appeared to be relatively expensive ways to achieve the desired outcome.

Transparency

Questions considered for the transparency criterion included:

- Is there procedural and operational transparency?
- How is stakeholder communication undertaken? Does the information dissemination enable stakeholders to access and understand processes?

Transparency is likely to be highest under options 4, 5 and 6. For each of those options, the extent of reform changes will enable agencies to refocus and tighten reporting, stakeholder communications and operational processes.

In contrast, option 4 may result in plumbing being only a small element of the role performed by Technical Regulator. It may be difficult for it to overcome a perception that the voice of plumbers is relatively small and unimportant. This may result in a high level of operational and procedural transparency, but poor stakeholder communication.

Durability

The durability criterion considered the ability for the model to remain relevant and accommodate changes in the economic, industrial and political environments.

We considered the durability of options 2, 3 and 4 to be higher than that of options 1, 5 and 6. A potential concern with options 5 and 6 is the interaction between the regulatory bodies and overlying standards, such as the Plumbing Code of Australia.

3.3.3 Recommendations and other findings

Based on our analysis, Option 2 (a streamlined role for the Plumbers Licensing Board) is the most favourable, as it had the highest number of criteria assessed as green. Subject to feedback through consultation, we recommend that Option 2 be further developed and implemented.

3.4 Change C: Broaden the scope of regulated plumbing legislation

The current scope for regulated plumbing work is set out in section 59I of the Plumbing Act and defined in Regulation 4 of the Plumbers Regulations. The scope currently covers three main areas:

1. Water supply plumbing work is limited to the supply of potable water **from a meter assembly to the points of use within any property**.
2. Sanitary plumbing work covers works to carry wastewater or other waste but **does not include drainage plumbing work**.
3. Drainage plumbing work is work on underground pipes and other fittings used or intended to be used for the carrying of wastewater to a sewer or wastewater or other waste to an apparatus for the treatment of sewage.

Work that is plumbing related but that is not included in the above definition is, as a result of the drafting of section 9(1), not required to be performed by a plumber.[45]

In its 2013 review, ACIL Allen noted that the definition in Regulation 4 excludes several categories of work that are within the commonly accepted definition of plumbing,[46] and that the reference to 'a meter assembly' causes particular concern because it effectively excludes coverage of unmetered drinking water.

The current definition in the Western Australian legislation means that two key areas (that do fall within the Plumbing Code of Australia) are excluded from plumbing regulation. This means that this plumbing work is unregulated, which can increase risks to the public and others. The two areas are:

- non-drinking-water services (as outlined in Part B3 of the Plumbing Code of Australia)
- unmetered drinking water.

Non-drinking-water services

Non-drinking water is water that is not intended for human consumption, personal hygiene, food preparation or utensil washing. Non-drinking-water systems therefore tend to provide water that can be of lower quality than drinking water but is still suitable for its intended purpose, such as garden watering; toilet and urinal flushing; clothes washing; vehicle washing; path/wall washing; and industrial purposes.[47]

Non-drinking-water sources include groundwater, rainwater, stormwater, wastewater and greywater. The Department of Water's *Guideline for the approval of non-drinking water systems in Western Australia* defines typical non-drinking-water systems as including:

- third-pipe or dual-reticulation schemes

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[45] Some work has been exempted in the regulations and may be carried out by non-plumbers. However, the exemptions are currently largely limited to work performed by water service providers (and therefore covered in alternative legislation), work done by apprentices and work in remote Aboriginal communities.

[46] Such as mechanical services plumbing (heating, ventilation and air-conditioning), fire services plumbing, stormwater plumbing, roof plumbing, and urban irrigation. See ACIL Allen Consulting, *Review of Plumbing Regulations in WA*, p. 15.

[47] Under Part B3.3 of the Plumbing Code of Australia, the distribution of non-drinking water is limited to this list of uses as well as any other use authorised by the authority having jurisdiction.

- on-site options such as greywater re-use systems, rainwater tanks, domestic garden bores and aerobic wastewater systems.[48]

Part B3 of the Plumbing Code of Australia sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a non-drinking-water service on a property from the point of connection to the points of discharge.

Unmetered drinking-water systems

Unmetered drinking-water systems are generally found outside of the water service provider supply regions, such as in remote areas of Western Australia, where potable water supplies are not otherwise readily available or accessible. Unmetered water supply systems in Western Australia include:

- self-supplied systems (such as rainwater tanks) used within buildings
- systems in smaller towns, remote mining towns (such as Tom Price) and Indigenous settlements
- systems in temporary mining camps (such as FIFO operations)
- systems on private farms
- systems at recreation facilities (for example, some roadhouses and caravan parks self-supply their own drinking water).

We note that not all unmetered water systems of these types are intended to supply drinking water. This reform is limited to systems producing drinking water that is primarily intended for human consumption but which also has other domestic uses and that are connected to a house or building.

In making recommendations, ACIL Allen noted:

> *Under the current WA regulatory definition of plumbing, water supply work on unmetered systems is not subject to the regulatory regime, though drainage and sanitary work in those places is subject to the regime.*[49]

ACIL Allen quoted the Institute of Plumbing Australia's explanation of the continued exclusion of unmetered systems as being an outcome of the reference to **a meter assembly** being:

> *… left over from when water service providers regulated plumbing through their bylaws simply to protect the provider's infrastructure and has no place in the modern regulations.*[50]

3.4.1 Options for assessment

Two reform options were considered for each of the two changes—to non-drinking-water services and to unmetered drinking-water, respectively—to broaden the scope of plumbing work. The options assessed are:

- **Base case:** No change. Work related to non-drinking-water services or unmetered drinking water remains unregulated and work is not required to be performed by a licensed plumber.

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[48] Department of Water, *Guideline for the approval of non-drinking water systems in Western Australia: urban developments*, Government of Western Australia, December 2013, online.

[49] ACIL Allen Consulting, *Review of plumbing regulations in WA*, p. 15

[50] Submission of Institute of Plumbing Australia, 19 July 2013, p. 5, as quoted in ACIL Allen Consulting, *Review of plumbing regulations in WA*, p. 15.

- **Option 1**: Require work to be performed by a licensed plumber.

Under Option 1, coverage focuses on the inclusion of property types for which a third-party risk of harm or contamination is greatest. Coverage will be limited to ensure that it reduces risks while not imposing an unnecessary burden on stakeholders.

Under this option, coverage of unmetered drinking water is extended to buildings that may be used by third parties (other than the owner), such as employees or members of the public. For this reason, it is intended to align the scope of section 70 of the *Building Act 2011* (and other sections with similar drafting within that Act). The Building Act sections are as follows:

> *… apply to a building or an incidental structure …*
>
> *(a) that is, or is proposed to be, a residential facility or a recreational facility; or*
>
> *(b) that members of the public normally use; or*
>
> *(c) to which members of the public are permitted access.*

3.4.2 Threshold analysis

In assessing the proposed reforms, we were able to estimate the change in costs; however, it was not possible to accurately predict the resulting change in levels of injury and illness. To assess the possible reforms to broaden the scope of plumbing work in the legislation, we used a threshold analysis.

The costs associated with the two proposed changes to the scope of plumbing legislation were modelled individually to:

- include non-drinking-water services
- include unmetered drinking-water systems.

We then identified the quantum of benefits that would be necessary to outweigh the cost impacts.

Non-drinking-water services

For the threshold analysis, we modelled the impacts for two types of non-drinking-water services:

- recycled or greywater systems
- rainwater tanks.

Our modelling also focused only on quantifying the costs where the risks of incidents affecting human health would be highest; that is, where the systems are connected to the dwelling and therefore the risk of cross-connections is higher. We acknowledge that the reform would extend beyond greywater systems and rainwater tanks to include bore water and water from rivers or dams. However, those systems appear to be less common, and reliable data is not readily available.

Key assumptions used in modelling the cost impacts of this change are outlined in Table 15.

Table 15: Key assumptions for cost impact modelling—greywater systems and rainwater tanks

Input	Assumption	Comment
General assumptions		
Number of Western Australian dwellings (Year 0)	1,070,962	2016 Census (see Section 3.1)

Input	Assumption	Comment
Growth rate of Western Australian dwellings (per annum)	1.7%	Based on historical growth (see Section 3.1)
Proportion of dwellings using a plumber (base case)	63.8%	Based on data from Table 11, Australian Bureau of Statistics (ABS), *Environmental issues: water use and conservation, March 2013* (released October 2013)
Proportion of dwellings using a plumber (Option 1)	95%	
Transition period	2 years	Period over which compliance rate changes under Option 1 following implementation of the reform
Recycled or greywater systems		
Number of recycled or greywater systems	117,840	Table 2, ABS, *Environmental issues: water use and conservation, March 2013*
Growth rate in recycled or greywater systems	1.7%	In line with growth in dwellings
Time required for plumbing (per dwelling per annum)	3.5 hours	Time for installation is around 5 hours of labour, 3 hours of maintenance required per year (on average). Total estimated hours are averaged over an assumed 10-year life of the system.
Average plumbing costs	$332.50	A domestic plumbing rate is assumed
Time required for a non-plumber (per dwelling per annum)	As per plumber hours + 20% to reflect learning and rework	
Non-plumber cost	$259	A non-plumbing professional rate is assumed ($70 per hour)
Rainwater tanks		
Number of rainwater tanks plumbed into the house	47,688	Table 2, ABS, *Environmental issues: water use and conservation, March 2013*
Growth rate in rainwater tanks	1.7%	In line with growth in dwellings
Time required for plumbing (per dwelling per annum) (Option 1)	3.3 hours	Time for installation is around 3 hours of labour. A further 3 hours per year (on average) of maintenance by a plumber is

Input	Assumption	Comment
		required.[a] Total estimated hours are averaged over an assumed 10-year life of the rainwater tank.
Average plumbing costs (Option 1)	$318.50	A domestic plumbing rate is assumed
Time required for a non-plumber (per dwelling per annum)	As per plumber hours + 20% to reflect learning and rework	
Non-plumber cost	$245.00	A non-plumbing professional rate is assumed ($70 per hour)

a Hours for maintenance activities such as clearing drainpipes are not included in this estimate, as those activities are assumed to be undertaken by unqualified people regardless of the plumbing scope coverage.

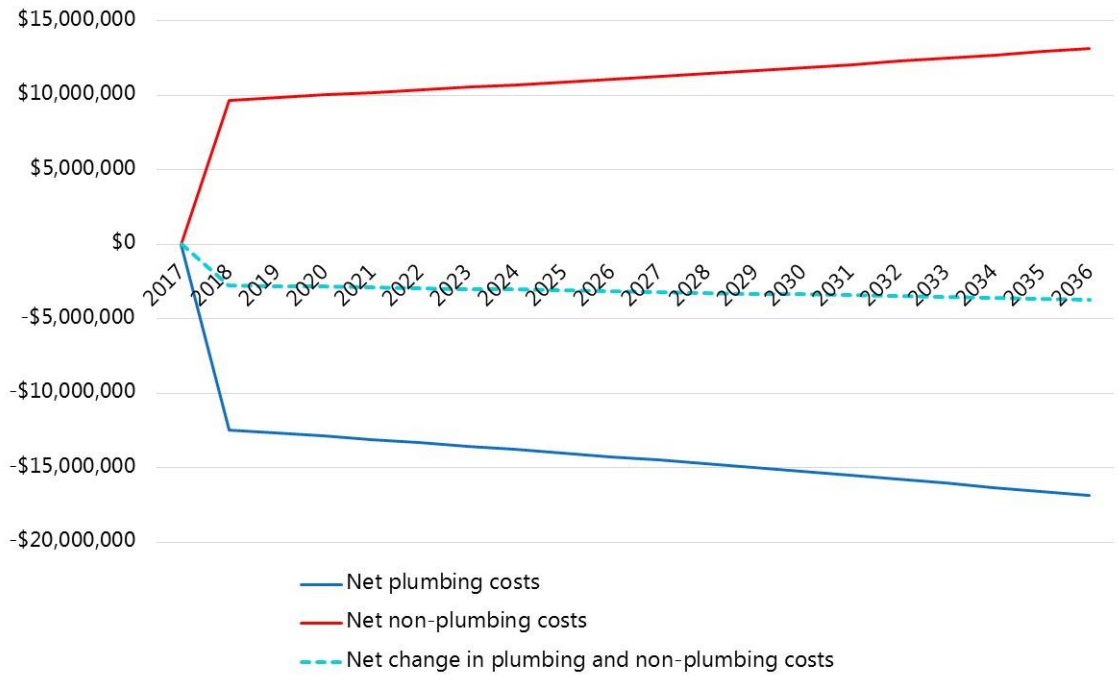
The changes in costs under the base case and the reform option are shown for recycled and greywater systems in Figure 4 and for rainwater tanks in

Figure 5.

The charts each show the change in plumbing-related costs as dwellings with these systems transition from non-plumbing costs (where work is done by a non-plumbing professional, such as a general tradesperson) to plumbing costs (where work is done by a qualified plumber). Over the transition period, the net plumbing costs increase and the net non-plumbing costs decrease.

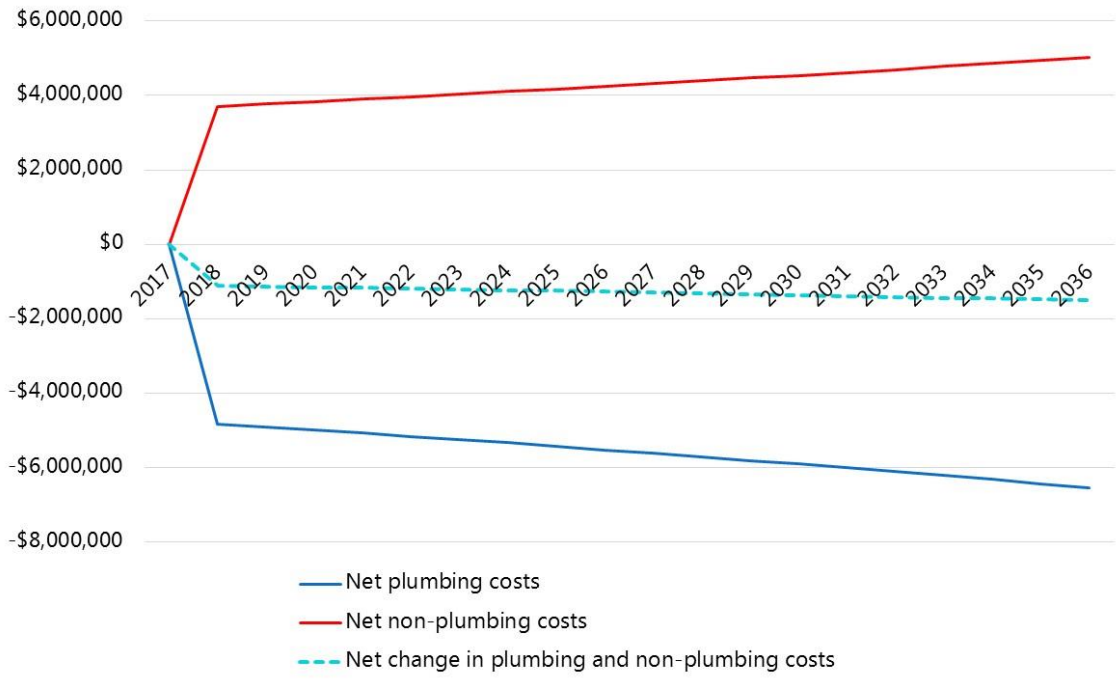
Overall, there is a net increase in the total costs (shown as the dashed line labelled 'net change in plumbing and non-plumbing costs'), as the plumbing rate is higher than the non-plumbing professional rate. The higher plumbing rate outweighs the higher number of hours needed when a non-plumbing professional does the work.

Figure 4: Change in plumbing and non-plumbing costs, recycled and greywater systems, 2017 to 2036



Source: Marsden Jacob Associates, 2017.

Figure 5: Change in plumbing and non-plumbing costs, rainwater tanks, 2017 to 2036



Source: Marsden Jacob Associates, 2017.

In addition to the changes in plumbing costs, it is expected that government costs will increase to reflect new compliance and enforcement activities.

Table 16 summarises the changes in all cost impacts, including additional government costs.

We estimate that the reform to broaden the scope of regulatory plumbing work to cover non-drinking-water systems, as expressed by modelling for recycled and greywater systems, would result in $102 million of additional costs over the 20-year period.

Table 16: Net cost impacts and threshold analysis, greywater systems and rainwater tanks ($2017, millions)

	Present value, $ million
Change in costs (present value)	
Increase in plumbing costs	-$201.61
Reduction in non-plumbing costs	$156.49
Additional government costs	-$0.78
Total net costs / avoided incident costs (i.e. benefits) required to justify changed costs	-$45.89

The additional costs are expected to result in a number of benefits, the vast majority of which are related to health and safety risk mitigation.

For non-drinking-water services, the avoided health risks are primarily expected to be reduced risk of diseases arising from the contamination of potable water services and reduced disease and disability as a result of metallic or other chemical contamination from plumbing infrastructure.

Anecdotal evidence from stakeholder discussions suggests that the number of cross-connection incidents in Western Australia might be around one per year.

Of the incidents that have occurred over the past 4–5 years, three have involved garden bores being connected to mains water reticulation systems and another was a fire service that had also been connected to a mains water reticulation system. Table 17 shows that, using the statistical value of a life, a total of 10.5 lives would need to be saved over the 20-year period. This equates to one life every two years.

Table 17: Threshold number of deaths that need to be avoided to justify the reform

Number of deaths that need to be avoided to justify expenditure	
Total deaths (over 20-year period) that need to be avoided	10.5
Average deaths per year that need to be avoided	0.52

Unmetered drinking-water systems

For the threshold analysis, we modelled the impacts for two types of unmetered drinking-water systems:

- systems in mining towns, at mine sites and at remote infrastructure projects (referred as to as 'remote mining and infrastructure sites')
- remote parks and recreation facilities, such as tourist sites and remote homesteads that have public access (referred to as 'remote recreation facilities').

The risks to human health from inadequate plumbing work on unmetered drinking-water systems are the same as those in metered systems. However, our modelling focused primarily on locations where the risks would present to the public and to workers employed at remote sites.

We note that homesteads and remote farms that are mainly family run are also likely to be captured in this change. However, for those sites we consider that there is a strong personal incentive for the owners to perform plumbing work to a high standard, and plumbers may already be used at those sites for that reason. The impact on such sites was not modelled.

Key assumptions used in modelling the cost impacts of this change are outlined in Table 15.

Table 18: Key assumptions for cost impact modelling—greywater systems and rainwater tanks

Input	**Assumption**	**Comment**
General assumptions		
Number of Western Australian dwellings (Year 0)	1,070,962	2016 Census (see Section 3.1)
Proportion of dwellings connected to mains water (the remainder is assumed to be affected by the reform)	96%	Table 4, ABS, *Household choices related to water and energy*, cat. no. 4656.5, October 2009
Average number of hours of plumbing work per dwelling	5.9 hours	Average based on the number of dwellings and number of hours worked by licensed plumbing contractors in Western Australia.

Input	Assumption	Comment
Time required for a non-plumber (per dwelling per annum)	As per plumber hours + 40% to reflect rework	
Remote mining and infrastructure sites		
Number of dwellings on remote sites affected	30,000	There are approximately 60,000 FIFO workers in Western Australia,[a] and we assume that each dwelling is shared between two workers (on a rostered basis)
Growth in remote dwellings	1.7%	Western Australian average population growth over the period from 2011 to 2016
Proportion of dwellings using a plumber (base case)	95%	
Proportion of dwellings using a plumber (Option 1)	99%	
Remote recreation facilitates		
Number of dwellings on remote recreational facilities	15,000	Balance of dwellings after numbers attributable to remote infrastructure projects are deducted
Growth in remote recreation facilitates	1.7%	In line with growth in dwellings
Proportion of dwellings using a plumber (base case)	80%	
Proportion of dwellings using a plumber (Option 1)	95%	

a Parliament of Western Australia, *The impact of FIFO work practices on mental health: final report*, prepared by the Education and Health Standing Committee for the Legislative Assembly, report no. 5, June 2015, p. 5.

We note the following:

- A commercial plumbing rate + 30% regional premium was used for work performed by a plumber.
- A non-plumbing professional rate (of $70 per hour + 30% regional premium) was used for work that is not undertaken by a plumber.
- The transition period was assumed to be slower for recreational facilities (5 years) compared to remote infrastructure sites (3 years). The transition period is the period over which the rate of plumber use changes from the base case rate to the rate assumed to be reached under Option 1.
- We assumed that the current rates at which plumbers are engaged at remote infrastructure sites are higher than the rates for remote recreational sites (95% compared to 80%). This reflects the fact that many of the remote infrastructure projects already have plumbers engaged for various

project requirements and are therefore likely to be able to access the necessary professionals more readily (even if this is not strictly required).

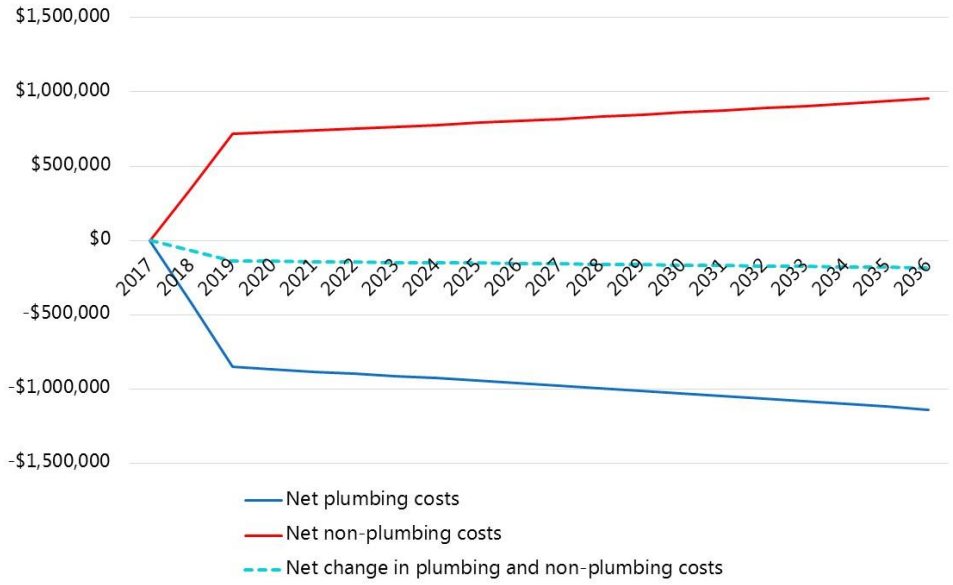
The change in costs under the base case and reform option are shown for recycled and greywater systems in Figure 4 and for rainwater tanks in

Figure 5.

The charts show the change in plumbing-related costs as dwellings with these systems transition from non-plumbing costs (where work is undertaken by a non-plumbing professional such as a general tradesperson) to plumbing costs (where work is undertaken by a qualified plumber). Over the transition period, the net plumbing costs increase and the net non-plumbing costs decrease.

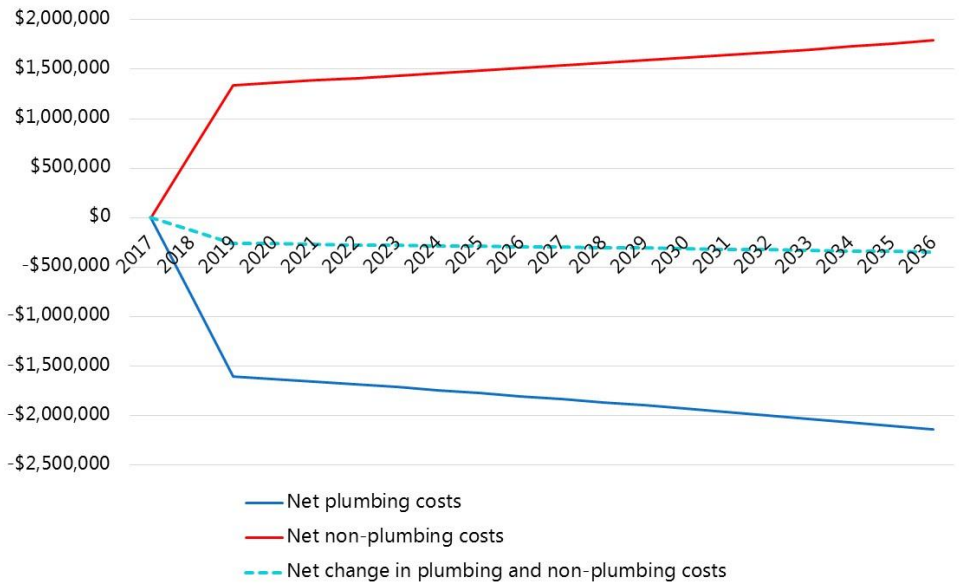
Overall, there is a net increase in the total costs (shown as the dashed line labelled 'Net change in plumbing and non-plumbing costs), as the plumbing rate is higher than the non-plumbing professional rate. The higher rate outweighs the higher number of hours required when a non-plumbing professional does the work.

Figure 6: Change in plumbing and non-plumbing costs—remote mining and infrastructure sites, 2017 to 2036



Source: Marsden Jacob Associates, 2017.

Figure 7: Change in plumbing and non-plumbing costs—remote recreation facilities, 2017 to 2036



Source: Marsden Jacob Associates, 2017.

In addition to the changes in plumbing costs, it is expected that government costs will increase to reflect new compliance and enforcement activities.

Table 19 summarises the changes in all cost impacts, including additional government costs.

We estimate that the reform to broaden the scope of regulatory plumbing work to cover unmetered drinking-water systems as expressed by modelling of changes for remote mining and infrastructure sites and remote recreation facilities would result in small benefit of $1.63 million.

Table 19: Net cost impacts and threshold analysis, remote mining and infrastructure sites and remote recreation facilities ($2017, millions)

	Present value, $ million
Increase in plumbing costs	-$27.08
Reduction in non-plumbing costs	$29.49
Additional government costs	-$0.78
Total net costs / avoided incident costs (i.e. benefits) required to justify changed costs	**$1.63**

Any additional costs are expected to result in a number of benefits—the vast majority of which are related to health and safety risk mitigation.

For unmetered drinking-water services, the avoided health risks are expected to be delivered as reduced risks of the same types of incidents that arise in metered drinking-water systems. Those risks were identified by the Plumbers Licensing Board in its submission to ACIL Allen's review (quoted in section 1193.1) and include:

- waterborne and airborne diseases associated with sewage
- diseases arising from the contamination of potable water services
- disease and disability as a result of metallic or other chemical contamination from plumbing infrastructure
- scalding from poorly controlled heated water

- injury or property damage arising from the failure of plumbing equipment or systems, as in the explosion of a hot water system, the failure of an emergency shower to perform when needed or the failure of a water service in a structure fire.

A threshold analysis has not been presented as the quantitative analysis results in a net benefit.

3.4.3 Recommendations and other findings

Consistent with our analysis of Change C, we summarise our recommendations in relation to the broadening the scope of regulated plumbing legislation for non-drinking water services and unmetered drinking water services in separate sections as follows.

Non-drinking-water services

Cost modelling of changes to include non-drinking-water services focused on the impacts from coverage of recycled and greywater systems and rainwater tanks.

We estimate that the change would result in net additional costs of $45.89 million ($2017, present value). Translated into statistical lives, the reform would need to save approximately 0.52 lives (or avoid equivalent illness) per annum to justify this cost.

The number of deaths and illness reported from incidents relating to non-drinking water services is currently low and may not justify the reform. However, the use of third pipes is becoming more common. It is expected that increasing popularity of third pipe scheme options will mean the number of services will increase and as a consequent the number of incidents will also rise.

In making our recommendation we have also given consideration to:

- The current lack of regulatory clarity around third pipe schemes – There is some anecdotal evidence to suggest that projects have been modified as a result of the lack of regulatory control and that while responsibilities (and therefore liabilities) around these schemes remain unclear, innovation in this space will be less well adopted in Westenra Australia compared to other states.
- A desire to align the definition of plumbing work to definitions used in other states that provide coverage of non-drinking water services. We note that this would achieve requirements under the Inter-Governmental Agreement for the Australian Building Codes Board[51].

For the above reasons, we recommended that the scope be broadened to include non-drinking water services.

Unmetered drinking-water systems

Cost modelling of the impact of the change to include unmetered drinking-water services focused on the impacts from coverage of two types of remote sites: mining towns and remote infrastructure sites; and remote recreational facilities.

We estimate that the change would result in net benefit of $1.63 million ($2017, present value). A threshold analysis on the number of statistical lives that need to be saved to justify the reform has not been conducted on the basis that the reform already delivers benefits.

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[51] An Agreement between the Governments of the Commonwealth of Australia, the States and the Territories to continue in existence and provide for the operation of the Australian Building Codes Board, Recital C, Online

Additionally, we see no reason for unmetered and metered drinking water to be differently from regulatory perspective where human health risks are concerned. Therefore, we recommend the scope of plumbing be broadened to include unmetered drinking water services.

3.5 Change D: Exempt simple plumbing work on own home

Regulation 9 in Part 3 (Licences and permits) of the Plumbing Regulations specifies that all 'plumbing work' requires a licence or permit:[52]

> *A person must not carry out plumbing work of any kind or in any circumstances except in accordance with a licence or permit that authorises the person to carry out plumbing work of that kind or in those circumstances.*
>
> *Penalty for this subregulation: a fine of $5 000.*

'Plumbing work' is defined in section 59I of the Plumbing Act, and that definition is expanded upon in section 4 of the Plumbing Regulations.

The current definition covers all water supply work (except 'exempt work') that 'involves the installation, alteration, extension, disconnection, repair or maintenance of pipes and other fittings used or intended to be used for the supply of potable water from a meter assembly to the point of use within any property'. Similar definitions for sanitary plumbing work and drainage plumbing work are also outlined in section 59, and those provisions cover all repair and maintenance work on fittings and fixtures within property boundaries.

The current definition of plumbing work does not distinguish between types of work by reference to the technical skill level required to perform the work adequately or to potential risks to health and safety.

Therefore, the definition extends to include a number of minor, low-risk and relatively non-technical plumbing maintenance tasks, such as changing showerheads and tap washers in residential properties, that home owners might reasonably perform.

The cost of hiring a plumber for such minor maintenance activities is relatively high and potentially unnecessary, given the low skill level needed for the tasks and the low risk to the community from errors in such work.

While the Building Commission is not actively targeting this type of noncompliance, the coverage of the legislation means that such activities as changing showerheads and tap washers attract a penalty they are not done by a licensed plumber or plumbing permit holder.

The legislation is potentially imposing an unnecessary burden on home owners by requiring them to hire a plumber for these minor tasks. In addition, retaining the legislation but not enforcing it does not align with the principles of good regulation identified by the Taskforce on Reducing Regulatory Burdens on Business.[53]

3.5.1 Options for assessment

Two options considered for assessment were:

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[52] Clauses 9(2) and (3) provide exemptions for apprentices under supervision and for permitted work in remote Aboriginal communities. It appears that all other plumbing work is not permitted.

[53] Australian Government, *Rethinking regulation: report of the Taskforce on Reducing Regulatory Burdens on Business*, 2006, online.

- **Base case:** No change (with adequate enforcement).
- **Option 1:** Exempt specified minor work performed by an owner-occupier of a dwelling in that dwelling, including:
  - repairing or replacing a showerhead
  - replacing a washer in a tap
  - replacing an inlet or outlet washer in a toilet cistern
  - replacing a domestic water filter cartridge
  - clearing a blocked waste pipe by the use of a plunger, flexible hand rod or handheld water hose only (that is, by non-mechanical and non-electrical means).

Under Option 1, owners and occupiers of dwellings are given a choice as to whether specified work is done by a plumber, themselves or someone else (who is not paid).

Note that any work completed under the exemption is still required to be completed in compliance with applicable technical plumbing standards.

Consistency with other Australian jurisdictions

If adopted, Option 1 will bring Western Australian legislation into line with comparable exemptions for owner-occupier work in New South Wales and Victoria.

In New South Wales, section 4(5)(e) of the *Plumbing and Drainage Act 2011* exempts some owner/occupier work as follows:

> *(e) exempt owner/occupier work, being work that:*
>
> *(i) involves repairing a tap or showerhead in a dwelling (other than a repair of a thermostatic mixing valve, tempering valve or backflow prevention device) or the installation of water-restricting or flow-regulating devices to tap end fittings (including showerheads) in a dwelling, and*
>
> *(ii) is carried out by the owner or occupier of the dwelling, or a person authorised to carry out the work by the owner or occupier of the dwelling who does not receive payment or other consideration for carrying out the work.*
>
> *Note.*
> *Work excluded from the definition of plumbing and drainage work still has to be done in accordance with any other relevant legislation, for example the Home Building Act 1989.*

In Victoria, section 221D(2) of the *Building Act 2003* allows for some minor work to be done by a person who is not licensed or registered:

> ***221D Plumbing work only to be carried out by licensed or registered plumbers***
>
> *(1) A person must not carry out any plumbing work of a particular class or type unless he or she is licensed or registered by the Authority to carry out work of that class or type.*
>
> *Penalty: 500 penalty units*
>
> *(2) Despite subsection (1), a person who is not licensed or registered by the Authority may*
>
> *(a) repair a tap in any dwelling that the person owns and occupies; and*
>
> *(b) carry out any other plumbing work that the regulations state is plumbing work that may be carried out by a person who is not licensed or registered.*

(3) Subsection (2)(a) does not permit a person to repair any thermostatic mixing valve, tempering valve or backflow prevention device.

Regulation 11 of the Plumbing Regulations 2008 extends this exemption:

11 Plumbing work that may be carried out by unlicensed or unregistered persons

(1) For the purposes of section 221D(2)(b) of the Act, the change over of a 3 star shower head in a dwelling is plumbing work that may be carried out by a person who is not a licensed or registered plumber.

(2) For the purposes of section 221D(2)(b) of the Act, the repair or replacement of tap washers and other minor tap repairs in a dwelling is plumbing work that may be carried out by a person who is not a licensed or registered plumber.

Note
Under section 221D(2)(a) of the Act, a person is exempted from having to be licensed or registered as a plumber when repairing a tap in a dwelling that the person owns and occupies. The above regulation extends this exception to non-owners or non-occupiers of a dwelling.

3.5.2 Cost–benefit analysis

The CBA used for this assessment was based on the replacement of tap washers and showerheads, as those activities are the ones most likely to be performed by owner-occupiers under the reform.

The key input assumptions used in the CBA are summarised in Table 20. In addition, the CBA made the following simplifying assumptions:

- Washers have an estimated life of 10 years and require replacement at that interval.[54]
- Showerheads have an estimated life of 15 years and require replacement at that interval.[55]
- Plumbing labour cost estimates were based on a call-out fee and 15 minutes of labour at the domestic plumbing services rate. Parts were assumed separately and not included in the analysis, as they are needed in all scenarios.
- Non-plumbing cost estimates (when an owner-occupier does the work) were valued at the leisure time rate ($30 per hour), and the time taken for the work was assumed to be longer than required for a plumber (45 minutes compared to 15 minutes for a plumber). The modelling also assumed a 'rework' cost to reflect the need for some home owners to remedy mistakes.
- The proportion of owner-occupied dwellings is currently 68%, based on the 2016 Census results, and ownership was assumed to remain constant at that rate.
- Assumed growth in the number of dwellings in Western Australia was consistent with assumptions used elsewhere in our modelling: 1.7% per annum, based on the growth in housing stock between the 2011 and 2016 censuses.
- The proportion of taps that are mixers and therefore do not require tap washers to be replaced is on average around 40% over the period of the analysis.

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[54] Industry estimates indicate that replacement intervals for tap washers average 7–10 years for the most part. However, taps can begin to leak after as little as 12 months due to the tap washer needing replacement. The period depends on the quality of the water, tap usage and the type of washer used.

[55] Industry estimates indicate replacement intervals for shower heads of 15–20 years. A number of stakeholders commented that the level of calcium in the water and the size of the showerhead holes make a difference to the replacement cycle: higher levels of calcium and smaller holes (common in some water-efficient showerheads) require more frequent replacement.

As in other CBAs conducted for this report, we applied a real discount rate of 7% per annum over a 20-year period.

Table 20: General assumptions, Change D

Item	Unit	Value	Comment
Types of dwellings			
Separate house	*No. of dwellings*	685,824	2016 Census
Semi-detached, row or terrace house, townhouse etc.	*No. of dwellings*	122,562	2016 Census
Flat or apartment	*No. of dwellings*	49,086	2016 Census
Other dwelling	*No. of dwellings*	6,314	2016 Census
Average number of tap washers by dwelling type			
Separate house	*No. per dwelling type*	14	See note (a)
Semi-detached, row or terrace house, townhouse etc.	*No. per dwelling type*	13	See note (a)
Flat or apartment	*No. per dwelling type*	8	See note (a)
Other dwelling	*No. per dwelling type*	8	See note (a)

a Each dwelling type was assumed to have at least one kitchen and bathroom; separate houses were assumed to have an extra bathroom and two external area taps; flats or apartments and other dwellings were assumed to have no external taps.

The true change in costs incurred by owner-occupiers requiring a plumber for minor plumbing work is difficult to estimate because it relies on assumptions about the rate of compliance with the current regulations and the costs of enforcing those regulations in the future.

For Change D, we were asked to consider a base case that reflects relatively high compliance with the current regulations.

Based on anecdotal evidence, compliance under the base case (*with enforcement*) is likely to be much higher than the current level of compliance (*with little enforcement*). Therefore, modelled government costs were increased to reflect the additional resources needed to achieve the higher level of compliance.

The assumed rate at which plumbers are currently engaged (that is, the compliance rate) under the base case (with enforcement) and how that rate changes under Option 1 are summarised in Table 21. The balance of the work was assumed to be performed by owner-occupiers. We also assumed that the same compliance rates apply for both tap washers and showerheads.

Table 21: Compliance scenarios used in cost–benefit analysis, Change D

	Base case	Option 1
Proportion of minor plumbing work undertaken by a plumber	80%	20%

We used static assumptions of the rate at which plumbers are engaged, rather than varying the rate over time.

The results of the analysis comparing the base case (with enforcement) to Option 1 are in

Table 22.

Table 22: Present value of costs and benefits, Change D ($2017, real)

	Present value, $ million
Tap washers	
Change in plumbing costs	$322.19
Change in DIY costs	–$99.42
Net change in costs	$222.77
Showerheads	
Change in plumbing costs	$63.29
Change in DIY costs	–$15.87
Net change in costs	$47.42
Change in government costs	–$3.40
Total net change in costs	**$266.79**

3.5.3 Affected stakeholders

The main impacts from Change D are to owner-occupiers, who have more choice and lower costs, and to plumbers, who do less minor plumbing work.

Under the base case (with enforcement), the plumbing industry is expected to see a fall in the amount of minor plumbing work, valued at around $385 million (across both showerheads and tap washers), over the period of the study. This cost also represents a saving to owner-occupiers, who would net this saving off against increased DIY costs, which are estimated to be increase by around $115 million (present value, $2017) over the 20-year period.

Health and safety impacts—particularly if the scope of the minor plumbing work is less well defined—were raised as a point of discussion in a number of preliminary discussions with stakeholders. For this change, Marsden Jacob has not sought to quantify or assess those risks on the basis that:

- the requirement to meet applicable technical standards will continue, even if the minor plumbing work is not done by a plumber
- limited information has been uncovered on incidents related to noncompliant tap washer and showerhead replacements.

Government costs for compliance and enforcement activities are not expected to change with the reform option; however, they are expected to fall compared to the base case (with enforcement) because the additional enforcement is no longer required. The avoided government costs are

estimated to be just under $4 million (present value, over the 20-year period) and account for assumed additional inspector labour costs under the base case with enforcement.

As with other changes analysed in this report, media and communication costs for this change will shared across the reform package and so are not itemised separately here.

3.5.4 Recommendations and other findings

The significant benefit results of the CBA for Change D are driven mainly by assumptions about enforcement costs and compliance rates in the base case. Feedback from industry and our own experience suggest that the real compliance rates in the absence of changes to the current enforcement regime, and therefore the impacts from the change, are likely to be significantly less than those modelled.

We have not identified significant costs associated with Change D and have not found evidence to suggest that there are or would be significant public health risks if owner-occupiers change tap washers and showerheads in their homes.

As long as the definition of plumbing work is tightly worded in the way outlined for Option 1, we recommend that the reform option be adopted. Consistent with our recommendations in relation to Change C for backflow prevention devices and thermostatic mixing valves, it would be prudent to specify, as in the New South Wales and Victorian definitions, that the repair of those devices is not considered minor plumbing work.

3.6 Change E: Impose a duty of care on owners of complex sites

Some elements of plumbing systems need maintenance and regular testing to ensure that they are working well. While provisions exist in water service provider legislation to ensure that property owners maintain and regularly test systems, there is a gap in current plumbing legislation coverage for plumbing within a property boundary (i.e. downstream from the connection point).

Provisions requiring the adequate maintenance of plumbing services, installations and devices for communal residential properties are loosely covered in the Building Regulations 2012.

Oversight and monitoring of devices do not appear to be well defined. Anecdotal evidence suggests that risks from non-maintenance increase as devices age, in the absence of monitoring and compliance.

ACIL Allen suggested that, if its interpretation of current definitions of fixtures and devices that are beyond a meter is correct, backflow prevention devices are excluded from the regulatory definition of plumbing.[56]

Backflow prevention devices are one of two examples of elements of the plumbing system that require maintenance and regular testing to ensure that they are working well, and also pose a potential risk to individuals and the community if they are not maintained. The other example identified by the Building Commission is thermostatic regulators (or thermostatic mixing valves).

Both devices play an important role in preventing or minimising risk to human health and wellbeing:

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[56] ACIL Allen Consulting, *Review of plumbing regulations in WA*, p. 47.

- Backflow prevention devices, when maintained and working property, trap water that begins to flow the wrong way, preventing potentially contaminated water from affecting the quality and safety of the water supply.
- Thermostatic mixing valves blend hot water with cold water to ensure constant, safe shower and bath outlet temperatures to prevent scalding.

Backflow prevention devices

Containment backflow prevention devices are required to be installed at the property boundary at the main water supply connection point. Individual and zone devices are installed within property boundaries where backflow hazards are identified. This is common at sites where there are multiple residential units within the site.

The *Water Services Act 2012* and Water Services Regulations 2013 provide water service providers with powers to obligate owners to install, test and maintain backflow devices. However, the service provider's focus is on boundary devices, leaving internal devices unregulated.

Thermostatic mixing valves

Thermostatic mixing valves are used to regulate temperature and are installed where heated water is distributed. The devices usually contain non-return valves, line strainers and a means of isolating both cold and heated water inlets as an integral part of the device. This provides a means of testing the thermal shutdown of the device. Thermal shutdown occurs if there is a loss of cold water supply but the heated water is still available: the valve shuts off the supply until the cold-water supply is reinstated. For this reason, thermostatic mixing valves are commonly used in hospitals, schools and aged-care facilities. They are required to be tested annually to ensure their correct operation.[57] Thermostatic mixing valves are ideally located as close as possible to the outlet in order to maintain a higher water temperature in the system, thereby reducing the risk of bacterial growth.[58]

Where these devices fail or have not been replaced at the end of their lives, significant temperature fluctuations and the delivery of scalding hot water can occur. For most people, the consequences of a failure may be managed and harm minimised, but children, the elderly and people with disabilities may be less able to avoid harm in the event of failure. As outlined below, the technical standards recognise this risk, set limits on the temperature of water delivered, and require the devices to be maintained and replaced at recommended intervals.

3.6.1 Options for assessment

Change E involves imposing a duty of care and requirements on owners of complex sites by requiring owners of specific buildings to test and maintain plumbing safety devices. This change is slightly different from the other changes assessed in this report, in that it considers introducing requirements on stakeholders who are not plumbers or plumbing businesses.

The reform option was assessed for two example devices – backflow prevention devices and thermostatic mixing valves. The options assessed were as follows:

- **Base case:** No change.

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[57] Australian Building Code Board, 2015, *Plumbing Code development research report: warm water systems*, p. 21.

[58] Australian Building Code Board, 2015, *Plumbing Code development research report: warm water systems*, p. 7.

- **Option 1:** Introduce a head of power to impose a duty of care on owners of prescribed properties to test and maintain backflow prevention devices and thermostatic mixing valves. It is recognised that this power could also be applied to other devices.

Under Option 1, a duty of care is imposed on property owners and managers to ensure that essential plumbing services, installations and devices, such as backflow prevention devices and thermostatic mixing valves, are adequately maintained. They are required to undertake maintenance as needed to ensure the safe operation of the devices, including keeping records of maintenance and testing. The relevant regulatory authority has the power to request evidence that maintenance and testing are being undertaken.

Similarly to Change C, reforms under Option 1 for Change E would be scoped to cover property types where a risk of harm to third parties or contamination is greatest, but be limited to ensure that the reform does not impose an unnecessary cost burden where risks are low.

For **backflow prevention devices**, prescribed properties will extend to buildings that may be used by third parties (other than the owner), such as employees or members of the public. Similarly to Change C, it is proposed to use a definition from the *Building Act 2011* to define coverage:

> *… apply to a building or an incidental structure …*
>
> *(d) that is, or is proposed to be, a residential facility or a recreational facility; or*
>
> *(e) that members of the public normally use; or*
>
> *(f) to which members of the public are permitted access.*

For **thermostatic mixing valves**, prescribed properties will include aged-care facilities, health-care facilities, childcare centres, schools and disability service residential facilities. The proposed scope of coverage for thermostatic mixing valves is consistent with Section 1.9.2 of AS/NZS 3500.4, which specifies the standards for delivery temperatures for sanitary fixtures and therefore provides an appropriate reference scope for this. This standard sets temperature limits with reference to a subset of more vulnerable groups in society:

> *All new heated water installations shall deliver heated water not exceeding*
>
> *(a) 45°C at the outlet of sanitary fixtures used primarily for personal hygiene purposes for the aged, the sick, children or people with disabilities in healthcare[59] and aged care buildings[60], early childhood centres, primary and secondary schools and nursing homes or similar facilities for the aged, the sick, children or people with disabilities; and*
>
> *(b) 50°C at the outlet of sanitary fixtures used primarily for personal hygiene purposes for all other situations.*

The notes section of this standard provides the following explanation of the risk being covered:

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[59] For Australia, 'health-care building' means a building whose occupants or patients undergoing medical treatment generally need physical assistance to evacuate the building during an emergency. Such buildings include public or private hospitals; nursing homes or similar facilities for sick or disabled people needing full-time care; and clinics, day surgery or procedure units where the effects of the predominant treatment administered involve patients becoming non-ambulatory and requiring supervised medical care on the premises for some time after the treatment.

[60] For Australia, 'aged-care building' means a building for the residential accommodation of aged people who, due to varying degrees of incapacity associated with the ageing process, are provided with personal care services and 24-hour staff assistance to evacuate the building during an emergency.

Temperature limits are required to minimize the risk of scalding. At greatest risk from scalding are children, the aged, the sick and people with disabilities, particularly those in institutional care.

Implementation of compliance monitoring

With the introduction of regulatory oversight for ongoing maintenance and testing, a number of enforcement options can be considered. For backflow devices and thermostatic mixing valves, they range from maintaining an active database and informing owners of when maintenance or tests are required to the reactive use of powers, whereby proof may only be required under audit situations or on request.

Whether the relevant authority monitors the new regulations actively or passively should remain an open question. This allows an assessment of the risks compared to the regulatory burden of setting up more comprehensive or proactive compliance systems.

Our CBA assumed a reactive, lower cost approach, in which proof of appropriate testing and maintenance would be required only in audit situations or upon request by the relevant regulatory authority.

We note that the effectiveness of penalties or infringements introduced to align with existing compliance enforcement processes and the level of those penalties have not been analysed. We assume that infringement notices and penalties that align within the current scope of the Act would be implemented.

3.6.2 Alignment with other jurisdictions

Reform under Option 1 would bring Western Australian regulations into alignment with a number of best practice regulations in other Australian jurisdictions.

Driven by a number of incidents in aged-care facilities, Queensland has the most stringent testing and maintenance requirements for backflow prevention devices. In accordance with section 117(2)(c) of the *Plumbing and Drainage Act 2002* and sections 36 to 38 of the Standard Plumbing and Drainage Regulation 2003, property owners are responsible for appropriate installation and ongoing testing of backflow prevention devices. Local government has a role in compliance and monitoring oversight under the relevant sections of the Act and regulations. All backflow prevention devices are required to be registered with the local government; all testable devices are to be tested regularly and the test results are to be forwarded to the council.

The testing requirements for thermostatic mixing valves in all Australian jurisdictions were recently summarised by the Australian Building Codes Board as part of its *Plumbing Code development research report*; its findings are replicated in Table 23. While guidance or good practice technical information is available in most states, only New South Wales appears to have legislated the requirements. That legislation was based on Australian Building Code Board research in 2015.

Table 23: States' and territories' testing requirements for thermostatic mixing valves

State / territory	Testing requirements	Source
Australian Capital Territory	No information found.	n.a.
New South Wales	The Public Health Act, the Public Health Regulation 2000 and the NSW Code of Practice for Thermostatic Mixing Valves in Health Care Facilities, AS 4032.3 as well as any manufacturers' published instructions shall be followed in regards to the system design, installation, commissioning, operation, maintenance / service and site management of all warm water and hot water supply systems.	Policy Directive. *Water—Requirements for the provision of cold and heated water*, February 2015
Northern Territory	No information found.	n.a.
Queensland	No information found.	n.a.
South Australia	Temperature controlling devices such as thermostatic mixing valves or tempering valves should be regularly serviced in accordance with the manufacturer's instructions and AS 4032 and, in any case, at least every 12 months.	*Guidelines for the control of legionella*, 2013
Tasmania	The owner of a warm water system that uses thermostatic mixing devices must ensure that the warm water system is maintained in accordance with the requirements of AS/NZS 4032:1998.	*Guidelines for the control of legionella in regulated systems*, 2012
Victoria	It is a requirement of AS/NZS 3500.4 that thermostatic mixing valves 'be inspected periodically to ensure proper operation'. The Victorian Building Authority recommends that thermostatic mixing valves are inspected and serviced annually in accordance with AS 4032.3.	Technical solution sheet 6.11, 2014
Western Australia	Temperature control devices require routine maintenance and performance testing. Information on maintenance can be found in AS 4032.2.	*Technical note—Water temperature*, 2010

Source: Australian Building Codes Board, *Plumbing Code development research report: warm water systems*, 2015, Table 4, page 30.

3.6.3 Threshold analysis

To assess the impacts of imposing a duty of care on owners of complex sites, the two examples—backflow devices within a property boundary and thermostatic mixing devices at prescribed sites—were modelled individually.

In each case, a threshold analysis was used to assess the quantum of benefits that would justify the cost impacts.

Key assumptions underpinning the analysis of costs for each type of device are summarised in Table 24. Key points to note are as follows:

- The number of existing backflow prevention devices includes only backflow devices that are testable in accordance with the plumbing standards (simple back-syphon and back-pressure devices were not considered part of the scope).

- The number of testable backflow devices was estimated to be around 45,000, based on discussions with stakeholders. The assumed number of new devices per year was also derived from those conversations.
- The number of thermostatic mixing valves in use was estimated based largely on the number of hospital, aged-care and disability care beds in Western Australia. Recent evidence from the Perth Royal Children's Hospital indicates that there is close to a 1:1 ratio of thermostatic mixing valves to hospital beds. We assumed that ratio is slightly lower for aged-care and disability-care facilities and adjusted for small numbers of thermostatic mixing valves that are installed in other properties, including schools, childcare centres and disability hostel accommodation.
- The growth in the number of thermostatic mixing valves was an industry-based estimate of the number of new complex sites that will required thermostatic mixing valves to be installed in future.
- The current rate of compliance with testing regimes was derived from the Building Commission's records and investigations into similar compliance matters. We assumed that compliance improves but remains just below 100% (at 98%) in the reform scenarios, as a strict device-testing register (such as used by the Water Corporation for backflow devices on property boundaries) is not envisioned.
- We assumed that the commercial plumbing rate ($90 per hour) applies when devices are tested and that testing takes on average 30 minutes per device.

Table 24: Key assumptions, Change E

Input	Assumption
Backflow prevention devices	
Existing testable devices (as at 2016)	45,000
Number of new testable devices (per annum)	4,500
Testing frequency	Intervals not exceeding 12 months in accordance with AS 2845.3-2010
Thermostatic mixing valves	
Existing testable devices (as at 2016)	50,000
Number of new testable devices (per annum)	1,000
Testing frequency	Intervals not exceeding 12 months in accordance with AS 4032.3-2004

In addition to the changes in plumbing costs, it is expected that government costs will increase to reflect new compliance and enforcement activities.

Table 25 summarises the changes in all cost impacts, including additional government costs.

We estimate that the reform to impose a duty of care on owners of complex sites, as expressed by modelling for changed to backflow prevention devices and thermostatic mixing valves, will result in $39.86 million in additional costs.

Table 25: Net cost impacts and threshold analysis, backflow prevention devices and thermostatic mixing valves ($2017, millions)

	Present value ($ million)
Change in costs—backflow prevention devices	
Increase in compliance testing costs	–$34.68
Additional Government costs	–$0.78
Total net costs / avoided incident costs (i.e. benefits) required to justify changed costs	**–$35.45**
Change in costs—thermostatic mixing valves	
Increase in compliance testing costs	–$3.51
Additional government costs	–$0.90
Total net costs / avoided incident costs (i.e. benefits) required to justify changed costs	**–$4.41**

The additional costs are expected to result in the delivery of a number of benefits, by far the most of which are avoided risks to human health.

For backflow devices, the main avoided health risks are diseases arising from the contamination of potable water services and disease and disability as a result of metallic or other chemical contamination from plumbing infrastructure.

For thermostatic mixing valves, the primary avoided risks are scalding from poorly controlled heated water and disease and disability as a result of metallic or other chemical contamination from plumbing infrastructure.

Table 26: Threshold number of deaths that need to be avoided to justify the reform

Number of deaths that need to be avoided to justify expenditure	Backflow prevention devices	Thermostatic mixing valves
Total deaths (over 20-year period)	8.08	1.00
Average deaths per year	0.40	0.05

3.6.4 Recommendations and other findings

It is not clear that the threshold for backflow prevention devices (0.4 lives per annum or one life every 2.4 years) would be reached. Stakeholder feedback may help to determine whether this reform should be implemented.

In contrast, it appears likely that requiring the maintenance and testing of thermostatic mixing valves would save at least one life over the 20-year period (or 0.05 lives per annum). Therefore, this reform should be implemented.

3.7 Change F: Introduce a business licence

Under the Plumbing Regulations, requirements and obligations are linked to specified licences and permits. Regulation 14 states:

> ***14 Only natural persons can hold licence or permit***
>
> *A licence or permit can only be held by a natural person.*

Under the current regime, only individuals within a plumbing business who hold a licence to authorise and oversee plumbing work (that is, plumbing contractor's licence holders) are captured by Regulation 14. While other types of companies and corporate structures exist in the industry, they are omitted from the coverage of the legislation.

The current arrangements mean that that the liability for running a plumbing business rests with the person in the business under whose contractor's licence works are being completed. If that licensed plumber leaves the business, the obligations and responsibilities for plumbing works undertaken while they were at the business remain with the plumber, and not the business.

The limitation on licences being held only by natural persons means that companies operating plumbing businesses are not currently captured by the legislation. Issues that have been raised in relation to this arrangement include the following:

- There is a disconnection between the entity that the customer thinks they are hiring (and have ongoing warranties with in relation to the work) and the ongoing responsibility and warranty arrangement. This has the potential to cause confusion where problems arise within the current six-year warranty period but after the responsible plumber becomes unavailable (for example, moves interstate, retires, dies or otherwise leaves the industry or business, without regard to ongoing obligations).
- There is a potential misalignment of accountability and responsibility in which the company or business structure has limited responsibility and the licensed plumber may be held responsible for a significant portion of the business's operations.
- The potential size of plumbing businesses may be limited due to the need for an individual to be fully accountable and responsible for a significant portion of business operations.

Compliance with the current requirements is likely to be relatively high; however, the current requirements are likely to have driven a range of 'workarounds' in the industry that might not be transparent, fair or efficient from a customer's perspective.

3.7.1 Options for assessment

The two options considered were:

1. **Base case**: No change.
2. **Option 1:** Introduce a business licence for individuals, partnership and companies that intend to trade as plumbers and require businesses holding that licence to have a nominated licensed plumbing contractor as the plumbing practitioner to oversee plumbing work.

The proposed reform will not change the obligation for a licensed plumbing contractor to be responsible for the technical plumbing work being carried out by the business. However, it will allow other aspects of the business to be connected to a company, partnership or other defined business structure.

The primary relationship in plumbing contracts can then be between the licensed business and the customer, rather than between the particular licensed plumbing contractor performing the work. 'Make-good' or other liabilities associated with substandard or faulty work would then flow through to (and be retained by) the plumbing business. This relationship is more transparent for the customer. Of course, this should be distinguished from the rights of the company in relation to liabilities arising due to particular negligence on the part of the plumber.

3.7.2 Alignment with other industries and jurisdictions

Alignment with other industries in Western Australia

Western Australia's limiting of plumbing permits and licences to natural persons differs from provisions applicable in the building and electricity industries in the state, but aligns with arrangements for gasfitters.

The following provisions apply in the **building industry**:

- *Practitioner registration* is for individuals. A person holding this licence is allowed to be the nominated supervisor of a registered building contractor but may not provide building services directly to another person.
- *Contractor registration* is for individuals, partnerships and companies that intend to trade as builders. This registration allows a business to provide services as a builder for work that requires a building permit, has a value of $20,000 or more and is located within the area of the Building Services Board's jurisdiction.

Building companies are required to have a nominated licensed building contractor as the building practitioner. Although that individual may not undertake all work, they are responsible for the technical compliance of the work.

Electricians

The requirements for holding an electrical contractor's licence in Western Australia are stated in Regulation 36 of the Electricity (Licensing) Regulations 1991.[61]

That regulation allows an electrical contractor's licence to be issued to a sole trader, a firm (partnership) or a body corporate (Australian private company, Australian public company, other incorporated entity or other unincorporated entity).[62] Note that the regulations do not provide for the issue of a licence to a trust (because a trust is not a legal entity).

The regulations also outline that an applicant, or a person in the employ of the applicant, must hold a current Western Australian electrician's licence. Electrical work can be done only by licensed electricians, but the definitions ensure that electrical companies can be set up and are covered under state legislation for this industry.

Gasfitters

There are more than 6,000 licensed gasfitters in Western Australia. Suitably qualified gasfitters hold a permit, a certificate of competence or, in some cases, a gasfitting authorisation.

Authorisations are issued by EnergySafety to a person to do prescribed gasfitting work or supervise other people performing that work. Similarly to the situation in plumbing, authorisations are limited in their scope. The *Gasfitting authorisation guidelines and requirements* prepared by EnergySafety state: 'Gasfitting Authorisations are limited in their scope, they are not issued to a company, they are issued to an individual who works for a company.'[63]

Section 12 of the Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999 limits the issuing of permits and authorisations to qualified applicants:

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61 Electricity (Licensing) Regulations 1991, online.

62 Department of Commerce, *Electrical contractor's licence application*, 9 November 2016, online.

63 Department of Commerce, *Gasfitting authorisation guidelines and requirements*, prepared by EnergySafety, November 2011, p. 5, online.

(1) The Director may issue a permit or an authorisation to an applicant to carry out the gasfitting specified in the permit or authorisation if the Director is satisfied that the applicant

(a) has adequate theoretical and practical knowledge and adequate skills, to carry out the gasfitting;

(b) has an adequate knowledge of the Act and these regulations; and

(c) is otherwise a fit and proper person to carry out the gasfitting.

Alignment with other jurisdictions

The limits on plumbing licensing and permits in Western Australia also contrast with provisions in other some other Australian states and the arrangements envisioned when a National Occupational Licensing Scheme was being considered.

Table 27 summarises the arrangements in New South Wales, Victoria and South Australia.

Table 27: Requirements in New South Wales, South Australia and Victoria

State	Types of licence available
New South Wales	NSW Fair Trading licenses all builders and tradespeople who carry out work in the residential building industry in New South Wales, including plumbers, under the *Home Building Act 1989*: ▪ Individuals, partnerships or corporations contracting to do residential building work, where the labour and materials are worth more than $1,000, or specialist work (irrespective of whether it is residential building work), must hold a contractor licence under the Act. ▪ Individuals must hold a contractor licence or must be an employee of a partnership or corporation or a partner or officer of a partnership or corporation that holds a contractor licence. Where an individual is the employee, partner or officer of a partnership or corporation that holds a contractor licence, and is not the holder of a licence in his or her own capacity, then the individual must be supervised by someone who is licensed.[a]
South Australia	As well as a 'natural person', a body corporate can be licensed in South Australia under section 9 of the *Plumbers, Gas Fitters and Electricians Act 1995*.
Victoria	In Victoria, licences to undertake plumbing work appear to be limited to natural persons. *To do plumbing work in Victoria, you must be one of the following:* ▪ *licensed by the VBA* ▪ *registered by the VBA (or have provisional registration) and working under the supervision of a licensed plumbing practitioner, OR* ▪ *in training under the supervision of a licensed plumbing practitioner.*[b] *To be licensed to carry out a class of plumbing work, you must:* ▪ *be eligible for registration in that class of plumbing, AND* ▪ *undergo an examination of the competencies required to be licensed in that class. To pass this exam, you may need to undertake training at a registered training organisation.* *You must also provide the VBA with a current Certificate of Currency as evidence of your insurance cover.*[c]

a Minter Ellison, 'Building industry regulation: New South Wales', *Construction Law Made Easy*, last updated 10 July 2014, online.

b Victorian Building Authority, *Plumbing registration and licences*, last updated 5 May 2017, online.

c Victorian Building Authority, *Plumbing licence*, last updated 2 June 2017, online.

National Occupational Licensing Scheme

Although the National Occupational Licensing Scheme was abandoned following a Council of Australian Governments meeting on 13 December 2013,[64] the framework for licence types envisioned for the scheme is a useful reference structure. The preferred option for plumbing and gasfitting licensing in the Decision RIS included a 'three tier' approach.

64 Council of Australian Governments, *COAG meeting communiqué, 13 December 2013*, online.

The tiers were:

- Contractor
- Licensed plumber
- Licensed tradesperson.

Under this option, a contractor licence holder would be permitted to carry on a plumbing business and, while they might be a licensed plumber, that was not necessary. That is, a contractor could be a company or a natural person who is not a plumber. A licensed plumber would be authorised to work without supervision but could not carry on a plumbing business without a contractor's licence, and a licensed tradesperson could work only under the supervision of a licensed plumber.

3.7.3 Cost–benefit analysis

The introduction of a business licence is not expected to alter the number of any other licences; however, a proportion of current and future plumbing contractor's licence holders are expected to take up business licences.

The proportion of plumbing contractor's licence holders who are actively running plumbing businesses is estimated to be less than 50%. Of those, some are operating 'one-man' or very small businesses (with three or fewer employees) and are unlikely to see advantages in taking up the business licence. These small business would continue to operate with the existing conditions, under which with all responsibilities (technical and financial) are linked to the natural person who is the licensed plumbing contractor.

Medium-sized and large plumbing businesses and a number of building-type companies that regularly engage plumbers are expected to take up the business licence.

The number of business licences that would be taken up is difficult to estimate. Statistics from the Australian Bureau of Statistics indicate that there were approximately 2,845 plumbing services businesses in Western Australia in June 2016. Of those:

- 1,674 were non-employing businesses
- 1,133 had between 1 and 19 employees
- 35 had between 20 and 199 employees
- none had more than 200 employees.[65]

For our modelling, we assumed that just over half of the plumbing services businesses (approximately 600, which equates to around 15% of the number of plumbing contractor's licences currently on issue) will take up business licences.

We also assumed that the rate of growth in business licences will be about half the rate at which plumbing contractor's licenses are currently growing. Plumbing contractor's licence numbers have been growing at an average rate of 4.7% per annum over the past five years, so the assumed rate of growth for business licences was 2.35%.

Table 28 summarises our assumptions on numbers of business licences and other key assumptions used to model the impacts of the introduction of a business licence.

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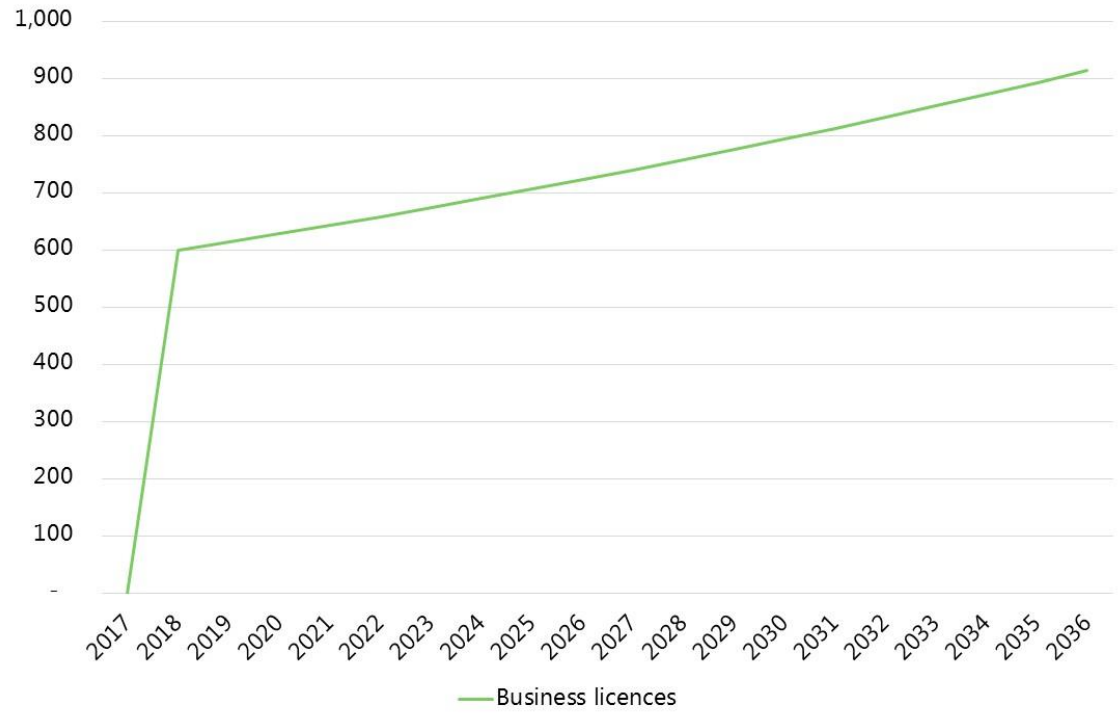
[65] Australian Bureau of Statistics, *Counts of Australian businesses, including entries and exits, Jun 2012 to Jun 2016*, 'Table 1: Businesses by main state by industry class by employment size ranges, June 2015 to June 2016', data cube: Excel spreadsheet, cat. no. 8165.0, latest issue 21 February 2017.

Figure 8 shows forecast changes in the number of business licences. There will be a steep increase in the number of licences in the first year following the introduction of the reform and steady growth thereafter.

Table 28 summarises our assumptions on numbers of business licences and other key assumptions used to model the impacts of the introduction of a business licence.

Figure 8: Modelled number of business licences, 2017 to 2036



Source: Marsden Jacob Associates, 2017.

Table 28: Key assumptions, Change F

Input	Assumption	Comment
Number of licences		
Number of business licences under reform (Year 0)	600	As outlined above.
Growth rate (per annum)	2.35%	Half of the growth rate for plumbing contractor's licences
Fees		
Application fee	$56.40	As per plumbing contractor's licence
Renewal fees	$578.00	As per plumbing contractor's licence
Application and renewal time costs		
Value of time	$55	Licensed plumbing contractor labour rate
Time taken to apply (hours)	10	Applies to new applications only
Time take to renew (hours)	5	Every 3 years

In addition to the above assumptions, government costs are expected to increase to reflect the processing times for this type of licence and general communications about the change. The time taken to process applications is similar to that incurred by businesses in completing the application process and would be conducted by existing Level 5 staff. Shared communications costs were treated in the same manner as for other reforms in this report and are not itemised separately for this change.

No significant upfront costs are expected to be incurred by government in order to introduce the business licence, as the current systems and processes for licensing are able to be modified to cater for a business licence within current budget estimates.

The net present value costs of implementing the requirement are summarised in Table 29.

Table 29: Net present value of costs to industry, Change F ($2017, real)

	Present value of costs ($ million)	Average per entity (per annum)
Costs incurred by licence holders	$1.85	–$226
Additional government costs	$0.61	–$64
Total costs	**$2.46**	**–$289**

Source: Marsden Jacob Associates, 2017.

Impacts, by type of stakeholder

Impacts from Change F will be limited to those businesses that take up the new business licence. Those businesses may include:

- medium-sized and larger plumbing businesses
- businesses that supervise plumbing (such as kitchen and bathroom specialists)
- building companies.

These businesses will pay application and renewal fees as well as costs associated with the time taken to complete applications and renewals (quantified in Table 29).

The potential beneficiaries of the change are the holders of the business licence (to the extent that the business licence is a preferable arrangement for them), customers and the broader industry. The nature of benefits depends on the manner in which licences are required and the potential responsibilities that attach to the licences. One benefit of the reform could be to address the three issues highlighted at the start of this section by:

- resolving the disconnect between who the customer thinks they are hiring and who has ongoing responsibility for the work
- aligning accountability and responsibility between the business and the plumber overseeing the work
- removing limitations on the potential size of plumbing businesses.

However, Marsden Jacob is unclear about how these benefits would be realised, as we lack details on the proposed reform. *Specifically, it is unclear how the responsibilities and liabilities associated with running a plumbing business and performing plumbing work may change under the reform.*

The current arrangements are flawed, as a customer may be exposed when the licensed plumbing contractor who has done the work dies or otherwise becomes unavailable within the six-year

warranty period. Equally, however, a change to the liabilities attached to a plumbing company might not ensure that the customer is protected, given that businesses can and do shut down. In such circumstances, it is unclear whether the warranty would terminate with the business or transfer back to the licensed plumbing contractor—a result that is equivalent to the current arrangements.

3.7.4 Recommendations and other findings

In the absence of further detail on how liabilities and responsibilities would change between the licensed plumbing contractor currently responsible for overseeing plumbing work and the business entity holding a business licence, Marsden Jacob does not recommend a reform to introduce a business licence.

Our recommendation is based on the fact that costs to the plumbing industry (and specifically to entities that would be required to hold a business licence) will increase as a result of the reform, but the benefits associated with the reform are uncertain.

We note that the current model adopted for the plumbing industry is different from that used in the building and electrical industries in Western Australia and envisioned as part of the National Occupational Licensing Scheme. However (as noted in section 3.7.2), it aligns with the arrangements for gasfitters in the state.

3.8 Change G: Remove requirement for plumbing contractors to undertake business training

Regulation 2 in Schedule 3 of the Plumbing Regulations sets out the requirements for holding a plumbing contractor's licence:

> *The requirements for a plumbing contractor's licence are that the applicant —*
>
> *(a) is the holder of a tradesperson's licence; and*
>
> *(b) holds*
>
> *(i) a statement of competency as a water supply plumber, sanitary plumber or drainer; or*
>
> *(ii) an equivalent Western Australian qualification as determined by the Board.*

Since 2007, the issue of a statement of competency as a water supply plumber, sanitary plumber or drainer has required the completion of a plumbing contractor's licence course. However, the course expired on 31 July 2014, meaning that from that date the course could not be delivered.

The result is that applications for plumbing contractor's licences in Western Australia are all made in accordance with the equivalent Western Australian qualification as determined by the Plumbers Licensing Board and set out in the board's *Plumbers Licensing Board Policy: Requirements to obtain a plumbing contractor's licence*.[66]

The policy sets out the units required by the board to satisfy the requirements for the issue of a contractor's licence. The units currently include three mandatory business units:

- BSBSMB401A Establish legal and risk management for small business requirements

[66] Plumbers Licensing Board Policy—Requirements to obtain a plumbing contractor's licence, 29 May 2017, online.

- CPCPCM4012A Estimate and cost work
- CPCPCM4011A Carry out work-based risk control processes.

The Plumbers Licensing Board policy also notes that the three business units are mandatory regardless of the stream(s) of plumbing work that the applicant is applying for under the plumbing contractor's licence. Applicants are also required to complete at least one stream of out of water supply, drainage and sanitary plumbing in addition to the business units.

The policy was last updated on 28 August 2017 and is next scheduled for review on 1 June 2018.

In its 2013 review, ACIL Allen wrote that: 'As well as having more experience as plumbers than tradespersons, contractors must also complete certain business training to be eligible for their licences.' ACIL Allen suggested that the training was 'a barrier to entry and should be removed'.[67]

3.8.1 Options for assessment

The training requirements for a plumbing contractor's licence include a course to qualify for a statement of competency or an equivalent qualification as determined by the Plumbers Licensing Board. The course, which included three units in business administration, is no longer available.

In its 2013 review, ACIL Allen noted that business training 'does not contribute to the public health of Western Australians'[68] and concluded that the training does not align with the objective of the Plumbing Act. However, there is currently no constraint on the board's discretion in setting the training requirements.

Change G constrains the Plumbers Licensing Board's discretion over training under Schedule 3 of the Plumbing Regulations. The constraint aligns the requirements for training to achieve the objectives of the regulations.

While the Plumbing Act does not currently include objectives, the review by ACIL Allen concluded that the objective of plumbing regulation in Western Australia is:

> *To protect the long term interests and health of Western Australians with respect to the safety of the water supply and wastewater removal system by ensuring that plumbing work is performed in accordance with technical requirements appropriate for available technologies by sufficiently skilled persons.*[69]

This change will have the effect of removing the need for business training for plumbing contractors.

The two options considered for assessment were:

- **Base case:** No change. Maintain the current drafting of the regulations whereby the Plumbers Licensing Board sets the policy for an equivalent course.
- **Option 1:** Constrain the board's discretion in setting training requirements to align with the objectives of the Act.

Note that removing the requirement to complete the course would not prevent some plumbers from choosing to take the course if they consider that it would be valuable.

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67 ACIL Allen Consulting, *Review of plumbing regulations in WA*, p. 52.
68 ACIL Allen Consulting, *Review of plumbing regulations in WA*, p. 52.
69 ACIL Allen Consulting, *Review of plumbing regulations in WA*, pp. 30, 50.

3.8.2 Alignment with other jurisdictions

The reform as recommended by ACIL Allen acknowledges that it is not standard practice in Australia to require business owners in other industries to undergo business training. However, the reform would bring Western Australian regulations out of alignment with regulations for the plumbing industry in other jurisdictions.

Table 30 outlines the current requirements in the states and the Northern Territory.

Table 30: State and Northern Territory requirements for the completion of a business course

State / territory	Requirements for plumber's licence
New South Wales	As part of the plumbing regulatory framework in New South Wales, NSW Fair Trading licenses plumbers and drainers under the *Home Building Act 1989. A*ll plumbing and drainage work must be completed by a person who holds a contractor licence, a qualified supervisor certificate or a tradesperson certificate. Plumbers are not required to complete business units in order to qualify for a contractor licence or supervisor certificate.[a]
Northern Territory	In the Northern Territory, in order to hold an advanced tradesman licence (which allows the licensee to carry out plumbing work and supervise or direct work of others, but not to certify work), a number of competencies need to be met, including three business units equivalent to those required in Western Australia. The competencies required for an advanced tradesman licence are:[b] ▪ two-years post-trade working experience in plumbing / draining gained while holding an unconditional journeyman registration, and ▪ a statement of attainment for required 10 units of competency, including; - CPCPCM4011A—Carry out work-based risk control processes - CPCPCM4012A—Estimate and cost work - BSBSMB401A—Establish legal and risk management requirements of small business In order to certify work, the licensee needs to be registered as a certified plumber and drainer with the Building Practitioners Board.
Queensland	In Queensland, the requirements for a plumber's licence are set out in Schedule 1 of the Plumbing and Drainage Regulation 2003 (current as at 1 July 2016). The regulations allow for the Queensland Building and Construction Commission to oversee the qualification requirements. Currently, drainers, plumbers and gasfitters must all complete three business units equivalent to those required in Western Australia.[c] For example, the requirements for plumbing and drainage are: ▪ successful completion of Certificate III in Plumbing CPC32413 or Certificate III in Plumbing (Mechanical Services) (with sanitary stream completed) CPC32513, plus a number of units from the Certificate IV in Plumbing and Services CPC40912, including: - CPCPCM4011A—Carry out work-based risk control processes - CPCPCM4012A—Estimate and cost work - BSBSMB401—Establish legal and risk management requirements of small business ▪ or successful completion of a course the Commission considers is at least equivalent to the one above.[d]

State / territory	Requirements for plumber's licence
South Australia	In South Australia, an individual or at least one director of a body corporate must meet the business knowledge and experience requirements outlined in *Business criteria contractors: companies and individuals* in order to be granted a contractor's licence (builder, plumber, gasfitter, electrician). Not all applicants are specifically required to undergo business training, but the state's proof of competency processes refer to business units. The applicant must have their competency assessed by a registered training organisation that delivers an approved qualification and then seek recognition of prior learning for that qualification. Individuals who currently hold (or have previously held) a contractor licence under the *Building Work Contractors Act 1995*, the *Plumbers, Gas Fitters and Electricians Act 1995* or the *Security and Investigation Industry Act 1995* authorising them to carry on business as a *sole trader or a sole director*, or *holders of interstate equivalent occupational licences*, may not be required to undergo additional business training to meet the business criteria.[e]
Victoria	In Victoria, the Victorian Building Authority regulates plumbing practitioners, plumbing work and plumbing standards through the *Building Act 1993*. Section 221M (Licensing as a plumber) in the Act allows the authority to determine equivalent qualifications for qualifications based on requirements set out in the regulations. Victoria's Plumbing Regulations 2008 define eight main classes of plumbing work[f] and six specialised classes.[g] In order to obtain a licence for any of the eight main classes of plumbing work, the qualification requirements include three business units:[h] ▪ CPCPCM4011A—Carry out work-based risk control processes ▪ CPCPCM4012A—Estimate and cost work ▪ BSBSMB401A—Establish legal and risk management requirements of small business.
Western Australia	Regulation 2 in Schedule 3 of the Plumbing Regulations sets out the requirements for holding a plumbing contractor's licence. The Plumbers Licensing Board requires nine units that made up the plumbing contractor's licence course at the time of course's expiry on 28 February 2016, to be completed regardless of the stream(s) of plumbing work or any units that supersede the listed mandatory units. Three business units are listed: ▪ BSBSMB401A Establish legal and risk management for small business requirements ▪ CPCPCM4012A Estimate and cost work ▪ CPCPCM4011A Carry out work-based risk control processes.[i]

a New South Wales Government, *Plumbing, draining and gas fitting*, last updated 6 August 2015, online.

b Plumbers and Drainers Licensing Board (Northern Territory), *Licensing and registration*, last updated 3 April 2017, online.

c Queensland Building and Construction Commission, *Approved courses for licences and licence endorsements detailed in the Plumbing and Drainage Regulation 2003 (Qld) licences*, undated, online.

d Queensland Building and Construction Commission, *Plumbing and drainage*, undated, online.

e Consumer and Business Services (South Australia), *Business criteria for contractors: companies and individuals*, May 2017, online. See also Consumer and Business Services (South Australia), *Electronic licence application forms*, 2017, online.

f These classes are drainage, fire protection, gasfitting, irrigation (non-agricultural), mechanical service, roofing (stormwater), sanitary, and water supply.

g The six specialised classes are Type A appliance servicing work, Type A appliance conversion work, Type B gasfitting work, Type B gasfitting advanced work, refrigerated airconditioning work and backflow prevention work. These classes require additional competencies.

h Victorian Building Authority, *Approved competency units*, 2016, online.

i Plumbers Licensing Board Policy—Requirements to obtain a plumbing contractor's licence, 29 May 2017, online.

3.8.3 Cost–benefit analysis

The CBA for Change G was underpinned by a number of general assumptions, as outlined in Table 31. In addition, the analysis assumed the following:

- The number of new plumbing contractor's licences issued per year is a reasonable proxy for those completing training. Not many individuals enrol and do not complete the full qualification, and the number of new licensed plumbing contractors qualified via alternative qualifications (such as after transferring from interstate) is minimal.
- The business units are readily separable from other units or course elements that licence applicants might still be required to take.
- Potential applicants cover their own direct and indirect course costs, and most undertake the units on a full-time basis (meaning that indirect costs are as forgone salary for the period of the course).

Table 31: General assumptions, Change G

Assumption	Value
Number of students	
Number of licensed plumbing contractors (Year 0)	3,577
Growth in licensed plumbing contractors (% per annum)—proxy for number of students training under the base case	4.7%
Course details	
Cost of business unit ($)	$300
Number of business units required	3
Direct cost of business units per qualification ($ per student)	$900
Time away from work[a]	
Estimated lost salary ($ per day)	$310
Number of days per unit	2 days per unit (6 days total)
Estimated lost salary per qualification ($ per student)	1,860

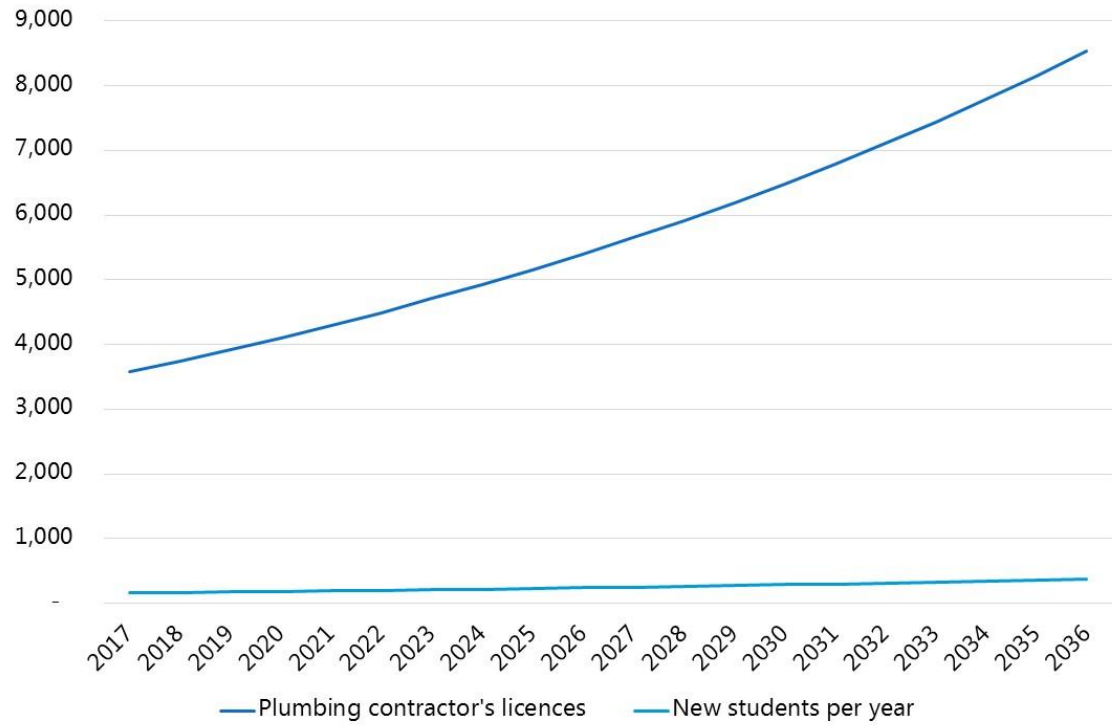
a Assumes course is taken on a full-time basis (during work hours).

Source: Marsden Jacob analysis.

Based on the first assumption listed above (that the rate of new plumbing contractor's licences is a good proxy for the number of students undertaking the business course each year), the change in the number of students undertaking business unit training each year under the base case is shown in

Figure 9.

Figure 9: Number of plumbing contractor's licences and new plumbing contractor's licence students, 2017 to 2036



Source: Marsden Jacob analysis, 2017.

In considering the net costs or benefits of Change G, it is important to recall that fees paid by students to registered training organisations (RTOs) also represent revenue streams to those organisations. To the extent that the RTOs are not earning excessive profits, these amounts are financial transfers within the economy.

The removal of a requirement to undergo business training simply results in a change to that transfer, rather than a change in net economic costs or benefits.

The impact on each stakeholder group is outlined in Table 32. Net present value impacts are included where impacts have been quantified. The net value in the bottom row is the net benefit to the Western Australian economy (net of transfers between stakeholder groups).

Table 32: Affected stakeholders, Change G

	Present value, $2017 (millions)
Direct cost of business courses (plumbing contractor's licence applicants)	$1.65
Value of days of work missed (plumbing contractor's licence applicants)	$3.96
Direct cost of business courses (course providers)	–$1.65
Net benefit (cost)	**$3.96**

3.8.4 Affected stakeholders

As outlined in Table 32, the main beneficiaries of the reform are potential holders of plumbing contractor's licences (that is, students), who benefit from reduced direct course costs (present value

of $1.65 million) and from no longer forgoing wages during the course (present value of $3.96 million).

Cost impacts are borne by the current suppliers of training courses (RTOs) in the form of reduced revenue. Reduced revenue from courses is directly equivalent to the direct course costs saved by students (present value of $1.65 million). This amount is a transfer between the two stakeholder groups rather than an economic cost or benefit to Western Australia, as both are located within the state.

Other impacts we noted but did not quantify because they are likely to be marginal include:

- *for licence applicants:* the potential benefit from being able to start their own plumbing businesses more easily (and the potential risk of business failure due to a lack of business skills and acumen)[70]
- *for plumbing businesses:* the risk of losing workers if the business training prompts licence applicants to start their own businesses.

3.8.5 Recommendations and other findings

The modelled CBA results indicated a net benefit from the removal of the requirement to undergo business training. However, the results involved relatively small amounts. It was also unclear whether benefits that enable licensed plumbing contractors to better service customers are being delivered through the three business units (consisting of approximately six days of training when courses are taken full time).

Some potential licensed plumbing contractors will look to start their own businesses or to oversee business aspects within a plumbing company that employs them. They may find the course units on establishing legal and risk management for small businesses, estimating and costing work, and carrying out work-based risk control processes provide them with useful skills. Others may never use their contractor's licence in business operations and will find these course units less valuable.

Our review of the course requirements in other jurisdictions suggests that there is a middle ground. In some jurisdictions, such courses are available and may contribute towards a specified certificate or qualification but are not mandatory.

We recommend that the reform be adopted to align the training requirements with the objective of the Act. In adopting the reform, the Plumbers Licensing Board should consider retaining the business course units as optional, non-mandatory contributors to certification.

3.9 Change H: Introduce a requirement for contractors and businesses to hold specific insurances

The ACIL Allen report found that there is currently no requirement for plumbing contractors in Western Australia to carry public indemnity insurance. It proposed that the government introduce a requirement that plumbers carry both public liability and professional indemnity insurance,[71] noting that the requirement to carry indemnity insurance existed in other jurisdictions (specifically, in

[70] We note that six days is a relatively small period of business training, so it is unlikely to dramatically change the staff turnover of plumbing businesses.

[71] ACIL Allen Consulting, *Review of plumbing regulations in WA*, p. 52.

Victoria, where a plumber cannot be licensed or registered unless they carry public liability and indemnity insurance).[72]

Research by Marsden Jacob confirmed that there is no requirement to carry either form of insurance in the Plumbing Regulations; however, many industry participants carry one or both as a general business practice. Our finding supports ACIL Allen's presumption that many plumbers already hold this type of insurance on the basis that holding insurances is likely to be a requirement placed on them by their clients (particularly larger ones).[73]

Public liability insurance and professional indemnity insurance cover different forms of risks. According to AON, a major insurance broker, distinguished them in this way:

- '**Public liability** insurance is designed for professionals who interact with customers or members of the public. It protects against claims of personal injury or property damage that a third party suffers (or claims to have suffered) as a result of your business activities. For example, if someone is injured or their property is damaged while you're providing a service, they may take legal action against you to recover their losses. It covers only claims made by external parties, not those made by your own employees. [74]
- '**Professional indemnity** insurance is designed for professionals who provide advice or services to their customers. It protects against legal costs and claims by third parties for damages arising from acts, omissions or breaches of professional duty in the course of your business. For example, if you do something (or neglect to do something) in the course of your work, and a customer suffers injury or financial loss as a result, they may take legal action against you. Professional indemnity can potentially prevent financial loss in these circumstances.'[75]

The risk to individuals and members of the public of plumbers not holding these forms of insurance arises where claims made against the plumber are upheld and the plumbing contractor (or plumbing business, in the event that a business licence is introduced—see Change F) is financially unable to remedy the damage.

If introduced, the requirement to hold professional indemnity insurance may reasonably be inserted as a licence requirement, such as occurs in Victoria. The relevant regulations in the Western Australian Plumbing Regulations include:

- Regulation 15 (Application for issue of licence or permit), which sets out the information that the Plumbers Licensing Board may require or request in relation to a licence or permit application
- Regulation 17 (Issue of licence or permit), which sets out the conditions under which the board may issue a licence or permit if satisfied
- Schedule 3 (Licence or permit requirements), which sets out the requirements for a plumbing contractor's licence (refer to Regulation 2).

In addition to public liability and professional indemnity insurance, plumbers may also hold other forms of insurance. For example, they may hold product liability insurance to protect against liability associated with products supplied, as well as commercial motor vehicle insurance, and are legally required to hold workers compensation insurance where employees are involved.[76]

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72 ACIL Allen Consulting, *Review of plumbing regulations in WA*, p. D-3A.
73 ACIL Allen Consulting, *Review of plumbing regulations in WA*, p. 52.
74 AON, *Public liability insurance*, 2017, online.
75 AON, *Professional indemnity insurance*, 2017, online.
76 Smart Business Insurance, *Tradies insurance for plumbers*, online.

3.9.1 Options for assessment

The two options considered for assessment were:

- **Base case:** Do nothing; have no specific requirement to hold professional indemnity insurance.
- **Option 1:** Introduce a requirement for insurance(s) to be held as a licence condition.

Option 1 does not specify for which licence the requirement may be made a condition. Under the current circumstances, the condition might be introduced for contractor's licences; however, if Change F (the introduction of a business licence) goes ahead, the condition may be best introduced as a condition for that licence.

3.9.2 Comparison with other jurisdictions

Insurances are required to be held by plumbing contractors (and responsible persons within plumbing businesses) in both New South Wales and Victoria (Table 33).

Table 33: Requirements in New South Wales and Victoria

State	Types of licence available
New South Wales	For licensed contractors, there are mandatory requirements in regard to insurance under the *Home Building Act 1989* (which covers all tradespeople, including plumbers). All applicants for building work licence classes must provide as evidence from an approved insurance agent (RBUE or QBE) of Self Insurance Corporation (SiCorp) a current certificate of eligibility to obtain insurance under the Home Building Compensation Fund. The certificate of eligibility must be in the exact name of the applicant. Alternatively, applicants may apply to be exempt from needing insurance under the fund.[a]
Victoria	The required insurance is a minimum level of insurance that has been prescribed by the Victorian Government in two separate ministerial orders; however, licensed persons may elect to take a greater level of insurance than that prescribed:[b] ▪ Ministerial order 'Licensed Plumbers General Insurance Order' signed by the minister on 20 June 2002 prescribes the minimum insurance required by all licensed persons (except those licensed in Type B Gasfitting). ▪ Ministerial order 'Licensed Plumbers (Type B Gasfitting work) Insurance Order' signed by the minister on 20 June 2002 prescribes the minimum insurance required by all persons who are licensed in Type B Gasfitting. Before the issue of a plumbing licence, regulators are instructed that they must receive a certificate of currency (not offers of insurance or other insurance documents) that meet specified requirements, including being in the name of the *person* being insured (i.e. not just a company name).

a Fair Trading, *Applying for a licence or certificate*, New South Wales Government, last updated 27 July 2016, online.

b Victorian Building Authority, *Plumbing insurance requirements*, last updated 2 June 2017, online.

3.9.3 Cost–benefit analysis

The main stakeholder groups affected by the introduction of a requirement to hold professional indemnity insurance are licensed plumbing contractors (under current licence arrangements) and individuals and members of the public. Insurance brokers and agencies are also affected.

Licensed plumbing contractors who do not already hold insurance will have to take up this form of insurance on an ongoing basis, resulting in a small up-front 'search cost' to find the appropriate insurance provider and levels of excess, and an increase in annual ongoing costs.

Current quotes for relevant insurances from Biz Cover are as follows:

- For public liability insurance with a $5 million level of cover and a $500 excess: from around $475 through to $1,300. Stakeholder feedback confirmed that this estimate range reflected the likely costs to plumbing businesses; most estimated the cost to be around $600 per annum.
- For professional indemnity insurance with a $1 million level of cover and $1,000 excess: around $1,200 per annum. Industry feedback suggested that, where professional indemnity insurance was held, it was held for a greater amount than this. Therefore, our modelling has assumed a cost of around $2,000 per annum.

Based on these cost levels, Table 34 outlines industry cost impacts for the first year following the introduction of the requirement.

Table 34: Core assumptions, Change H

Assumption	Value
Number of licensed plumbing contractors (Year 0)	3,577
Proportion of licensed plumbing contractors who are running a business (%)	35%
Growth in plumbing business (% per annum)	2.35%
Public liability insurance	
Annual cost of public liability insurance ($2017, real)	$600
Proportion of contractors *without* public liability insurance (Year 0)	10%
Proportion of businesses *without* public liability insurance (after reform)	0%
Professional indemnity insurance	
Annual cost of professional indemnity insurance ($2017, real)	$2,000
Proportion of businesses *without* professional indemnity insurance (Year 0)	75%
Proportion of businesses *without* professional indemnity insurance (after reform)	0%

Source: Marsden Jacob analysis.

Each of the key inputs in this analysis were estimated following market research and stakeholder discussions.

In modelling the impacts over time, the following assumptions also applied:

- Under the base case (in the absence of reform), the proportion of uninsured contractors remains constant over time at 10% for public liability insurance and 75% for professional indemnity insurance.
- After reform to require public liability insurance, the noncompliance rate begins at 10% and falls to 0% at a rate of 75% per annum over the period of the study.

- After reform to require professional indemnity insurance, the noncompliance rate begins at 75% and falls to 0% at a rate of 75% per annum over the period of the study.
- Up-front search costs are minimal (around $150) and occur only once for each additional licensed plumber who would be uninsured but for the reform (that is, if both types of insurance are required, the search cost remains constant and does not double).

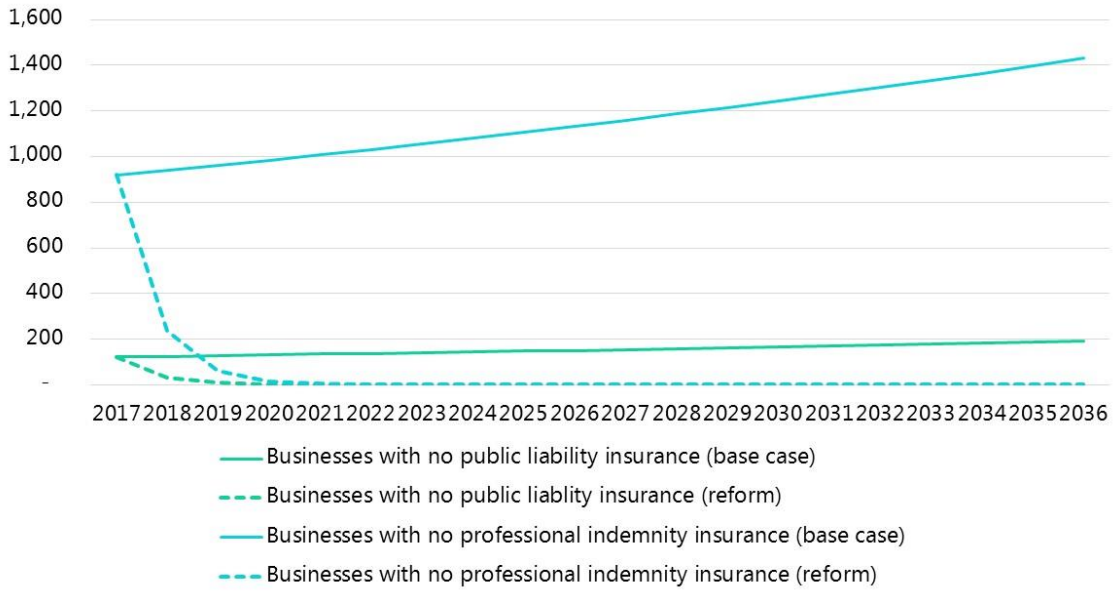
- Marginal costs incurred to demonstrate compliance with the requirement on application for a licence and at intervals as insurances expire are minimal (an average of $25 per annum) and are applied to both current insurance holders and the proportion of contractors who would not otherwise hold insurance. Note that the inclusion an ongoing burden of proof would be likely to increase compliance rates compared to simply requiring proof upon applying for a licence.
- For modelling purposes, the marginal increase in licence application costs was shown with the up-front search costs, as it was assumed that the two costs would be incurred at the same time for a number of contractors.
- Of insurance premiums collected, 90% is returned to the industry via claims paid.
- Insurance companies are all assumed to be located outside of Western Australia, so any difference between premiums collected and claims paid by insurance companies is a net cost to the Western Australian economy.

The analysis was conducted over a 20-year period on the basis that the requirements may be revised at the end of that period. We also used a standard discount rate of 7% per annum, consistent with the rate used for other CBAs in this report.

The changes in costs incurred by the plumbing industry for the two forms of insurance, if they are considered individually, are shown in Figure 10.

Table 35 summarises the net present value costs of implementing the requirement.

Figure 10: Changes in number of uninsured plumbing businesses, 2016–2036



Source: Marsden Jacob Associates, 2017.

Table 35: Present value of costs to industry, Change H ($2017, real)

	Present value of costs ($ millions)	Average annualised cost (per annum)
Require public liability insurance	–$1.25	–$62,493
Require professional indemnity insurance	–$3.24	–$162,095
Require both public liability and professional indemnity insurances[a]	**–$3.33**	**–$166,590**

a The cost to the plumbing industry of requiring both forms of insurance is slightly less than the sum of the costs of requiring each insurance individually because proof of compliance costs and search and licence application costs are reduced.

Source: Marsden Jacob Associates, 2017.

The costs are largely driven by the actual cost of insurance rather than by proof of compliance costs or search and licence application costs. From an economic perspective, if the insurers and underwriters are based in Western Australia, insurance costs to the plumbing industry could be considered to be a transfer rather than a true economic cost, as the costs also represent revenue to the insurance industry.

Costs associated with insurance were based on current quotes for insurance available in the market. However, our estimates have not taken into account the potential impacts of the reform on the price of insurance; nor have we considered the 'moral hazard' problem in the insurance market where the plumbing industry is concerned.

Moral hazard exists in insurance markets because the people who least need insurance (those who are professionally the most diligent) do not take it up and those who are most likely to need the insurance do so. Insurance companies face a moral hazard because they are unable to distinguish the 'lemons' (the less diligent or riskier actors) from normal or less risky buyers of insurance. Two outcomes result:

- The cost of insurance may be higher if holding insurance is not required.
- The number and types of claims currently made may reflect the self-selection bias in the market.

Benefits

While the costs to the plumbing industry were quantified, the benefits to the industry were less easy to quantify. Similarly to the benefits to individuals and members of the public (discussed below), the benefits from holding insurance arise only when an incident or oversight occurs and the licensed plumbing contractor is unable to cover the damage costs in the absence of insurance.

Licensed plumbing contractors who take up insurance receive a benefit from the insurance, as they are better protected in the event that an insurable incident does occur. Those benefits may extend to preventing the contractor from going out of business following an incident, and are likely to bring some reputational benefits if clients are requesting that insurances be held.

Individuals and members of the public are also beneficiaries from changes to require insurance to be held by licensed plumbing contractors. As highlighted above, the benefits arise from being able to claim damages but are difficult to quantify because the timing of insured events affects the

quantum. This could occur where the plumber is not able to 'make good' any damages because they have died, become bankrupt or left the state.

Government costs

For completeness, we noted that the Western Australian Government is not expected to incur any significant costs to implement this reform. No extra staff training or IT system changes are needed to enable staff to check whether the required level of insurance is maintained. The checking of insurances already occurs in relation to building industry licences, and those processes can be modified within the current cost structure to extend them to plumbing.

As with other reforms considered in this report, costs associated with communicating changes to industry are treated holistically across the multiple reforms.

3.9.4 Recommendation and other findings

Overall, making insurance compulsory may be perceived to be adding red tape, as the requirement adds to the cost of running a business but brings limited identifiable benefits.

Our analysis showed that a requirement to hold public liability insurance would have only a limited impact, as that form of insurance is held by almost all plumbers. The net cost of making it compulsory is estimated to be $1.25 million (net present value) over the 20-year period.

In contrast, a requirement to hold professional indemnity insurance would impose significant additional costs to industry. The net cost of making it compulsory is estimated to be $3.24 million (net present value) over the 20-year period. The exact scale of the costs will depend on the detail of the requirement, such as the level of insurance, the excess and limitations.

We note that the requirement to hold insurances would also bring Western Australian regulations into line with New South Wales and Victorian provisions. If this change is pursued, we recommend that the Building Commission investigate an approach that adopts a scaling mechanism or thresholds above which insurances must be held to ensure that smaller businesses are not unduly burdened by insurance premiums for higher levels of cover.

Subject to additional information provided through consultation, we recommend that this reform not be implemented.

4. Combined costs and sensitivity analysis

4.1 Combined costs

In addition to the costs and benefits attributable to individual changes, some costs are pertinent to the whole reform process.

The Building Commission has found that implementing these reforms would require a stakeholder communication campaign. This cost is expected to be relatively flat, irrespective of the number of reforms that are implemented. The cost is estimated at $55,000, as detailed in Table 36.

Table 36: Details of combined costs for implementing reforms

Item	Estimate	Basis for estimate
General communications, planning/ implementation	$25,000	25% of Level 5 annual salary
Website changes etc.	$30,000	Based on costs for two recent campaigns conducted by the Building Commission that included a range of advertising online and in newspapers
Total	**$55,000**	

Source: Estimates provided by the Building Commission, May 2017.

4.2 Sensitivity analysis for changes C through H

We conducted sensitivity analysis for changes C through H.

4.2.1 Changes D, F, G and H

The results of the CBA undertaken for changes D, F, G and H were assessed using net present value, which is the present value of economic benefits delivered by the option less the present value of economic costs incurred.

The net present value measures the expected benefit (or cost) to society of implementing the policy, expressed in monetary terms.

We conducted a sensitivity analysis on the results to determine the effect of altering the assumed discount rate. The results (set out in Table 37) indicate that the analysis is not sensitive to changes in the discount rate.

Table 37: Sensitivity analysis of CBA results (changes D, F, G and H) (net present value, $ million)

Change	Description	Discount rate		
		3%	7%	10%
Change D	Exempt simple plumbing work on own home	$368.31	$266.79	$217.30
Change F	Introduce business licence	–$3.20	–$2.46	-$2.10
Change G	Remove requirement for contractors to undergo business training	$5.67	$3.96	$3.15
Change H	Introduce requirement for contractors and businesses to have public liability and professional indemnity insurance	–$4.73	–$3.33	-$2.65
Shared costs	Government communication costs	–$0.06	–$0.06	-$0.06
Total		**$366.00**	**$264.90**	**$215.64**

Source: Marsden Jacob Associates, 2017.

4.2.2 Changes C and E

The results of the CBA undertaken for changes C and E were assessed using a threshold analysis to determine the number of deaths per year that would need to be avoided to justify the costs.

We conducted a sensitivity analysis on the results to determine the effects of altering the assumed discount rate. The results (set out in Table 38) indicate that the analysis is not sensitive to changes in the discount rate.

As change C-2 delivers a net positive benefit from quantitative analysis, no values for this change are included in the table below.

Table 38: Sensitivity analysis of CBA results (changes C and E) (average avoided deaths per year required to justify reform)

Change	Description	Discount rate		
		3%	7%	10%
Change C-1	Broaden scope of regulated plumbing work to include non-drinking-water services	0.74	1.17	0.42
Change C-2	Broaden scope of regulated plumbing work to include all sources used for drinking water (including unmetered supplies)	n/a	n/a	n/a
Change E-1	Introduce duty of care—backflow prevention devices	0.63	0.40	0.30
Change E-2	Introduce duty of care—thermostatic mixing valves	0.07	0.05	0.04
Total		**1.45**	**1.76**	**0.77**

Source: Marsden Jacob Associates, 2017.

5. Glossary

Term	Definition
Plumbing contractor	A plumbing contractor is a plumber who is licensed to direct and control plumbing tradespeople (including supervising work carried out by an apprentice) and to issue notices and certificates of compliance for plumbing work. All plumbing tradesperson licence holders must operate under the general direction and control of a licensed plumbing contractor.
Plumbers' licences	Plumbers' licences are granted by the Plumbers Licensing Board to suitably qualified individuals. Corporate entities cannot hold a plumber's licence. Five different licences and one type of permit can be issued. All licence holders are authorised to perform plumbing work, but the scope of authorised work varies with each licence. Permit holders can carry out only a very limited range of plumbing tasks.
Plumbing contractor's licence	A plumbing contractor's licence is for individuals who already hold a tradesperson's licence and who intend to direct and control plumbing tradespeople (including supervising work carried out by an apprentice) and issue notices and certificates of compliance for plumbing work. This licence authorises a plumber to work on water supply plumbing, sanitary plumbing and drainage plumbing. To be eligible for a plumbing contractor's licence, a person must already hold a tradesperson's licence and have a statement of competency from a registered training organisation (such as for a water supply plumber, sanitary plumber or drainage plumber). As set out under Change G, the requirements for a plumbing contractor's licence currently include the completion of three business units.
Plumbing tradesperson's licence	A plumbing tradesperson's licence is for individuals who have completed training and obtained qualifications in plumbing. The licence authorises a plumber to work under the general direction and control of a plumbing contractor on water supply plumbing, sanitary plumbing and drainage plumbing. In addition, they are able to supervise authorised work carried out by an apprentice (under the general direction and control of the holder of a plumbing contractor's licence).
Plumbing tradesperson's licence (drainage plumbing)	A plumbing tradesperson's licence (drainage plumbing) is for individuals who have completed training, have qualifications in drainage plumbing and intend to work as a drainage plumber under the general direction and control of a plumbing contractor. The licence authorises the person to carry out drainage plumbing work and supervise work carried out by an apprentice under the general direction and control of a licensed plumbing contractor.
Provisional tradesperson's licence	A provisional tradesperson's licence is for individuals who have obtained qualifications or competencies in plumbing outside of Australia or New Zealand and who intend to obtain a Western Australian plumbing qualification and apply for a tradesperson's licence. It allows the person to complete localisation training and perform plumbing work for up to a year. A person with a provisional tradesperson's licence is authorised to carry out plumbing work under the supervision of a licensed plumbing contractor or the holder of a tradesperson's licence.

Term	Definition
Provisional tradesperson's licence (drainage plumbing)	A provisional tradesperson's licence (drainage plumbing) is for individuals who have obtained qualifications or competencies in plumbing outside of Australia or New Zealand and who intend to obtain a Western Australian plumbing qualification and apply for a tradesperson's licence limited to drainage plumbing. It authorises the person to complete localisation training and perform drainage plumbing work for up to a year under the supervision of a licensed plumbing contractor or the holder of a tradesperson's licence.
Restricted plumbing permits	A restricted plumbing permit is for individuals who are licensed electricians or gasfitters and intend to carry out like-for-like replacements of water heaters while performing electrical or gasfitting work. It allows the person to disconnect, remove, install and connect a compression union, a temperature/pressure relief valve or an expansion control valve in the course of removing, removing and reinstalling or replacing a water heater on a strictly like-for-like basis.

Acronyms and abbreviations

CBA	cost–benefit analysis
DIY	do-it-yourself
FIFO	fly-in, fly-out
LPC	licensed plumbing contractor
Plumbing Act	*Plumbers Licensing Act 1995* (WA)
Plumbing Regulations	Plumbers Licensing and Plumbing Standards Regulations 2000 (WA)
RIS	regulation impact statement

APPENDIX B

Summary of the decision on garden reticulation works

Water source for the reticulation system	Type of work	Who can do the work	
		LPC	Anyone
Scheme water (i.e. drinking water from a water service provider)	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the reticulation system downstream of the backflow prevention device.		✓
	Work involving the installation, replacement, repair or maintenance of the backflow prevention device.	✓	
	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the reticulation system upstream of the backflow prevention device.	✓	
Non-scheme drinking water (e.g. water from rainwater tanks, bores or wells) from a single source that provides drinking water both to the house and the garden (e.g. where a property has just one rainwater tank that services all the water needs of that property.)	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the reticulation system downstream of the backflow prevention device.		✓
	Work involving the installation, replacement, repair or maintenance of the backflow prevention device.	✓	
	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the reticulation system upstream of the backflow prevention device.	✓	
Non-scheme drinking water (e.g. water from rainwater tanks, bores or wells) from a single source that provides drinking water to the garden only but is connected to a scheme water service (e.g. where a rainwater tank is topped up by scheme water.)	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the reticulation system downstream of the backflow prevention device.		✓
	Work involving the installation, replacement, repair or maintenance of the backflow prevention device.	✓	
	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the reticulation system upstream of the backflow prevention device.	✓	
Non-scheme drinking water (e.g. water from rainwater tanks, bores or wells) from a single source that provides drinking water to the garden only but **is not** connected to any scheme water service.	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the reticulation system. (Note: a backflow prevention device is not needed in this case as there is no risk of cross connection with a drinking water supply.)		✓

Untreated greywater supplied via a greywater diversion vessel. (Note: untreated greywater can only be used for sub-surface irrigation).	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the system downstream of the greywater diversion vessel.		✓
	Work involving the installation, replacement, repair or maintenance of the greywater diversion vessel.		✓
Treated greywater supplied via a greywater treatment vessel.	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the system downstream of the greywater treatment vessel (i.e. an Aerobic Treatment Unit or an on-site treatment plant), including the vessel itself.		✓
Treated black/recycled water supplied via a treatment unit	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the system downstream of the blackwater treatment unit, including the unit itself.		✓
	Work involving the design, construction, installation, replacement, connection, disconnection, repair, alteration or maintenance of any part of the system upstream of the blackwater treatment unit.	✓	

APPENDIX C

Regulation of BPDs and TMVs in the other jurisdictions

	Backflow Prevention Devices (BPDs)					Thermostatic Mixing Valves	
Jurisdiction	**Is annual testing of zone or individual BPDs required?**	**If yes, do the people doing then testing have to be licensed or certified?**	**Are the testing reports required to be lodged with the regulator?**	**Is there a registration requirement for zone or individual BPDs?**	**Are testing reminders sent to property owners?**	**Do you require annual testing of TMVs in high-risk facilities?**	**If yes, who regulates this?**
ACT	Yes	Required to be an LPC endorsed to test BPDs	Yes	Yes	Yes	No	N/A
NSW (Sydney only)	No	N/A	No	No	No	Yes. Test reports required to be retained by the property manager.	Ministry of Health
QLD	Yes	Required to be an LPC endorsed to test BPDs	Yes, to the local authority	Yes	Yes. The local authority does this.	Not under plumbing legislation but possibly as part of the water risk management plans required by Health Dept.	Health Dept
SA	Yes	Must be LPCs	Yes	Yes	Yes	Only in accordance with AS/NZS 3500.4	No agency enforces testing but Health Dept require temperature control to prevent legionella.
TAS	Monitored by local government	Required to be an LPC endorsed to test BPDs	Yes, with local government	Yes, with local government	LGA keeps a register and monitors the maintenanc e schedule for BPDs	No	N/A
VIC	No	N/A (but if testing is arranged voluntarily it must be by an LPC endorsed to test BPDs.	No	No	No	No	N/A

APPENDIX D

Summary of Responses to the CRIS Questions

Sections 1 to 16 below provide an overview of the comment received on the main areas of reform discussed in the CRIS[77].

1. CRIS Proposal One – Funding the Regulation of Plumbing

Question 1 in the CRIS asked stakeholders whether they supported the proposal that a levy model be put in place to replace the current method of funding the plumbing regulator. The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 5: Submissions on funding the regulation of plumbing

Stakeholder group	Number of submissions	
	Support	Do not support
Plumbers, apprentices and plumbing companies	160	2
Water/sewerage service providers	0	4
Local government authorities	3	4
Registered Training Organisations	8	2
Hydraulic consultants and designers	8	0
Industry associations	6	0
Union bodies	2	0
Installers and servicers of septic and ATU wastewater treatment systems	3	0
Manufacturers and suppliers	2	1
Consumers/community	9	0
Construction companies	2	1
State Government agencies	3	1
TOTAL	**206**	**15**

Summary of comment received

Overall, a substantial majority supported the proposal to replace the current funding model with a levy on service providers. Perhaps not surprisingly, the strongest support came from the plumbing industry. Section 2.1 of this DRIS contains an overview of the reasons given. Conversely, although the Water Corporation did indicate support for the broad intention to reform plumbing regulation in WA, neither it nor any of the other water service providers who responded to the CRIS supported the idea of a levy to fund the compliance and enforcement program to accompany those reforms.

[77] These were: CRIS Proposals One to Nine, Proposals Eleven to Fifteen, and Proposals Twenty and Twenty-one.

Water and sewerage service providers' comments

Water Corporation

The Water Corporation is the principal supplier of water, sewerage and drainage services in WA, supplying over one million properties across the State. Prior to the creation of the Plumbers Licensing Board in 2004, the Water Corporation was also the regulator for plumbing work in WA.

In its submission in response to the CRIS, the Water Corporation said that while it supported the broad intention to reform plumbing regulation in WA, it did not support the proposal to introduce a levy on service providers as an alternative funding model to the current system of charging compliance fees. The reasons they gave are set out below.

- The assessment of the economic evaluation of the two options presented in the CRIS (i.e. a levy or a restructure of the existing framework for collecting installation fees) appears to be flawed and gives little consideration to improving the efficiency of the current system. The key driver for change seems to be certainty of funding, but that is only one small component of efficiency.
- There is an overemphasis on dispensing with the current system entirely. If a key issue with the current model is lack of compliance by plumbers, then removing the cost burden from plumbers and transferring the cost to all water service customers may be interpreted as rewarding poor performance.
- The argument that a levy reduces red tape is questionable given that the proposal involves imposing red tape on a completely unrelated industry which is then passed on to customers who are not necessarily the beneficiary of the service for which the levy is being imposed.
- If shifting to a levy is based on the principle that all Western Australians are beneficiaries and therefore should pay for the regulation of plumbing, then applying the levy through water service providers will not achieve that goal as not all households and businesses in WA receive their water through a service provider.
- As adequate controls are already in place at property boundaries to prevent contamination of the main water supply and thus protect public health more broadly from the risks of poor plumbing practice, the benefit of plumbing regulation is largely private. As such, the cost of that regulation should continue to be borne by those who directly receive plumbing services.
- As the existing water service providers' customer base has, in theory, already contributed to the cost of plumbing regulation when installing, maintaining or adding to their plumbing in their homes and businesses, the imposition of a levy would, in effect, result in those customers paying twice for the same regulatory service.
- There may be a lack of transparency for customers if the intention is to levy individual customers directly via a levy shown on water service bills and collected by the water service provider.
- Greater consideration should be given to the revenue-raising models in place in the other jurisdictions for the funding of plumbing regulation. For example, Victoria and New South Wales both operate on a 'beneficiary pays' model whereby the primary users of plumbing services bear the cost of regulation.

The Water Corporation also outlined the following impacts and complications that service providers would face if a levy model were to be adopted.

- Changes would need to be made to customer billing systems. This will incur administrative costs that have not been accounted for in the CRIS.
- Benchmarking against other organisations for cost of service would be problematic.
- New legislation would be required in order for a levy to be imposed on service providers as neither the *Water Services Act 2012* nor the *Water Corporations Act 1995* currently permit this.
- The brand and reputation of water services providers will be adversely impacted as customers will view the levy as additional water charge when, in fact, it is unrelated to the service provider's core business.
- The CRIS contains no detail around the question of how the levy system will deal with situations where customers change providers or when new service providers enter the market.

Aqwest

The views expressed by Aqwest were similar to those of the Water Corporation in that they believe a 'user pays model' is the most appropriate way to fund plumbing regulation. Like the Water Corporation, Aqwest pointed out that not all users of plumbing services are connected to mains water and sewerage and so a significant number of people would be benefitting from good plumbing regulation without contributing to the cost.

Aqwest also commented that because of poor compliance by some in the plumbing industry who are not paying the fees due under the current system, the government appeared to be 'giving up' and passing the responsibility on to an unrelated body, namely the water service provider. Like the Water Corporation, Aqwest also urged that more consideration be given to alternative 'user pays' models rather than imposing a levy model.

Busselton Water

In similar vein, Busselton Water opposed the idea of a water services levy on the grounds that it would be inequitable for the broader customer base to collectively fund plumbing regulatory activity. Accordingly, they too said that a form of direct industry/consumer cost recovery was more appropriate.

Harvey Water

As a not-for-profit, private co-operative that supplies non-drinking water to its members only, Harvey Water commented that while it appeared from the information provided in the CRIS that the system needed to be reformed, neither Harvey Water nor its members stood to benefit or gain from the proposed levy and so Harvey Water should be considered for an exemption from the levy scheme.

2. CRIS Proposal Two – Wider definition of 'plumbing work' in the Plumbing Act

Question 3 in the CRIS sought comment on a proposal to amend the current regulatory framework such that the Plumbing Act contains a broad task-based definition of 'plumbing work', with the power to make regulations prescribing how those tasks apply in relation to each branch of plumbing work.

The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 6: Submissions on the definition of "plumbing work"

Stakeholder group	Number of submissions		
	Support	Do not support	Undecided
Plumbers, apprentices and plumbing companies	78	2	18
Water/sewerage service providers	3	-	-
Local government authorities	5	3	-
Registered Training Organisations	9	-	-
Hydraulic consultants and designers	7	-	-
Industry associations	2	2	2
Union bodies	-	1	1
Installers and servicers of septic and ATU wastewater treatment systems	1	-	1
Manufacturers and suppliers	3	-	-
Consumers/community	4	-	1
Construction companies	1	1	-
State Government agencies	2	-	-
Total	**115**	**9**	**23**

3. CRIS Proposal Three – A new definition of 'water supply plumbing work'

Proposal Three in the CRIS dealt with the definition of water supply plumbing and sought stakeholders' views (via Questions 4, 7 and 8) on proposed new definitions for drinking water supply plumbing work and non-drinking water supply plumbing work.

The CRIS also asked (via Questions 5, 6 and 9) whether owner-occupied private properties located in remote parts of WA with limited access to a licensed plumber should be exempt from the proposed scope of both 'drinking water supply plumbing work' and 'non-drinking water supply plumbing work'.

Summary of comment received

MPGA members' combined submission stated that all water supply plumbing work carried out inside the boundary of a property - regardless of the location of the property, the source of the water or the intended use of the water - should be classed as plumbing work for which a plumbing licence is required.

The MPGA executive submission expressed support for the proposal to extend the scope of water supply plumbing work to include non-metered drinking water and non-drinking water. It also agreed with the proposed new definitions for 'drinking water supply plumbing work' and 'non-drinking water supply plumbing work.' However, it strongly opposed any exemptions, saying that the protection of the drinking water supply is as important in remote areas as it is anywhere else, and that it was essential for public health that non-drinking water plumbing is tightly regulated regardless of where in the State it is located.

The responses from non-plumbers also indicated majority support for the proposed definitions of 'drinking water supply plumbing work' and 'non-drinking water supply plumbing work.' On the question as to whether there should be any exemption, the majority opposed the concept, but by a smaller margin than the plumbing industry submissions. A breakdown of the responses to Questions 4 to 9 in the CRIS is provided in Tables 7 and 8 below.

Table 7: Submissions on the definition of "drinking water supply plumbing work"

	Q4. Do you support the proposed definition of 'drinking water supply plumbing work'?		**Q5. Do you agree that private properties in remote locations should be exempt?**		**Q5. Should exemptions apply in any other circumstances?**	
Group	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
Plumbers	149	2	31	71	19	71
Consumers/community	2	-	3	2	2	3
Hydraulic consultants	8	-	2	9	3	5
Manufacturers	2	1	1	2	1	1
RTOs	8	1	5	4	4	3
State government agencies	2	-	-	2	-	2
Local governments	3	-	5	1	3	1
Unions	1	1	-	2	-	2
ATU installers	-	1	-	1	-	1
Industry associations	2	2	2	2	-	2
Construction companies	2	1	3	-	1	2
Service providers	4	-	2	-	-	2
TOTAL	**183**	**9**	**54**	**96**	**33**	**95**

Table 8: Submissions on the definition of “non-drinking water supply plumbing work”

	Q7 and 8. Do you support the proposal to regulate non-drinking water plumbing work? If so, do you support the proposed definition of ‘non-drinking water supply plumbing work’?		Q9. Do you agree that private properties in remote locations should be exempt?	
Group	**Yes**	**No**	**Yes**	**No**
Plumbers	**157**	**3**	**41**	**74**
Consumers/community	**5**	**1**	**2**	**3**
Hydraulic consultants	**8**	**-**	**1**	**8**
Manufacturers	**-**	**1**	**-**	**1**
RTOs	**8**	**-**	**5**	**4**
State government agencies	**3**	**-**	**1**	**1**
Local governments	**3**	**3**	**4**	**1**
Unions	**2**	**-**	**-**	**2**
ATU installers	**-**	**4**	**2**	**-**
Associations	**3**	**2**	**1**	**2**
Construction companies	**2**	**1**	**3**	**-**
Service providers	**4**	**-**	**1**	**-**
TOTAL	**195**	**15**	**61**	**96**

Some of the reasons given by those who answered ‘no’ to questions 7 and 8 were:

- *There are already standards and we should not over-control industries.*
- *Too restrictive for farmers.*
- *It would be too costly. If the mains is done correctly, there should be no cross-connections.*
- *Plumbers should not have control of all types of water connection.*

Comments received from respondents who answered ‘yes’ to questions 7 and 8 included the following:

- *Recycled water is a major part of the plumbing industry, especially with water being such an important resource.*
- *[Non-drinking water supply plumbing] needs to be managed by trained people due to the high risk of cross connection.*
- *Will avoid cross contamination and lead to better health and safety outcomes.*

- *People not on scheme water are at risk of consuming contaminated water [if there is no regulation in place].*
- *There is an urgent need to regulate non-drinking water [N.B. this was stated in many submissions from the plumbing industry but without any reasons provided].*
- *With the increased greenstar and sustainability drive, this is required as a lot of non-drinking water systems have a scheme water bypass or backup system.*
- *Can be just as troubling as potable water if not regulated correctly.*
- *[Needs to be regulated] to prevent the use of non-conforming products.*
- *Plumbers will then be accountable for issues with third pipe schemes.*

4. CRIS Proposal Four – A new definition of 'sanitary plumbing work'

The CRIS sought comment (via Question 10) on a proposal to amend the scope of sanitary plumbing work.

Both the MPGA executive submission and the MPGA members' combined submission supported the proposed scope for the definition of 'sanitary plumbing work' without amendment. This view was echoed by the vast majority of other stakeholders who responded to this question in the CRIS, as shown in the following table.

Table 9: Submissions on the definition of 'sanitary plumbing work'

	Q10. Do you support the proposed new definition for 'sanitary plumbing work'?	
Group	**Yes**	**No**
Plumbers	142	-
Service providers	1	-
Unions	1	1
Industry associations	2	3
ATU installers	-	1
Local governments	3	5
Manufacturers and suppliers	2	-
Hydraulic consultants	7	-
Consumers/community	6	1
RTOs	9	-
State government agencies	1	1
Construction companies	2	0
TOTAL	**176**	**12**

The principal reason given by those who did not support the proposed definitions was the inclusion of references to onsite wastewater management and disposal systems. This is related to the discussion around whether WA should adopt Part F1 of the PCA and is dealt with in more detail in section 2.5 of this DRIS.

5. CRIS Proposal Five – Definition of ‘drainage plumbing work’

The CRIS sought comment (via Question 11) on a proposal to amend the current definition of ‘drainage plumbing work’.

Both the MPGA executive submission and the MPGA members’ combined submission supported the proposed revised scope for the definition of ‘drainage plumbing. Support was also provided by the vast majority of other stakeholder groups who responded to this question in the CRIS, as shown in the table below.

Table 10: Submissions on the definition of ‘drainage plumbing work’

	Q11. Do you support the proposed new definition for ‘drainage plumbing work’?	
Group	**Yes**	**No**
Plumbers	148	3
Service providers	1	-
Unions	1	1
Industry associations	2	4
ATU installers	-	1
Local governments	3	5
Manufacturers and suppliers	2	-
Hydraulic consultants	5	1
Consumers/community	4	1
RTOs	9	-
State government agencies	1	1
Construction companies	2	0
TOTAL	**178**	**17**

As was the case with the definition of ‘sanitary plumbing work’, the principal reason given by those who did not support the proposed definitions was the inclusion of references to onsite wastewater management and disposal systems.

6. CRIS Proposal Six – Garden reticulation plumbing work

The CRIS sought comment (via questions 12 and 13) on a proposal to clarify the issue as part of the revisions to be made to the definition of water supply plumbing work.

The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 11: Submissions on garden reticulation work

	Q12. Number of submissions		Q13. Number of submissions	
Group	**Yes**	**No**	**Yes**	**No**
Plumbers, apprentices and plumbing companies	131	13	86	48
Local government authorities	7	-	5	1
Registered Training Organisations	7	2	4	1
Hydraulic consultants	5	2	5	1
Industry associations	3	2	2	1
Consumers/community	5	-	4	1
Installers and servicers of septic and ATU wastewater treatment systems	4	-	4	-
Manufacturers and suppliers	1	1	1	1
Union bodies	2	-	-	2
Construction companies	2	-	2	-
State Government agencies	2	-	1	1
Service providers	2	-	1	-
TOTAL	**171**	**20**	**115**	**57**

7. CRIS Proposal Seven – Testing and maintaining plumbing safety devices

The CRIS discussed the vital role that safety devices such as BPDs and TMVs play in ensuring that plumbing systems remain safe and reliable.

BPDs

Question 14 in the CRIS asked stakeholders whether they supported the proposal relating to the testing and maintenance of BPDs. Respondents were also asked to provide reasons for their response, together with supporting evidence where available.

The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 12: Submissions on BPDs

	Number of submissions	
Group	**Support**	**Do not support**
Plumbers, apprentices and plumbing companies	155	-
Local government authorities	5	-
Registered Training Organisations	9	-
Hydraulic consultants	11	-
Industry associations	4	1
Consumers/community	4	-
Union bodies	2	-
Construction companies	2	-
Manufacturers	3	-
State government agencies	2	-
Service providers	3	-
TOTAL	**200**	**1**

TMVs

Question 15 in the CRIS asked stakeholders whether they supported the proposal relating to the testing and maintenance of TMVs. Respondents were also asked to provide reasons for their response.

The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 13: Submissions on TMVs

	Number of submissions	
Group	**Support**	**Do not support**
Plumbers, apprentices and plumbing companies	148	1
Local government authorities	5	-
Registered Training Organisations	9	-
Hydraulic consultants	11	-
Industry associations	5	-
Consumers/community	3	-
Union bodies	2	-
Construction companies	1	-
Manufacturers	3	-
State government agencies	2	-
Service providers	1	-
TOTAL	**190**	**1**

8. CRIS Proposal Eight – Plumbing repairs by private homeowners

The CRIS proposed to de-regulate specified certain minor plumbing repair tasks when carried out by or on behalf of private homeowners in their own homes. Questions 19 and 20 in the CRIS asked whether stakeholders supported the de-regulation proposal (Q. 19) and, if so, whether they supported the scope of work proposed to be de-regulated (Q. 20).

The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 14: Submissions on plumbing work by private homeowners

	Q19. Number of submissions		Q20. Number of submissions	
Stakeholder group	**Support**	**Do not support**	**Support**	**Do not support**
Plumbers, apprentices and plumbing companies	12	104	17	96
Local government authorities	7	-	-	-
Registered Training Organisations	5	4	5	4
Hydraulic consultants	6	1	5	-
Industry associations	4	1	3	1
Consumers/community	5	2	5	2
Union bodies	-	2	-	2
Construction companies	3	-	3	-
Manufacturers	2	1	2	1
State government agencies	2	-	2	-
Service providers	4	-	4	-
ATU installers	3	1	3	1
TOTAL	**53**	**116**	**56**	**107**

9. CRIS Proposal Nine – Regulating verifiers of Performance Solutions and Designers of complex plumbing installations

(a) Verifiers of Performance Solutions

The CRIS asked stakeholders whether they thought there should be regulations prescribing who can **verify** a Performance Solution (Question 21).

The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 15: Submissions on verifiers of performance solutions

	Number of submissions	
Group	**Support**	**Do not support**
Plumbers, apprentices and plumbing companies	150	-
Local government authorities	7	-
Registered Training Organisations	9	-
Hydraulic consultants	11	-
Industry associations	4	-
Consumers/community	6	-
Union bodies	1	1
Construction companies	1	-
Manufacturers	2	-
State government agencies	2	-
TOTAL	**193**	**1**

(b) Designers of complex plumbing installations

The CRIS looked at whether, in addition to regulating verifiers of performance solutions, there should also be some degree of regulatory oversight of designers of complex Deemed-to-Satisfy plumbing projects pertaining to buildings in Classes 2 to 9 of the building classification system used in the NCC[78].

Four questions were posed in order to seek stakeholders' views on this issue:

Q.22 Do you think there should be regulations prescribing who can design a plumbing installation in a complex building?

Q.23 If you answered yes to question 22, should different levels of competency be required, based on the complexity of the project?

Q.24 Are there any types of projects where a designer should **not** need to have particular competencies or qualifications?

Q.25 Should an LPC be permitted to design a project at any level of complexity?

[78] This would exclude single residential buildings and simple structures.

Summary of comment received

Not all submissions addressed all four questions. A total of 187 submissions were received in response to Questions 22 and 23 in the CRIS; 178 submissions addressed Questions 24 and 25. This included the MPGA members' combined submission and the MPGA executive submission. The other stakeholder groups who responded to Questions 22 to 25 are listed in the table below.

Table 16: Submissions on designers of plumbing installations

	Q22. Number of submissions		Q23. Number of submissions	Q24. Number of submissions	Q25. Number of submissions
Group	**Y**	**N**			
Plumbers, apprentices and plumbing companies	149	1	151	138	136
Local government authorities	6	-	6	3	4
Registered Training Organisations	8	-	8	5	7
Hydraulic consultants	6	-	6	6	6
Industry associations	4	-	4	3	3
Consumers/community	5	1	6	4	5
Union bodies	1	-	1	1	2
Construction companies	1	1	1	1	2
Manufacturers	1	-	1	1	1
State government agencies	2	-	1	1	1
TOTAL	**183**	**3**	**185**	**163**	**167**

All but five of the responses to Questions 22 and 23 agreed that there should be regulations prescribing who is permitted to design a plumbing installation in a complex building. This was based on the view that it is designers who must take responsibility for designs, not the installing plumber. The reasons given in the five dissenting submissions were:

- *No, as we all must work within the codes, regardless.*
- *No, expert judgment as per the PCA is required.*
- *No*, *LPCs have experience and can ask PLB for advice.*

Design regulation in other jurisdictions

The following table summarises how plumbing design is regulated in the other Australian jurisdictions.

Table 17: Design requirements in other jurisdictions

Jurisdictions	Current Regulations for the design of regulated plumbing systems
ACT	The ACT has Plumbing Plan Certifiers for commercial projects (other than a single residential property) that are responsible for the certification of commercial plans Plumbing systems design requires sign-off from a Plumbing Plan Certifier. If a Plumbing Plan Certifier signs-off a design that is non-compliant and not done under a Performance Solution then they can have demerit points issued against them.
NSW	Information provided from the Sydney CBD plumbing regulator indicates that the responsibilities for a plumbing design fall to the installing licensed plumber similar to WA.
QLD	Under the new Plumbing and Drainage Act 2018, it remains a requirement that a design is submitted with an application for a plumbing permit apart from a Class 1 residential building Under the QBCC Act there is a value of $1000 limit on the fee that can be charged for a design by an unlicensed person. For work over this value either **a plumber or a hydraulic designer** can complete a design. The new *Plumbing and Drainage Act 2018* incorporates penalties for a non-compliant design.
SA	Hydraulic designs for water supply, sanitary and drainage plumbing must be lodged with the Office of Technical Regulator for: • major works over and above residential housing exceeding 2 dwellings; and • for developments of 4 or more levels, schematic designs are also required. There are no regulations as to who can design a plumbing system although the plumbing work will not be audited or inspected until a design is submitted.
Tasmania	Design is done at local government level during the permit process. 'Consumer Building and Occupational Services' provide overarching guidance and specific standards that need to be observed via their Directors Determinations pathway. The Occupational Licensing Act 2005 and some Directors Determinations determine who is able to design a system.
Victoria	Information provided from the Victorian plumbing regulator indicates that the responsibilities for a plumbing design fall to the installing licensed plumber similar to WA.

10. CRIS Proposal Eleven – Remove business training as a licence prerequisite

Question 28 in the CRIS asked stakeholders whether they agreed that the requirement to undergo business training should be removed.

Summary of comment received

The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 18: Submissions on business training

	Number of submissions	
Group	**Yes**	**No**
Plumbers, apprentices and plumbing companies	35	105
Local government authorities	1	4
Registered Training Organisations	4	5
Hydraulic consultants	2	5
Industry associations	2	2
Consumers/community	2	2
Union bodies	-	2
Construction companies	1	1
Manufacturers	-	1
State government agencies	-	1
Service providers	1	-
ATU installers	1	-
TOTAL	**49**	**128**

Jurisdictional comparison on business training

Jurisdictions	Is there a requirement to complete a training unit or units in relation to operating a business, for the purposes of obtaining a plumbing licence?
ACT	The following units of competency are required: • Establish legal and risk management requirements of small business. • Carry out work based risk control processes. • Estimate and cost work. • Read and interpret plans and specifications
NSW	There is no requirement to complete business training units.
QLD	It is a requirement to complete business training units when completing the requirements for a contractor licence, where the person intends to contract to the public. Completion of the unit 'Establish legal and risk management requirements of small businesses will meet the requirement.
SA	The business subjects which are part of a Certificate IV in Plumbing Services must be completed.
TAS	A form of business training has recently been reintroduced as part of the licence requirements.
VIC	The following units of competency are required: • Establish legal and risk management requirements of small business (BSBSMB401A) • Carry out work based risk control processes (CPCPCM4011A) • Estimate and cost work (CPCCM4012A)

11. CRIS Proposal Twelve – Mandatory Insurance for LPCs

In the CRIS, stakeholders were asked whether they agreed that LPCs should **no**t be required to carry public liability insurance (PL) and professional indemnity insurance (PI) as a condition of their licence (Question 29).

The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 19: Submissions on mandatory insurance

Group	Yes for both PL and PI	No for both Pl and PI	No for PL but Yes for PI
Plumbers, apprentices and plumbing companies	16	51	39
Local government authorities	1	4	-
Registered Training Organisations	5	3	1
Hydraulic consultants	1	1	5
Industry associations	2	-	2
Consumers/community	1	2	1
Union bodies	-	1	1
Construction companies	1	2	-
Manufacturers	-	1	1
State government agencies	-	1	-
Service providers	-	1	-
TOTAL	**27**	**66**	**50**

12. CRIS Proposal Thirteen – Scope of work under a restricted plumbing permit (RPP)

Question 30 in the CRIS asked whether the scope of work covered by a Restricted Plumbing Permit should be amended. For those who agreed that it should, Question 31 offered five different options for change.

The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 20: Submissions on the scope of work under an RPP

	Q30.		Q31.				
Group	**Yes**	**No**	**Option 1**	**Option 2**	**Option 3**	**Option 4**	**Option 5**
Plumbers, apprentices and plumbing companies	10	67	4	-	1	-	3
Electrical Licensing Board	1	-	-	-	-	-	1
Local government authorities	4	-	-	-	-	-	4
Registered Training Organisations	1	7	-	-	1	-	-
Hydraulic consultants and designers	2	2	1	-	-	-	-
Industry associations	2	1	1	-	-	-	1
Union bodies	1	1	-	-	-	-	1
Manufacturers and suppliers	1	-	1	-	-	-	-
Consumers/community	1	2	-	-	-	-	1
Construction companies	-	1	-	-	-	-	-
Total	**23**	**81**	**7**	**-**	**2**	**-**	**11**

MPGA executive submission

In response to Question 30 and 31, the MPGA executive responded as follows:

> *No, we believe the current scope of work that electricians can perform with a restricted plumbing permit is sufficient. Any of the proposed options will increase the level of risk to the public. It should also be noted that the proposed options will increase workplace health and safety (WHS) risk, not just for the person doing the work but for people who may come on site later in the course of their employment and be at risk of injury due to, for example, an explosion caused by an incorrectly installed part.*

The MPGA members' combined submission was similarly opposed to any amendment to the scope of work, saying that,

> *The use of the RPP should be minimised because its arrangement is too loose. By increasing permits, it breaks down the licensed trade.*

Plumbing industry comment separate to MPGA

Eighty-five per cent of the comment from the plumbing industry, including general and housing plumbing businesses, plumbing employees and apprentices opposed any change to the scope of work for RPP holders. Some of the comments supporting this view were:

- *Due to components replaced I do not want to see semi-skilled persons doing the work*
- *Where does the line end?*
- *Any expansion of an already confusing RPP will not help*
- *It will increase the chance of rules being breached*
- *There shouldn't be an RPP at all*
- *It should be removed, plumbers are being squeezed out and will leave the trade*
- *This will increase the amount of non-compliance resulting in contamination, injuries or repairs*
- *Strictly for disconnect/reconnect and should stay like this in line with the [Restricted Electrical Permit]*

From the 15 per cent of plumbing industry respondents who supported amending the scope some comments were:

- *Provided Certificates of Compliance are submitted and the Restricted Electrical Licence is changed to allow the cable to be altered back to the isolating switch.*
- *Only to an electrician and the training must be sufficient.*

The views expressed by NECA and the Electrical Licensing Board (ELB) were as follows:

- *NECA would like to express its support for Option 1 to 'allow a RPP holder in the course of replacing a water heater, to install an approved flexible hose connector in circumstances where the plumbing standards allow'. NECA believes this is imperative to ensure that consumers are not forced to engage both a plumber and an electrician, to complete work that could be competently be performed by a single, appropriately qualified plumber or electrician.*
- *On the same basis that the ELB implemented Restricted Electrical Licenses, the customer should expect the minimum number of tradespeople to make plumbing changeovers consistent with safety. Permits should be allowed on as wide a basis as safety permits. There appears to be a lack of awareness of this permit since it has been re-established by the electrical community and an education program is worthwhile.*

In response to Question 30, the Electrical Trades Union (ETU) WA Branch agreed the scope of work enabled by a RPP should be amended to allow the regulation to be more *"usable and sensible."* Some comments from the ETUs comprehensive submission are as follows:

- *The amendment which allows the most sensible option is Option 5.*
- *It would be unfair and harsh for both the customer and repairer if, upon attending the job and discovering it requires work on the temperate valve or altering the original installation may require pipework rather than using a flexible hose, the repairer had to refuse to rectify the fault.*

- *Plumbers/Gas operatives seeking Restricted Electrical Licenses are required to undertake appropriate training modules relevant to the work they propose to perform. To ensure competence the ETU would support an appropriate training schedule for those seeking a RPP to work on instantaneous/storage hot water services and ancillary equipment.*
- *The matter of non-compliance as a consequence of negligence should be dealt with in the same manner as holders of other plumbing and/or gas operative licenses/permits.*
- *There are serious safety consequences of non-compliant work with hot water services and their ancillary equipment. The classifications of gas operative and licensed electrician are well familiar with the need to respect possible safety issues and apply that extra level of attention, diligence and final testing of the integrity of the system to prove safe.*

Views of RTOs:

- *No, I do not agree with a RPP in the first instance. If the options were to be reciprocated then an LPC could run a small amount of new electrical wiring and install a GPO as well as install/replace RCDs etc.*
- *No, holders of a restricted plumbing permit should only be able to undo and retighten fittings for a 'like for like' replacement, anything more than that would be classed as plumbing work. What would happen if the 'flexible hose' situation wasn't allowed, do we revert back to the installation of new copper tube be classed as 'Plumbing work'.*

Regulation in other jurisdictions

A comparison of the position in the other states and territories shows that most of the other jurisdictions operate a similar reciprocal licensing arrangement between gas and plumbing, as illustrated in the following table.

Table 21: Jurisdictional comparison for RPPs

Jurisdiction	Is a restricted plumbing permit/licence for water heater changeovers available?	If so, what does the permit/ licence allow?
ACT	Not available	N/A
NSW (Relevant to Sydney only)	Historical permits are still in use but no new permits are being issued	Licensed electricians who hold a permit can replace water heaters. Detail on limitations to the scope of work not provided
QLD	Yes	Appropriately licensed electricians and gas installers who have obtained a permit can, in the case of an electrician, disconnect and connect water plumbing associated with replacing an 'electric resistance hot water heater'; or, in the case of a gas installer, disconnect and connect water plumbing associated with replacing a 'gas hot water heater'
SA	Yes	A Restricted Plumbing worker can maintain or replace a domestic-type electric water heater
TAS	Yes	Entitles the holder to remove and replace elements and disconnect a water heater at unions to rotate for removal and reconnection
VIC	There are licenses for particular classes of specialised plumbing but not specifically for water heater replacements	N/A

13. CRIS Proposal Fourteen – The transition from apprentice to tradesperson

The CRIS highlighted an issue in the Plumbing Regulations with the definition of 'apprentice' and the implication of the definition for graduating plumbers. To address the problem, the CRIS proposed an amendment to the Plumbing Regulations to allow a period of two months following the completion of a training contract to enable a graduate plumber to carry out plumbing work legally, provided that he/she applies for and is not refused a tradesperson licence within that two month period. The question asked in the CRIS was whether a period of two months was reasonable (Question 32).

The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 22: Submissions on the transition from apprentice to tradesperson

	Number of submissions	
Group	**Yes**	**No**
Plumbers, apprentices and plumbing companies	72	63
Local government authorities	6	-
Registered Training Organisations	5	4
Hydraulic consultants	2	5
Industry associations	2	1
Consumers/community	2	2
Union bodies	-	2
Construction companies	-	1
Manufacturers	-	1
TOTAL	**89**	**79**

14. CRIS Proposal Fifteen – Advertising plumbing services

The CRIS discussed whether non-plumbing companies should be banned from advertising to provide plumbing services or services that include an element of plumbing work.

Stakeholder comment was sought on the issue via Questions 33 in the CRIS. The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 23: Submissions on advertising plumbing services

	Number of submissions	
Group	**Yes**	**No**
Plumbers, apprentices and plumbing companies	151	17*
Local government authorities	5	-
Registered Training Organisations	7	2
Hydraulic consultants	6	
Industry associations	2	2
Consumers/community	6	-
Union bodies	2	-
Construction companies	1	-
Manufacturers	2	-
Service providers	1	-
State government agencies	1	1
TOTAL	**184**	**22**

Many of those who agreed that advertising should be banned cited consumer protection and the protection of the licensed plumbing trade as the main reasons why.

Among those who disagreed that advertising by non-plumbers should be banned, the reasons given were largely around the fact that it was more important to ensure that the actual carrying out of the work was done by licensed people rather than the advertising, and that it was acceptable for advertisers to sub-contract the regulated parts of the services they provide.

Regulation in other jurisdictions

The following table summarises the position in other states and territories, most of whom do have some level of regulation around advertising by non-plumbers.

Table 24: Jurisdictional comparison of advertising provisions

Jurisdiction	Current regulations in regard to advertising for plumbing work
ACT	**Construction Occupations (Licensing) Act 2004 - Section 83** It is an offence for any person to advertise a licensed service without including their licence number in the advertisement.
NSW	**HOME BUILDING ACT 1989 - Section 5** It is an offence for anyone to represent that they are prepared to carry out licensed work if they are not the holder of a licence to perform such work. It is also an offence for a person to knowingly represent that another person is prepared to carry out licensed work if that other person does not hold a licence for such work.
QLD	**Queensland Building and Construction Commission Act 1991 - Section 53C and Section 54** A person who does not hold a plumbing contractor's licence must not publish an advert that the person is available to carry out plumbing work.
SA	Not regulated by the plumbing regulator.
TAS	**Occupational Licensing Act 2005 – section 38** A person must not hold himself, herself or any other person out as a licensed plumber when that is not the case. A person must not represent that he, she or another person is prepared to enter into a contract to carry out licensed plumbing work unless he, she or the other person holds a plumbing contractor's licence.
VIC	**Building Act 1993 – sections 221I and 221J** A person must not: • use the title "plumber", "plumbing practitioner", "licensed plumber" or "licensed plumbing practitioner" unless licensed; or • hold himself or herself out as being licensed unless he or she is licensed to carry out plumbing work.

15. CRIS Proposal Twenty – Scope of 'minor plumbing work'

Question 35 of the CRIS asked for feedback on the proposal to remove, 'the maintenance or repair of an existing water heater' from the list of work described as minor plumbing work in Regulation 3(b), for purposes of aligning the work descriptions with the actual definition of plumbing work in Regulation 4(1)a.

There were 170 responses to this question in the submissions received including the MPGA executive submission and the MPGA combined submission. Of the submissions provided, 126 responses did not agree with removing the description of work from the list of *minor plumbing work* in Regulation 3(a), and 44 submissions did agree with removal of the description of work.

16. CRIS Proposal Twenty-One – The structure of the plumbing regulator

As outlined in the CRIS, the ACIL Allen review evaluated the current institutional and decision-making framework for plumbing regulation in WA and concluded that efficiencies could be gained from restructuring the roles of licensing administrator and technical regulator.

While ACIL Allen did not make any specific proposals for change, they did outline some general principles. Based on those principles, four different options were identified and these were discussed in the CRIS.

Impact analysis carried out as part of the development of the CRIS suggested that the optimum model for the structure of the plumbing regulator was to move all functions to the statutory position of Director of Energy Safety, supported by an industry advisory group and staff from the Department (Option 4 in the CRIS).

In the CRIS, respondents were asked to identify which of the four options presented they would support, and why. The stakeholder groups who provided comment on this issue are listed in the following table. The MPGA members' combined submission and the MPGA executive submission also commented on this issue.

Table 25: Submissions on the structure of the plumbing regulator

Group	Number of submissions
Plumbers, apprentices and plumbing companies	136
Local government authorities	5
Registered Training Organisations	8
Hydraulic consultants	6
Industry associations	6
Consumers/community	5
Installers and servicers of septic and ATU wastewater treatment systems	2
Manufacturers and suppliers	1
Union bodies	2
Construction companies	1
TOTAL	**172**

As shown in the following table, most respondents supported either Option 2 or Option 3. The MPGA members' combined submission and the MPGA executive submission both supported Option 2, as did one of the two submissions received from unions and four of the six submissions from industry associations.

Option	Submissions in support
Option 1 – Maintain the status quo	2
Option 2 – Establish an independent 'plumbing technical regulator' and a 'plumbing technical registration board', supported by an independent office of the plumbing technical regulator	79
Option 3 – Retain the Plumbers Licensing Board as the licensing administrator but transfer the role of technical regulator to DMIRS	81
Option 4 – Dissolve the Plumbers Licensing Board and transfer all its functions to DMIRS supported by an industry advisory group.	12

The following quotes taken from the submissions in support of Options 2 and 3 provide an overview of the reasons given.

Option 2

- *Currently, plumbing regulation cuts across water, health, DMIRS, FESA and Energy Safety. This can create cross-boundary issues which are most likely not recognised due to a lack of communication and intent by these agencies. All matters pertaining to plumbing should come under one body – a plumbing technical regulator. Currently the PLB is fundamentally the regulator but the majority of its focus is licensing. The lack of a true technical regulator is at a critical stage – illegal and non-compliant plumbing works occur across the whole of WA by non-qualified persons.*
- *People who are dedicated to, and have extensive knowledge of, plumbing and all its aspects should be regulating the industry and controlling the inherent risks. As can be seen by recent events making front page news, we are dicing with death if the current almost bare minimal regulatory environment continues.*
- *The current PLB structure has no "teeth" and there is an urgent need for change. A new regulator needs to be set up with the powers and framework that we once had prior to the formation of the now PLB. With this structure, the technical regulator could self-fund its operations and protect the consumer from health and safety issues.*
- *It is imperative that the WA plumbing industry moving forward has clear technical regulations and a dedicated body to oversee it and support it. This would improve technical compliance, resulting in a big win for the consumer and public health in general.*
- *The current regulatory body focusses heavily on an LPC who generally carries out work in accordance with the regulations. Not enough emphasis is placed on the non-trained people who are carrying out plumbing work, such as handymen and DIY people. There are very few prosecutions occurring for illegal plumbing works and yet there is much evidence that it is rampant in the community.*

- *The industry needs a properly funded independent technical regulator with the legal power and financial resources to enforce compliance with plumbing law across WA. Option two provides the best model for achieving this.*
- *An independent technical regulator would remove the body from the challenges wrought by the political cycle and minimise the confusion and loss of experience when the Department moves from one portfolio to another.*
- *Plumbing should belong under a single industry regulator because it is essential to the protection of public health, safety and wellbeing, and requires a regulatory body that focuses solely on plumbing and the risks associated with poor plumbing practices. A generalist regulator would have limited abilities in carrying out complex policy and regulatory functions required by the plumbing industry. Plumbing covers a vast expanse of complex areas and cannot fit into a 'one size fits all' arrangement.*

Option 3

- *We need the PLB to be an independent licensing body to ensure rigorous licensing of the trade.*
- *The plumbing industry is a licensed trade. As such, it should have a governing body such as the PLB, with the office of technical regulation.*
- *[This option] will make the best use of existing infrastructure and know-how.*
- *[Under this option] the technical regulator can cover both plumbing and gas with no separation. Procedures are already in place, with the PLB for licensing, with no inherent issues there.*

------END------

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