**Marine Safety Regulations 2022**

Regulatory Impact Statement

June 2022

# Executive Summary

**Purpose of this Regulatory Impact Statement**

The registration of vessels, licensing of masters of vessels, operational requirements and pilotage services in Victoria is regulated under the *Marine Safety Act 2010* and the Marine Safety Regulations 2012 (the current Regulations).

A Regulatory Impact Statement (RIS) has been prepared for the new regulations, as required under the *Subordinate Legislation Act 1994* (SLA) and in accordance with the Commissioner for Better Regulation’s *Victorian Guide to Regulation*. Section 5 of the SLA prescribes the automatic revocation of regulations on the tenth anniversary of their making. This ensures that outdated and unnecessary regulation is automatically repealed.

The purpose of this RIS is to facilitate community consultation on the proposed regulatory amendments described in the proposed Marine Safety Regulations 2022 (the proposed Regulations).

**Regulatory framework**

The Marine Safety Actand the current Regulations set the regulatory framework for marine licensing, vessel registration, the regulation of pilotage service providers and various other matters in relation to marine safety. The proposed Regulations cover the following activities:

* providing a means of identifying vessels and their operators
* setting eligibility criteria and conditions for vessel registration (applications for registration, the transfer of registration, identification marks, conditions of registration)
* prescribing the vessel and personal watercraft (PWC) licensing and endorsement regime
* prescribing licensed and endorsed vessel operator responsibilities and obligations
* prescribing vessel standards and safety
* prescribing safety obligations in relation to pilotage services
* prescribing the required safety equipment during the operation of a vessel
* enforcement (including providing for the seizure and impoundment of recreational vessels, and the testing of devices).

Vessel safety regulation operates within the broader policy context, including the Victorian Government’s *Better Boating Fund* and the *Victorian Recreation Boating Strategy*. Other legislation is also relevant to marine safety. These include:

* the *Transport Integration Act 2010*
* the *Marine (Drug, Alcohol and Pollution Control) Act 1988*
* the *Transport (Safety Schemes Compliance and Enforcement) Act 2014*.

Many provisions of the Marine Safety Act require certain details to be prescribed by regulation to enable the marine licensing and vessel registration schemes to operate effectively.

**Base case**

Regulatory impact analysis for sunsetting regulations involves assessing options to achieve specific objectives against the ‘base case’. The base case consists of the scenario that allows the current Regulations to sunset without replacement. Under this scenario, the Marine Safety Act, other Victorian safety legislation and regulations, and applicable national standards, guidelines and frameworks would apply, potentially leaving vessel registration and licensing regulation gaps that, under the Marine Safety Act, are intended to be filled by regulation.

The base case for these proposed Regulations is no regulations. As above this will leave a number of regulatory gaps relative to legislation and other instruments.

Under a base case of no regulations the Department considers that there would be insufficient private incentives for persons to conduct themselves in a manner required to keep fatalities and serious injury at an acceptable level.

**Nature and extent of overarching and specific problems**

**Nature and extent of overarching residual problems of having no regulations**

Over the nine-year period from 2011 to 2019, 52 deaths were registered in Victoria (all Victorian residents) as a result of maritime-related accidents. Of these deaths, eight occurred in accidents involving fishing boats and sail boats, 13 involving canoes or kayaks and 12 involving vessels such as jet skis.

The Department considers that under the base case of no regulations the number and severity of incidents would be higher than in the case of regulations. To that end, the Marine Safety Act, these proposed Regulations and other instruments interplay to seek to minimise the consequences of incidents and set a path of reducing them over time.

The Department has analysed problems in the RIS in relation to six different areas of marine safety.

***Knowledge and skills – Marine licensing***

A number of problems have been identified with regards to the key drivers for a requirement for a licensing regime including:

* human factors
* environmental factors
* material factors.

The Department considers human factors to be the largest driver and relationship to potential incidents. This relates to persons being adequately skilled, understanding safety factors, errors of judgement and risk taking. Environmental factors such as bad weather that impacts on visibility, creates slippery surfaces and instability in vessels also contributes to the incident of accidents. Material factors systems and equipment that relate to the physical components of the vessel. These physical components allow the vessel to operate on the water and includes, for example, electrical wiring, hull, navigation systems, and fuel systems, as well as any component of the vessel that ensures it stays buoyant and stable on the water. In the absence of regulations there would be no licensing regime to equip applicants with the necessary knowledge before operating a vessel.

***Vessel standards and safety***

A number of problems have been identified with regards to the key drivers for a requirement for improving vessel standards and safety including:

* appropriate vessel design and standards to ensure safety adequacy and consistency regarding sea worthiness
* appropriate placement and positioning of lights
* vessel maintenance and inspections.

The Department considers that given the continuing occurrence of certain types of incidents related to material factors that intervention is warranted. Ensuring that systems failures e.g. wiring, design and standards factors are met will contribute to safety as will better visibility and maintenance of vessels to an appropriate standard. In the absence of regulations, the Department believes there are insufficient private incentives to ensure vessels are built and keep in an appropriate condition.

***Maintaining safety during the operation of a vessel***

A number of problems have been identified with regards to the key drivers for a requirement for improving vessel safety while operating a vessel including:

* overloading a vessel
* issues associated with fuelling and restarting vessels after refuelling.

The Department considers that given the continuing occurrence of certain types of incidents related to material factors that intervention is warranted. Ensuring that systems failures e.g. wiring, design and standards factors are met will contribute to safety as will better visibility and maintenance of vessels to an appropriate standard. In the absence of regulations there is no clarity or guidance to vessel operators in determining if a vessel may be overloaded. Additionally, refuelling vessels is risky as it introduces fuel vapours. When combined with air and ignition can ignite and explode. While these incidents are uncommon the consequences can lead to fatalities. Given the severity of the consequences of frisks associated with these problems the Department considers regulation is required to ensure safety.

***Identification of vessels***

A key issue problem identified with regards to vessel identification relates to enabling law enforcement and deterring issues such as vessel rebirthing.

The Department considers that the identification of vessels is critical to ensuring law enforcement agencies and regulators are able to do their job and protect society. In the absence of regulations there are insufficient private incentives for persons to obtain and report verified Hull Identification Numbers (HIN) at the time of registration.

***Safety equipment***

Keys issues identified regarding safety equipment relates to operators having appropriate equipment, sufficient equipment and operating it correctly.

The Department acknowledges that safety equipment alone will not prevent a marine incident from occurring however its purposes is to prevent the severity of outcomes of such incidents. The Department considers that in the absence of regulations there is not sufficient private incentive to ensure the consequences of incidents are keep to an acceptable level. The Regulations ensure adequacy in terms of life jackets, flares and firefighting systems.

***Safety in provision of pilotage services***

The key issue identified relating to pilotage services is compliance monitoring and enforcement. Pilotage service providers (PSPs) have various obligations in addition to sophisticated safety management systems however these are not currently prescribed in the Marine Safety Act or the Regulations and this impedes the regulator to effectively and efficiently monitor compliance with and enforce requirements relating to general safety duty. Given the nature of consequences of an incident occurring in relation to large ship movements, the Department considers that it is important for a regulator to be satisfied that risk controls have been properly and appropriately considered. In the absence of regulations, the Department considers there are not sufficient private incentives to monitor and accurately report against their obligations. Therefore, additional controls may be required to enable the regulator to do their role.

**Objectives of the proposed Regulations**

To address the problems identified the objectives of the proposed Regulations are summarised as:

* safety
* minimising regulatory burden
* effective and efficient compliance and monitoring enforcement.

**Options identification and analysis**

**Options identification**

A RIS is required to identify feasible options to address the problems identified, and then compare the relative costs and benefits to determine the preferred option compared to the proposed Regulations. A variety of methods were used to compile a list of feasible options for each of the six problem areas outlined above. This includes:

* Stakeholder consultation: The Department undertook internal and external stakeholder consultation to canvass views on proposed changes to the existing regulations.
* Interjurisdictional comparison: The Department assessed how other Australian jurisdictions manage marine safety and the relative benefits their regimes generate from a safety perspective.
* Regulatory and non-regulatory options: The Department considered regulatory and non-regulatory options and the degree to which a non-regulatory approach could work in achieving marine safety outcomes.
* Options and analysis previously undertaken: The Department revisited the RIS for the 2012 Regulations and a paper developed in 2011 in relation to a range of options for marine licensing.
* Status quo: The Department considered the status quo (existing regulations) as these regulatory requirements have evolved over decades in order to achieve the implicit purposes of the Marine Safety Act and various policy proposals developed over time. The status quo is a legitimate starting point for the consideration of options.

When considering options for each proposal the Department considered whether variables within options related to options design as opposed to requiring the development and description of a completely separate option. Design factors, for example, may relate to the term of a licence as opposed to what is required to obtain a licence.

**Methodology for analysis of proposals – Multi-criteria analysis (MCA)**

The methodology applied to compare potential options involved the use of multi-criteria analysis (MCA), as it was not feasible to monetise and/or quantify all the impacts of the options considered. This approach requires making judgements about how proposed options will contribute to a series of criteria that are chosen to reflect the benefits and costs associated with the proposals. The Department considered it appropriate to use the MCA as a decision tool because, in many instances, the available data did not allow the costs and benefits of the specific effects of the proposal to be isolated. Where policy changes from the existing Regulations are identified, options are compared against the base case of no regulations.

The following criteria are selected, with ***safety*** being the most important one:

* Safety – The degree to which a proposal supports and enables reduction in marine deaths, serious injury and human and infrastructure damage.
* Cost to government – The cost of a proposal to Government in terms of net administration costs for the provision of services.
* Cost to community – The cost of a proposal to the community in terms of financial and time cost to the marine community and other regulated parties.

From a benefits perspective, *Safety* was considered to be the paramount criterion and assigned the highest weighting (50%).

On the costs side, *Cost to Government* and *Cost to Community*, were deemed to be the paramount criteria and assigned a combined weighting of 25%, split equally between them in order to balance the cost of administering the proposed Regulations with the burden of compliance to be borne by the community.

The Department assigned each option a score for the three criteria. The score reflects how well each option performs for each of the criteria relative to the base case. Scores take into account both quantified impacts and non-quantified impacts. A symmetric criterion rating scale from -10 to +10 is applied against each criterion listed above. The base case is given a zero score on all criteria.

The scores represent a quality descriptor from very low to very high relative to the impact. Impact is measured against the base case of no regulations.

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| --- | --- | --- | --- | --- | --- |
| Type of change | Very Low | Low | Medium | High | Very High |
| Negative change | -1 | -3 | -5 | -7 | -10 |
| No change | 0 | 0 | 0 | 0 | 0 |
| Positive change | +1 | +3 | +5 | +7 | +10 |

While the Department identified and assessed various options, it should be noted that the proposed Regulations are substantially similar to the current Regulations. As above, safety has been at the forefront of the analysis while balancing it against costs to government and community.

The following sections outline the options assessed via the MCA on a per proposal basis.

**Knowledge and skills – marine licensing**

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| Option 1 (preferred) | Knowledge test (status quo)  The status quorequires an applicant for a marine licence to pass a knowledge test set by the Safety Director of Transport Safety Victoria (TSV). The knowledge test is a test of the person’s understanding of the requirements of the Marine Safety Act, the proposed Marine Safety Regulations and waterway rules. |
| **Option 2** | Knowledge test and practical on-water course  Option 2 would require the applicant to pass a knowledge test set by the Safety Director (as detailed in Option 1) and also complete an on-water practical course under the supervision of a licensed vessel operator. This option is similar to what is required in New South Wales for an NSW General Boat Licence. |
| **Option 3** | Knowledge test and mandatory on-water assessment  This option requires applicants to pass a knowledge test set by the Safety Director (as detailed in Option 1), and also complete an on-water assessment. The difference between Option 3 and Option 2, is that there is a mandatory test of practical skills (instead of just the completion of a course for practical skills). |

The preferred option is Option 1 (status quo) It scores well on safety while minimising costs to government and community relative to Options 2 and 3. Options 2 and 3 come at much higher costs that the preferred option but only achieve slightly higher safety outcomes. This is because of the high costs associated with establishing and operating on-water practical courses and testing regimes, particularly as they do not exist and will need to be established from a zero base.

**Endorsements (personal watercrafts)**

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| Option 1 (preferred) | PWC endorsement with a knowledge test (status quo)  Operators would require both a marine licence and a PWC endorsement on that licence in order to be permitted to operate a PWC. In order to obtain a PWC endorsement, under this option, the person would need to:   * hold a marine licence (or be in the process of applying for a marine licence), and * successfully complete a knowledge test in relation to the operation of PWCs. |
| **Option 2** | PWC endorsement with knowledge test and a mandatory on-water assessment  Option 2 would go further than Option 1 in that it would require a marine licence holder to obtain a PWC endorsement, but the requirements to obtain that endorsement would be stricter. In particular, the licence holder would be required to sit a mandatory on-water assessment |

The preferred option is Option 1 (status quo). It scores well on safety while minimising costs to government and community relative to Option 2. Option 2 comes at much higher costs than the preferred option and is likely to achieve only a slightly higher safety outcome. The basis of the cost difference is due to the high costs associated with establishing and operating an on-water practical assessment regime, particularly as they do not exist and will need to be established from a zero base.

**Vessel standards and safety**

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| Option 1 (preferred) | ‘Fit for purpose' vessel requirements – registration conditions (status quo)  Under Option 1, the proposed regulations would define the meaning of a vessel being fit for purpose. The proposed regulations would list a range of conditions or performance standards that the vessel must meet. This option will not require vessels to be built to a specified standard. However, requiring vessels to be ‘fit for purpose’ as a condition of registration provides a means to set a minimum standard for recreational vessels in relation to its seaworthiness. |
| **Option 2** | Prescribe standards for recreational vessels  A more detailed approach to improving vessel safety is to require the vessel to be built and maintained to a certain standard such as and Australian Standard (e.g. AS 1799). Option 2 would require vessels to be built to the AS 1799 standard. Key components of this standard relate to maximum load, persons and power capacities, hull design, cooking and heating systems, reserve buoyancy, stability, fire protection, testing of power boats |
| **Option 3** | ‘Seaworthiness’ inspections of vessels  In addition to requiring vessels to meet minimum set of standards to improve safety of the vessels, there could be requirements to have vessel inspections to examine whether vessels actually meet those requirements or standards. Therefore, Option 3 requires there be a prescribed standard that all recreational vessels must comply with and requires the owner of a vessel to have that vessel inspected at prescribed intervals. |

The Department has assessed that Option 1 is the preferred option with that option scoring highest. The Department notes that, while the other options are likely to result in better safety outcomes, there is a higher cost in adopting those options.

**Vessel identification**

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| Option 1 (preferred) | Supply HINs on registration of the vessel if known (status quo)  Under this option, information relating to the HIN that is affixed to the vessel would need to be provided on the initial registration of the vessel. However, this information will only need to be provided if the vessel has a HIN affixed to the vessel. There would be no requirement for vessels without HINs to have a HIN fitted to the vessel. There would also be no verification of the HINs provided on registration. |
| **Option 2** | Verification of HINs  Option 2 builds on Option 1 in that it requires the same type of information required under Option 1 (status quo), with the added requirement that the HIN on the registered vessel must be verified. Since all new vessels have a HIN installed on the vessel, the primary regulatory burden imposed by this option is to have that information verified before the vessel can be registered. |
| **Option 3** | Retrospective application of HINs to older vessels  This option builds on Option 2. HINs would need to be verified on registration of a new vessel per the requirement under Option 2. However, under this option, any vessel which does not have a HIN attached to the vessel would need to have a HIN newly affixed to the vessel. This option would expand the number of vessels that have a HIN affixed to it, and further improve enforcement capability in relation to reducing vessel-related crime. |

The result of the MCA is that the preferred option is Option 1 (status quo). While option 2 would likely do more to reduce crime and assist with law enforcement it would come at a higher cost to government and the community. Option 3 would come at an even higher costs with little incremental benefit.

There are two additional reasons why the Department prefers Option 1 over Option 2. At present there is national consideration of matters to do with the development and implementation of a national database with shared permissions across jurisdictions. Additionally, there is much work required to establish the mechanisms for the verification requirement for HINs. This may require a legislative amendment to establish and administer an accreditation regime.

**Safety equipment**

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| Option 1 (proposed) | Status quo with improvements  This option would build on Option 1 in that there would be a range of safety equipment required to be available in a vessel. This safety equipment includes lifejackets, accepted marine radios and alternatives to flares. This includes:  Life jackets:   * changing the references to ‘Lifejackets’ from PFDs * increasing the age of compulsory lifejacket wearing to 12 years old * phasing out of all non-Australian standards * mandating PFDs to be worn as they are designed to be and in accordance with the manufacturer’s instructions * require a person on a recreational who is on a vessel but with children onboard, to wear a lifejacket at all times.   Marine radio   * only a VHF marine radio can be used to comply with the requirement to have a marine radio in specified circumstances.   Alternatives to flares  Given the issues with the carriage of flares, including their limited us and the difficultly in relation to the disposal of flares, the Department is proposing prescribing alternatives to flares. The alternatives include:   * a compressed air horn, * a GPS enabled emergency position indicating radio beacon (EPIRB), or * a personal locator beacon (PLB). |

Relative to the base case of no regulations, the proposed option above is better than no safety equipment at all. The Department considers that there continues to be a need to require safety equipment and that the improvement to the range of safety equipment will improve safety outcomes.

**Pilotage service providers**

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| Option 1 | Prescribe safety standards (status quo)  One option is to maintain the requirement for PSPs to implement systems and controls in relation to the management of fatigue, and impairment by drugs or alcohol. These requirements would effectively be the same requirements that currently apply to PSPs that are prescribed in the Marine Safety Regulations 2012. This option recognises that fatigue, drugs and alcohol will have an impairing effect on a sea pilot and will impact on the pilot’s ability to safely navigate a ship. Therefore, these factors pose a significant source of risk that must be managed. |
| **Option 2 (preferred)** | Prescribe a safety management system  This option prescribes a safety management system that must be complied with in the Regulations. This means that a PSPs would need to prepare, maintain a safety management system and comply with the measures, systems and procedures outlined in that system.  The regulations would need to specify the specific components of the safety management system that would need to be prepared. This could be done a number of different ways. For example, the regulations could refer to a pre-existing standard, code of practice or guideline. Alternatively, safety management system requirements could be directly specified in the regulations. |
| **Option 3** | Voluntary code of practice  An alternative to prescribing specified regulatory requirements in relation to safety management systems or requiring the implementation of systems and procedures to manage risks, is to have a non-mandatory approach. For example, a code of practice could be implemented to outline what the government’s preferred approach to implementing systems and procedures to manage key safety risks in the provision of pilotage services. However, PSPs would still be free to determine their own systems and procedures.  Under this option, there would be no formal regulatory requirements to prepare a safety management system. Nevertheless, other regulatory requirements, such as registration with the Safety Director and compliance with the general safety duty, would still apply.  In effect, this option would rely on the actions of PSPs to appropriately identify safety risks and hazards and implement controls to eliminate or manage those risks and hazards. However, there would be a model that PSPs could draw on when developing their systems. |

The result of the MCA is that Option 2 is the preferred option. This option will best enable the safety regulator to conduct audits of the PSPs to determine compliance with the general safety duties and ensure that safety risks are being appropriately managed. Whilst option 3 will not impose costs on PSPs, the Department does not expect that a voluntary code of practice would be adopted by PSPs which would limit that option’s efficacy in achieving the safety objective.

**Summary of the preferred option**

The following outlines the preferred options and the proposed changes to the current Regulations.

|  |  |
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|  | Preferred options and proposed changes to current Regulations |
| Marine licensing | Knowledge test (status quo) |
|  | This option would require the applicant to pass a theory-based knowledge test based on their understanding of the Act, proposed regulations and waterway rules. Applicants can either study the *Recreational Boating Safety Handbook 2021*, as issued by TSV, or attending a course run by an accredited training provider. |
| Endorsements (PWC) | PWC endorsement with a knowledge test (status quo) |
|  | Where an applicant has already obtained a marine licence and in doing so has passed a multiple-choice knowledge test based on the handbook, as issued by TSV. Additionally, they will be required to acquire further learnings about safety and pass a test as it specifically relates to PWCs through content within the same handbook. They must achieve a pass mark of 87% from a 15-question multiple-choice test. |
| Vessel standards and safety | ‘Fit for purpose’ vessel requirements (status quo) |
|  | This option requires vessel owners to ensure their vessel is fit for purpose as per a list contained within the Regulations that outline a combination of conditions and performance standards that the vessel must meet in order to be deemed fit for purpose (i.e. recreational boating). The measures within the list relate to major systems and items on board a recreational vessel that must be operable to enable a vessel to function properly. |
| Vessel identification | Supply HINs on registration of the vessel if known (status quo) |
|  | This option requires vessel owners to provide information relating to the HIN at registration, but only when the vessel already has an existing HIN affixed to that vessel. HINs would not be verified under this option. |
| Safety equipment | Status quo with improvements |
|  | This option requires the use of a range of equipment in different circumstances. It requires incremental improvements made to the types of safety equipment required. These are:  PFDs: The proposed reforms will require vessel masters to carry on board and wear a PFD. The age of compulsory PFD wearing for children will be increased up to 12 years of age. All PFDs built to non-Australian standards will be phased out to ensure that importers, retailers and recreational vessel owners only supply PFDs that are built to the Standard AS 4758. The proposed regulations will explicitly require boaters to wear the PFD as designed and in accordance with the manufacturer’s instructions.  Radios: Currently boaters can use 27MHz radio. The proposed regulations will mandate vessel owners to install a VHF marine radio.  Flares: The proposed regulations require vessels to carry flares or other devices such as EPIRBs and offers recreational vessel owners the choice of device to perform alerting functions. These alternate devices mitigate risks associated with the carriage, use and disposal of flares. |

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| --- | --- |
| Pilotage service providers | Prescribe a safety management system |
|  | This option requires the preparation of a safety management system. Effectively, this means that PSPs will need to consider a range of risks and hazards that may arise in the provision of the pilotage services. The management of these risks would be documented, and active steps taken to eliminate those risks or hazards or manage them. The safety management system will complement existing obligations under the general safety duty. |

**Impact of proposed regulatory reforms on small business and competition**

The Department considers that any impacts to competition or small business will be insignificant.

The proposed Regulations primarily regulate recreational boaters and not businesses, and so the regulations which relate to the registration of vessels, the licensing of masters and operational safety requirements will not have any small business impacts.

While pilotage service providers are the subject of regulation under the proposed Regulations, these organisations are not small businesses given the size of their revenues. It would not be feasible for a small business to run pilotage services. Therefore, the proposed Regulations in relation to the provision of pilotage services do not have small business impacts.

Furthermore, the proposed Regulations do not impose any barriers to entry or enforce a change to the conduct, structure or performance of businesses. Therefore, the proposed Regulations do not have competition impacts. The proposed Regulations will not limit the number or range of suppliers or limit their ability to compete.

**Implementation**

The Department intends to extend the operation of the current Regulations for a period of 12 months, so that there is sufficient time to consider feedback from any submissions made to the RIS and to ensure that there is sufficient time to implement any changes to the new Marine Safety Regulations 2022.

Following the public consultation period, the Department will consider all submissions and comments made by stakeholders on the proposed Regulations. After this, the Department will submit its final recommendations to the Minister for Fishing and Boating for approval. The Minister will publish a notice of decision in the Government Gazette and in newspapers. This notice will outline the changes from the exposure draft of the proposed Regulations.

When introduced, the proposed changes will not impose substantial changes in requirements but will impact vessel masters, operators, owners, service providers, industry and community interest groups. The implementation of these changes will include a series of activities that involve direct engagement of the impacted groups and/or their representatives, as well as communication to the broader community for awareness. TSV will be the primary agency to undertake communication and consultation with the industry and the public to implement the new regulations.

**Enforcement**

The Department has consulted with agencies including TSV, Victoria Police, to ensure that any new or amended regulations can be enforced in a practical and effective manner.

VicRoads provides these agencies with access to its registration and licensing computer systems to enable the identification of offenders, checking of marine licensing and registration records and to support enforcement action.

**Evaluation**

The success of the proposed Regulations will be evaluated on an ongoing basis until they sunset in ten years’ time. The evaluation will be conducted by the Department. The Department will seek to establish an intradepartmental committee with its key stakeholder partners, providing an ongoing forum where any issues with marine safety regulations can be brought to the Department’s attention as they arise.

The Department also intends to undertake a mid-term review of the proposed Regulations to assess how these are operating, approximately five years after the commencement of the proposed Regulations. This mid-term review is planned to commence in 2023/24. As part of the mid-term review, the Department will commission additional research to fill in data gaps to support the analysis.

The Department will undertake the evaluation drawing on information and input from various relevant sources. It will primarily draw on data and information collected by the Department, Victoria Police and studies commissioned by the Department. This includes licensing and registration data, infringement data, penalties imposed by the Courts for driving offences, data and information relating to fatalities and serious injuries and information and data kept by the Department as records (as required by the proposed Regulations).

**Communication and consultation**

The Department conducted targeted consultation for input into this RIS. This consultation occurred in the second half of 2021 with the following stakeholders:

* Transport Safety Victoria
* Victoria Police
* Emergency Management Victoria (on behalf of marine search and rescue agencies)
* Boating Industry Association of Victoria
* VRFish
* Sailing Australia
* Accredited Training Providers
* Marine insurers
* Jetski club.

This RIS and exposure draft of the proposed new Regulations has been released for further consultation with the community. In addition to providing submissions as a response to the public consultation process, a survey has been compiled that the public can access online at Engage Victoria (engage.vic.gov.au) as an efficient way of providing feedback on the proposed Regulations. The RIS consultation process will provide another mechanism by means of which any stakeholders will be able to submit their views on the key issues discussed in this RIS.

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# Background

## The Marine Safety Act 2010 and the Marine Safety Regulations

The *Marine Safety Act 2010* (the Marine Safety Act) is the primary statute to regulate marine safety in Victoria.

The Marine Safety Act establishes a range of regulatory requirements on:

* recreational boaters, including the masters and owners of recreational vessels and the passengers of those vessels
* port management bodies, local port managers, and the port of Melbourne operator
* persons who manage boating activity events
* marine designers, manufacturers and suppliers
* pilotage service providers
* contractors for marine safety infrastructure operations to port managers
* marine safety workers.

Domestic commercial vessels (i.e. vessels used for commercial, government or research purposes within Australian domestic waters only) are regulated under a national scheme (the Domestic Commercial Vessel National Law) and do not fall under the Marine Safety Act. Similarly, the regulation of masters and crew of domestic commercial vessels is under the national system.

### Safety duties

The Marine Safety Act primarily regulates for safety through the imposition of general safety duties on participants in the sector. This is a principles-based approach to the regulation of safety.

There are two types of duties. The first is a requirement to ensure safety, so far as is reasonably practicable. Under this duty, safety duty holders under the Marine Safety Act are required to ensure, so far as is reasonably practicable, safety in respect of a range of marine activities depending on the person. This duty is placed on persons or entities who have a level of control over the management or elimination of risks to safety. This includes:

* port management bodies and local port managers,
* Port of Melbourne operator,
* persons who manage boating activity events,
* persons who design, manufacture and supply vessels and marine safety equipment, and
* pilotage service providers.

This safety duty requires duty holders to assess their business, activities or operations and identify risks and then take steps that are reasonably practicable and either eliminate those risks or, if that is not possible, manage/control those risks. The safety duty approach is not prescriptive and allows duty holders to manage safety in a cost effective and efficient manner based on the best-practice approaches technology available at the time.

The other type of duty under the Marine Safety Act is a duty to take reasonable care for the person’s own safety. This duty is imposed on persons who may not be in a position to manage or eliminate risks (such as a passenger on board a vessel). Instead, a requirement to take reasonable care is imposed on those persons. This means that the person needs to take precautions or steps to ensure they are safe. The steps taken will depend on the circumstances and situation relevant to the person.

### Licensing, registration and other permissions

There are a range of permissioning schemes established under the Marine Safety Act. These include:

* the registration of recreational vessels,
* the licensing of masters of recreational vessels and regulated hire and drive vessels,
* requirements to obtain a local knowledge certificate when navigating vessels in certain waters,
* the registration of pilotage service providers,
* the licensing of harbour masters,
* the licensing of pilots, and
* pilot exemptions (a master of a vessel can apply to Transport Safety Victoria (TSV) to be exempt from the requirement to use a pilot subject to demonstrating certain requirements).

These requirements to hold or obtain these permissions are established in the Marine Safety Act through a range of offences. In some cases, the detail of how to obtain a permission or some of the ongoing requirements that sit under the permission are left to be prescribed in Regulations.

### Waterway management

One of the other functions that the Marine Safety Act undertakes is to regulate the use of waterways. It does this by:

* giving the Safety Director power to make waterway rules (equivalent to how road rules apply to the use of vehicles on Victorian roads). Rules are in place to regulate speed, navigation etc on the water,
* providing for the appointment of waterway managers, and
* powers in relation to the management of boating activities (e.g. events) and providing for exemptions to waterway rules or establishing exclusion zones where the general public may not enter certain waters.

### Regulatory fees and the Better Boating Fund

The Marine Safety Act permits prescribing regulatory fees to recover the costs of marine safety regulation and fees to raise money for the provision of and maintenance of boating facilities and conducting boating safety programs

These fees are prescribed under the Marine Safety (Fees) Regulations 2021. These regulations were the subject of a regulatory impact statement (RIS) in 2021. Consequently, regulatory fees are not considered as part of the draft Marine Safety Regulations 2022 and this RIS.

The Marine Safety Act also establishes the Better Boating Fund. Revenue received from marine safety fees (including marine licensing revenue and revenue from fees paid at the time of registration) must be paid into the fund at the Treasurer’s discretion and direction. Monies in the Fund can be used for:

* money for the provision of and maintenance of boating facilities, and
* conducting boating safety programs.

### The Marine Safety Regulations 2012

The Marine Safety Regulations 2012 are made under the Marine Safety Act. The Regulations prescribe a range of matters to support the operation of the Marine Safety Act.

This includes in relation to:

* the registration of vessels (applications for registration, the transfer of registration, identification marks, conditions of registration)
* the licensing of masters and the provision of endorsements (exemptions, applications for a licence, renewal of licences, conditions)
* the operation of vessels (regulating the carriage and use of equipment, requiring lifejackets to be worn in specified circumstances)
* enforcement (Including providing for the seizure and impoundment of recreational vessels, and the testing of devices used for enforcement of
* prescribing safety standards that must be followed by pilotage service providers

While the Marine Safety Act establishes schemes and process to ensure safety, the Act is reliant on the Regulations to prescribe the detail of those schemes.

## Other relevant legislation

There are several other Acts and regulations that are relevant to achieving objectives of improving marine safety. These include:

* the *Transport Integration Act 2010*
* the *Marine (Drug, Alcohol and Pollution Control) Act* 1988
* the *Transport (Safety Schemes Compliance and Enforcement) Act 2014*.

The Transport Integration Act achieves two purposes: it establishes principles and objectives for the management of the transport network (including use of vessels on waterways) and establishes the office of the Safety Director, who is responsible for administering and enforcing the Marine Safety Act and Regulations. The Safety Director is a statutory office and is supported by TSV, which is comprised of officers of the Department of Transport (the Department).

The Marine (Drug, Alcohol and Pollution Control) Act prescribe offences in relation to drugs and alcohol, including prohibiting masters and other persons involved in vessel operations from being under the influence of certain prescribed drugs or impaired by alcohol. Additionally, the MDAPC Act allocates responsibilities in order to be able to respond to marine incidents that may result in pollution of waters.

The Transport (Safety Schemes Compliance and Enforcement) Act contains powers for the Safety Director and transport safety officers to conduct compliance monitoring and investigations. This includes the powers of entry onto vessels. Transport Safety Officers are officers appointed under the Transport (Safety Schemes Compliance and Enforcement) Act. There is also provision in relation to enforcement, enabling:

* infringement notices, improvement notices, prohibition notices to be issued, and
* prosecution, and the imposition of court orders.

## Relevant policies, strategies and agreements

### Australian Builders Plate Standard

There is a national committee, Australian Recreational Boating Safety Committee, which comprises members from Australian State and Territory marine regulators. The Committee:

* Identifies nationally significant boating safety issues and develops responses to those issues.
* Promotes uniform approaches to identified recreational boating safety issues such as standards, policies, procedures, regulations and safety campaigns.
* Monitors national and international developments in recreational boating safety.
* Considers issues arising from coronial investigations.

One of the Standards that is maintained by the committee is the Australian Builders Plate Standard (the ABP Standard). An Australian Builders Plate (ABP) is an information plate that is attached to most new powered recreational vessels. It contains information in relation to the safe operation of the vessel, including information about the maximum capacity of the vessel, and buoyancy and flotation. The ABP Standard prescribes the information to be included on a plate and how it is presented.

### Better Boating Fund and the Victorian Recreational Boating Strategy

The Better Boating Fund, which is established under the Marine Safety Act, will return every dollar of marine licensing and boat registration fees to improving boating safety and facilities. The Fund was made operational in July 2021.

The Victorian Recreational Boating Strategy informs how money in the Better Boating Fund will be allocated. The Strategy outlines the vision and the objectives/priorities for the allocation of funds. The Strategy is supported by Action Plans, which outline the projects and actions that will be taken to give effect to the Strategy.

The objectives of the Strategy are:

* Enhance the Victorian boating experience by supporting and improving the maintenance of our public facilities.
* Enhance the Victorian boating experience by renewing existing facilities and building new ones.
* Enhance the Victorian boating experience by continuing to invest in destination locations.
* Enhance the Victorian boating experience by improving access and navigation.
* Improve waterway and boating safety by investing in marine search and rescue and boating safety and education.
* Enhance the Victorian boating experience by promoting boating across Victoria.

A number of the objectives of the Strategy are relevant to the objectives of the Marine Safety Actwhich relates to safety. In particular, there are opportunities to improve infrastructure to ensure that risks and hazards relating to the safety of recreational boaters are eliminated or mitigated.

## Governance

Several government offices and agencies are involved in promoting marine safety. This includes:

* The Minister for Ports and Freight[[1]](#footnote-2) – responsibility for matters in relation to ports and freight
* The Minister for Fishing and Boating – responsibility for recreational boating
* The Department of Transport – provides advice to the Minister for Ports and Freight and the Minister for Fishing and Boating
* The Safety Director – a statutory office established under the Transport Integration Act. The Safety Director is vested powers to administer, monitor compliance with and enforce the Marine Safety Act and Regulations (these responsibilities extend to other legislation as well).
* Marine Safety Victoria branch of TSV – an agency consisting of Department of Transport employees created to support the Safety Director in fulfilling its functions and powers. TSV contains two branches, Bus Safety Victoria and Marine Safety Victoria.
* Victoria Police – has powers to monitor compliance with and enforce the requirements of the Marine Safety Act and Regulations. There is a dedicated water police unit who undertakes this compliance monitoring and enforcement.
* VicRoads – administers vessel registration and marine licensing on behalf of the Safety Director under a service level agreement.

## Data on recreational boating

Data collected by TSV shows that in the past decade, there has been a marked increase in both the number of recreational vessels registered in Victoria and the number of general marine licences and endorsements for personal watercrafts (PWCs). This increase in numbers suggests an increase in people and boat traffic on the waterways and this indicates an increase in the exposure of recreational boaters to the risks associated with the activities. While not necessarily affecting the potential severity of a harm or hazard, the growth in recreational boating can increase the likelihood of the harm being realised (i.e. the risk of harm occurring can be increased).

### The number of recreational vessels

Table 2‑1 shows that on average, the number of registered recreational vessels has grown by around 2.15 per cent per annum from 2014 to 2021 in Victoria. As of 30 June 2021, the total number of registered vessels in Victoria was around 201,500. The increase in boat numbers has resulted in increased potential for congestion and collisions, especially around launch sites and popular recreational locations.

Table 2‑1: Number and type of recreational vessel registrations, as of 30 June of each year from 2014 to 2021

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vessel type | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Canoe | 77 | 159 | 185 | 214 | 213 | 189 | 175 | 153 |
| Cabin Cruiser | 5,692 | 5,914 | 5,846 | 5,898 | 5,919 | 5,852 | 5,903 | 5,977 |
| Half Cabin | 26,974 | 28,678 | 28,540 | 28,804 | 28,778 | 28,480 | 28,844 | 28,989 |
| Houseboat | 665 | 696 | 704 | 718 | 726 | 720 | 734 | 743 |
| Hovercraft | 764 | 890 | 885 | 868 | 862 | 832 | 831 | 856 |
| Open | 119,095 | 129,367 | 129,277 | 130,776 | 131,467 | 131,005 | 132,363 | 133,789 |
| PWC | 15,611 | 19,139 | 20,016 | 21,095 | 22,431 | 23,700 | 24,490 | 26,062 |
| Ski Boat | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Trailer Sailor | 2,175 | 2,276 | 2,222 | 2,191 | 2,172 | 2,139 | 2,117 | 2,135 |
| Yacht (Keel Boat) | 2,544 | 2,730 | 2,753 | 2,782 | 2,769 | 2,765 | 2,791 | 2,827 |
| **Total** | **173,597** | **189,849** | **190,428** | **193,346** | **195,338** | **195,682** | **198,248** | **201,532** |

Source: Transport Safety Victoria

The fastest growing category of registered vessel was PWCs numbering 26,062 as of 30 June 2021, or 14 per cent of the total. The steady increase in PWC ownership over these years is driven by factors such as:

* the low price of a PWC compared with a boat has also influenced some owners to purchase PWCs, which can be housed, transported and carried to the water with relative ease
* PWC’s are now more versatile and are being used for a range of activities traditionally undertaken in a boat, including fishing. Fishing is an activity that has been targeted by manufacturers, and users are embracing the quick speeds and low cost of PWCs.
* their speed, make PWCs increasingly attractive to younger age groups.

### Marine Licences

Table 2‑2 shows that for the period 2016 to 2021, general licences without a PWC endorsement declined from 163,887 on 30 June 2016 to 151,352 on 30 June 2021, representing a decline of 7.6 per cent over the period. Over the same period, general licences with a PWC endorsement increased from 224,636 on 30 June 2016 to 279,688 on 30 June 2021, representing an increase of 24.5 per cent. This is relatively consistent with the 30 per cent increase in registered PWCs from 2016 to 2021 (20,016 PWCs in 2016 to 26,062 PWCs in 2021, as shown in Table 2‑1) – more licences are now being issued with a PWC endorsement because of the increase in use of PWCs.

For the period 2016 to 2021, restricted licences (licences for those aged between 12 and 16 years of age) without a PWC endorsement increased from 636 to 3,640 while restricted licences with PWC endorsement declined over the same period from 6,272 to 286. This is primarily due to changes to the legislation in 2017, where persons under the age of 16 are no longer able to obtain a PWC endorsement on their restricted marine licence. Thus, as new restricted licences were issued or renewed, they could no longer be renewed or issued with a PWC endorsement.

Table 2‑2: Licences by age as of 30 June for each year from 2016 to 2021

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Licence type | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| General licence without PWC endorsement | 163,887 | 162,973 | 157,657 | 155,466 | 152,528 | 151,352 |
| General licence with PWC Endorsement | 224,636 | 238,047 | 247,330 | 258,942 | 264,199 | 279,688 |
| Restricted licence without PWC endorsement | 636 | 540 | 1,406 | 2,570 | 3,192 | 3,640 |
| Restricted licence with PWC endorsement | 6,272 | 6,071 | 5,280 | 2,719 | 1,289 | 286 |
| **Total** | **395,431** | **407,631** | **411,673** | **419,697** | **421,208** | **434,966** |

Source: Transport Safety Victoria

## How you can have your say

You are invited to make comments on the RIS and the proposed Regulations.

Submissions may present analysis of alternative options and recommend changes to the proposed Regulations.

Submissions are required to be made in writing and submitted on [Engage Victoria](https://engage.vic.gov.au/).

Submissions must be provided on or before 15 August 2022.

Please note that all submissions will be treated as public information unless you request otherwise.

You should be aware that all submissions are subject to the *Freedom of Information Act 1982*.

Personal information may be used to contact you regarding your submission and the outcomes of the consultation. Please clearly state in your submission if you do not wish for this to occur.

# The Nature and Extent of the Problem

## The overarching problem

### Key drivers relating to marine safety

The operation of marine vessels and associated safety equipment poses risks and potential harms to operators, passengers and the public that require appropriate regulation to minimise their potential adverse impact on the number of lives lost and serious injuries and infrastructure damage in Victoria.

The key drivers are:

* Operators need to be adequately knowledgeable and skilled in order to operate the vessel, both to avoid an incident from occurring and during an incident
* Vessels used in the course of operating on a waterway should be fit for purpose and minimise the risk of an incident occurring
* That actions taken or failed to be taken can contribute to the safe operation of a vessel
* That without regulations, vessels and their operators cannot be identified if an incident occurs, so operators of these vessels cannot be held responsible for the safety of the vessel and offences and incidents involving the vessel
* Safety equipment needs to be in working order and available on the vessel so that it can be used effectively if required.

Factors that influence the nature and severity of these drivers are:

* Human factors (behaviours) that may contribute to events such as collisions
* Lack of competence and risk-taking relating to vessel operation and passenger care
* Structural characteristics of vessels
* Consumer decision making
* Design and building standards
* Vessel maintenance
* Adequate safety equipment and competent use
* Water conditions such as its temperature
* The number of water users at one place at one time
* Objects that may exist in the water such as debris

These drivers and factors are discussed within each of the sub sections of this chapter.

As a result of the above there is a high cost associated with marine safety incidents and their outcomes in terms of fatalities, serious injuries, the hospital system and damage to vessels.

### Extent of the problem – marine safety incidents and data

#### What is a marine safety incident?

The Marine Safety Act (see Section 3 of the Act) defines a marine incident as an event causing or involving any of the following outcomes in connection with the operation of a recreational vessel:[[2]](#footnote-3)

|  |  |
| --- | --- |
| * the death of, or injury to, any person on board a vessel, or caused by a vessel * the loss of a person from a vessel/ person overboard * the collision, loss or presumed loss of a vessel * the abandonment, loss or presumed loss of a vessel | * the collision of a vessel with another vessel or with an object * the grounding, sinking, flooding or capsizing of a vessel * a fire or explosion aboard a vessel * loss of stability affecting the safety of a vessel * structural failure of a vessel or loss of stability. |

Vessel incidents must be reported to the Victorian Police immediately, or as soon as is practicable after the incident. Incident statistics are collected by TSV and recorded on the Marine Incident Record (MIR) Database. Incident reports are compiled whenever an incident occurs to which there has been a response by the Victorian Police (generally the Water Police) or a search and rescue organisation or when an incident is reported by a vessel operator, waterway or port manager or other source.

#### Incident type

Based on the data provided by TSV on reportable incidents for the period 2014-15 to 2018-19, Table 3‑1 shows there were a total of 6,726 marine safety incidents recorded. The majority of incident types for the 5-year period related to disablement of vessels, with 5,561 (or 82 per cent) of incidents related to vessel disablement[[3]](#footnote-4). The Department understands that disablements commonly occur because of mechanical failure, flat batteries or old fuel remaining in the vessel after a long period of no use (e.g. over winter). Disablements are the primary reason why marine search and rescue are called upon.

The next highest incident type for the total period was grounding (363 incidents), followed by person in trouble (185 incidents), capsizing (164 incidents) and collision (112 incidents). The total incidents reported to TSV during the period from 2014-15 to 2018-19 remained relatively stable, with all years reporting incidents in the 1,300s.

Table 3‑1: Incident numbers by type from 2014-15 to 2018-19

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Incident type | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | Total |
| Capsizing | 34 | 46 | 37 | 23 | 24 | **164** |
| Close Quarters | 8 | 8 | 6 | 3 | 2 | **27** |
| Collision | 24 | 24 | 23 | 24 | 17 | **112** |
| Disablement of Vessel | 1,106 | 1,112 | 1,065 | 1,087 | 1,191 | **5,561** |
| Explosion | 3 | 2 | 3 | 0 | 0 | **8** |
| Fire | 9 | 6 | 6 | 7 | 9 | **37** |
| Flooding | 12 | 18 | 9 | 15 | 16 | **70** |
| Grounding | 69 | 77 | 72 | 68 | 77 | **363** |
| Loss of Stability | 1 | 0 | 0 | 1 | 1 | **3** |
| Loss or presumed loss of vessel | 3 | 0 | 0 | 1 | 0 | **4** |
| Onboard incident | 12 | 15 | 10 | 2 | 2 | **41** |
| Other Personal Injury | 5 | 4 | 9 | 12 | 14 | **44** |
| Person in Trouble | 39 | 31 | 41 | 43 | 31 | **185** |
| Person Overboard | 18 | 13 | 9 | 14 | 9 | **63** |
| Sinking | 0 | 0 | 0 | 0 | 1 | **1** |
| Structural failure | 3 | 2 | 3 | 2 | 1 | **11** |
| Swamping | 6 | 4 | 7 | 11 | 3 | **31** |
| Unknown | 0 | 0 | 0 | 1 | 0 | **1** |
| **Total** | **1,352** | **1,362** | **1,300** | **1,314** | **1,398** | **6,726** |

Source: Transport Safety Victoria

#### Incidents resulting in fatality or serious injury

The previous table presented incident data based on the type of incident. Table 3‑2 presents this incident data categorising incidents by their outcome or severity.

In terms of incidents that resulted in a consequence to personal safety (i.e. incidents related to the welfare of a person and include fatalities, serious injury, minor injury and missing person) there was a total of 40 fatalities, 97 serious injuries, 20 minor injuries and 2 missing persons over the period from 2014-15 to 2018-19[[4]](#footnote-5).

Table 3‑2: Marine incidents and outcome severity from 2014-15 to 2018-19

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Incident severity | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | Total |
| Fatal Incident | 9 | 8 | 6 | 8 | 9 | **40** |
| Serious Injury | 26 | 20 | 24 | 16 | 11 | **97** |
| Minor Injury | 0 | 0 | 0 | 0 | 20 | **20** |
| Missing Person | 0 | 0 | 0 | 0 | 2 | **2** |
| Other Vessel Damage | 85 | 80 | 91 | 58 | 52 | **366** |
| Damage to Property Only | 6 | 4 | 3 | 17 | 34 | **64** |
| Vessel Lost | 11 | 16 | 15 | 11 | 7 | **60** |
| No Damage | 1,215 | 1,234 | 1,161 | 1,204 | 1,144 | **5,958** |
| Unknown | 0 | 0 | 0 | 0 | 119[[5]](#footnote-6) | **119** |
| **Total** | **1,352** | **1,362** | **1,300** | **1,314** | **1,398** | **6,726** |

Source: Transport Safety Victoria

Of the rest of the incidents, 89 per cent (5,958 out of 6,726 incidents) resulted in no damage, 7 per cent (490 out of 6,726 incidents) resulted in vessel-related outcomes (total of other vessel damage, damage to property only and vessel lost). About 2 per cent (159 out of 6,726 incidents) resulted in consequences to personal safety (total of fatal incident, serious injury, minor injury and missing person).

Of particular note is the trend in relation to serious incidents. Figure 1 shows that while the number of fatalities over the period appear to be steady, serious injuries declined over this period.

Figure 1: Number of fatal incidents and serious injury incidents from 2014-15 to 2018-19

Source: Transport Safety Victoria

#### Incidents related to vessel type

Figure 2 shows that, for the period 2014-15 to 2018-19, vessels that were registered as cabin cruisers, half cabins or open generally made up the largest proportion of serious incidents, with just over 45 per cent of serious incidents occurring in these vessel types. However, these vessel types make up the majority of vessels in Victoria (165,337 out of a total of 195,682 recreational vessels, registered, or about 84 per cent, as of 30 June 2019). So, in general, cabin cruisers, half cabins and open vessel do not appear to overrepresent serious incidents when compared to the number of these vessel types registered.

In contrast, 18 per cent of serious incidents involved a PWC over the same period. As of 30 June 2019, PWC made up only 23,700 out of a total of 195,682 registered recreational vessels, or about 12 per cent of all registered recreational vessels. It is clear PWCs are overrepresented for serious incidents despite the lower proportion of PWC registered in Victoria.

In addition, about 13 per cent of serious incidents involved a canoe or kayak. While there were only 189 canoes registered as on 30 June 2019 and no kayaks registered, it is difficult draw any conclusions from this data because not all canoes and/or kayaks are registered (and are not required to if they are not powered by a motor). TSV have estimated there are potentially hundreds of thousands of canoes and kayaks used in Victorian waters.

Figure 2: Proportion of serious incidents by vessel type from 2014-15 to 2018-19

Source: Transport Safety Victoria

#### Analysis of contributing factors for the period 2014-15 to 2018-19

As discussed in Section 3.1.2.2, for the period 2014-15 to 2018-19, TSV recorded 6,726 marine safety incidents for recreational vessels. TSV has also recorded contributing factors against each incident (i.e. factors that contributed to the incident).

Table 3‑3 shows that, of the 6,726 incidents, a total of 6,774 contributing factors were recorded over the period from 2014-15 to 2018-19. Note that a total of 1,942 marine safety incidents had no contributory factors recorded against the incident. There can frequently be several contributing factors recorded per incident. For this reason, there are more total contributing factors than incidents recorded for the same period.

Of the 6,774 identified factors contributing to an incident over the 5-year period, 450 were identified as environmental factors, 2,428 were identified as human factors, and 3,896 were identified as material factors.

Further analysis of this data is also undertaken in later sections of this RIS reflecting on:

* how measures to improve knowledge and skills can reduce incidents caused by human factors or environmental factors, or
* how measures to improve vessel safety and security can reduce incidents caused by material factors.

Table 3‑3: Contributing factors of incident and outcome severity from 2014-15 to 2018-19

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fatal | Serious injury | Missing person | Minor  injury | Vessel or property damage / loss | No damage | Not known | Total |
| Environmental | 9 | 20 | 0 | 3 | 117 | 301 | 0 | **450** |
| Human | 30 | 111 | 1 | 4 | 351 | 1,926 | 5 | **2,428** |
| Material | 4 | 16 | 0 | 2 | 210 | 3,622 | 42 | **3,896** |
| **Total recorded** | **43** | **147** | **1** | **9** | **678** | **5849** | **47** | **6,774** |
| Not known | 21 | 24 | 1 | 14 | 147 | 1,360 | 74 | **1,641** |
| **Total** | **64** | **171** | **2** | **23** | **825** | **7,209** | **121** | **8,415** |

Source: Transport Safety Victoria

#### Limitations of the data

It is also important to note that TSV’s data only provides a snapshot of what is occurring. The number of incidents recorded could be less (particularly so in some categories) than what is actually occurring due to the fact that some incidents may simply not be reported to TSV.

Despite being required to report the incident under the Marine Safety Act, there can be multiple reasons for a boater to not report a reportable marine safety incident. This may include, for example, a lack of understanding about what incidents are required to be reported to TSV, or the boater participating in an illegal activity when the reportable marine safety incident occurs leading the boater to avoid reporting for fear of being detected performing illegal activities.

In addition, it is more likely that the more serious incidents are more likely to be reported This may be because more serious incidents involve serious injury and or fatalities, both of which are more likely to involve immediate treatment in a hospital, or the attendance by the Water Police or health professional. Taken together, the percentage of serious incidents in each category is likely to be overstated while the total number of incidents is likely to be understated. Nevertheless, it does serve as the main available source of data on contributing factors.

#### Conclusion – Extent of the problem

The Department makes the following observations in relation to marine safety based on the data available:

* The number of fatalities associated with marine safety are low and have remained in the 5 to 10 fatalities per annum range over the last several years.
* Serious injuries causing hospitalisation have been decreasing over the last several years.
* A large proportion of incidents (in excess of 80 per cent) are vessel disablements.
* There has been growth in volume of boat registrations, marine licences and in the number of small, open boats and PWCs that would indicate a continuing increase in persons exposed to risk, especially from waterway congestion. Although, in the last five years of data available, the Department hasn’t observed there to be commensurate increase in the number of incidents with this observed growth.
* Fatalities and serious injuries are more likely to have been caused by human factors compared to environmental factors or material factors. In contrast, incidents with less serious consequences, are more likely to have been caused by a material factor.

It should be noted that the data presented above is for the years prior to the COVID-19 pandemic. Even though there has been a decrease in boating activity during the pandemic, this has not been the reason boating fatalities and serious injuries have declined over the past ten years. Even when the data for the lockdown periods are removed the number of serious injuries has decreased.

Based on these observations, the Department considers that there continues to be a need to regulate for marine safety. In particular, the Department notes that the safety outcomes observed over the last several years are the result of the regulatory requirements in both the Marine Safety Act and the Marine Safety Regulations. The Department’s conjecture is that safety outcomes would be worse (i.e. there would be higher fatalities, serious and minor injuries), if the Marine Safety Regulations were not in place.

The following sections explores the nature and extent of the problem in relation to the following components of the marine safety regulatory scheme:

* Marine licensing – the extent to which the masters of recreational vessels need to have knowledge and skills in relation to the operation of a vessel before being permitted to do so
* Vessel standards and safety – whether there should be any safety requirements for recreational vessels used on Victorian waterways.
* Operational requirements – whether the masters of recreational vessels should be obligated to abide by certain rules on Victorian waterways.
* Vessel identification – whether there should be requirements in relation to the registration of vessels to uniquely identify them
* Safety equipment – whether there should be any equipment used in or on the vessel for safety purposes.

These components are in place to address specific aspects relating to marine safety and work together to achieve marine safety objectives. For example, marine licensing aims to improve knowledge and skills in the handling of a boat or understand of what to do (or not to do) when on a vessel. The purpose of vessel standards is to minimise an incident occurring as a result of a fault to the vessel. Further, operational requirements (including requirements for carrying or wearing/using equipment) are in place to minimise harms following an incident occurring. No singular regulatory measure works alone to improve marine safety outcomes. The Department considers that not having one or all such measures in place would severely affect safety outcomes. In particular, there is also consideration of whether there should be any improvements to the regulatory scheme made to further improve marine safety.

## Knowledge and skills – Marine licensing

Historically, marine licensing has been the method to ensuring that the masters of recreational vessels have sufficient knowledge, skills (competency) to operate safely on Victorian waterways.

### Background and the base case

The Marine Safety Act establishes a licensing scheme for masters of recreational vessels and regulated hire and drive vessels. The Act also sets up different licence types, which are a general marine licence, and a restricted marine licence (available for those between the ages of 12 and 16). Additionally, the Act allows the Safety Director to grant endorsements in relation to permitting the person to be a master of:

* a specific class or type of vessel, or
* a vessel undertaking a specific type of activity.

The current Marine Safety Regulations, therefore, are needed to prescribe matters that relate to the licensing schemes established under the Act.

The Safety Director has powers to issue a general marine licence, a restricted marine licence or an endorsement and may require the person to:

* pass a test of a prescribed type, or undertake training of a prescribed type, or hold a qualification.
* comply with procedural requirement prescribed in the regulations (i.e. filling in an application form).

The primary policy issue, for consideration in this RIS, is whether there should be any requirements prescribed in relation to learning, assessment or knowledge required in order to obtain a marine licence. The current requirement is to pass a multiple-choice knowledge test.

Given the purpose of licensing is to reduce the fatality, serious injury and vessel incident rates through ensuring that:

* people who are in charge of or in command of registered recreational vessels are competent masters,
* those masters are aware of safe operating practices and relevant marine safety laws,
* people who are, or who become, unsuited to be the master of a registered recreational vessel are not permitted to be the master of a registered recreational vessel, and
* the identification of masters for the purposes of law enforcement and the investigation of, and response to, marine incidents and accidents are enabled

The absence of regulations, which is the base case for the purposes of the analysis conducted in this RIS, would imply that persons do not undergo any learning or assessment in order to obtain a licence and operate a vessel of any kind (i.e. if no requirements are prescribed in regulation, then it is taken that there are no learning or assessment requirements). This would contravene the intent of the Act and result of higher than present fatalities and serious injuries (discussed and detailed further in this section).

Therefore, the key question, for the purposes of the development of regulations, is whether there should be any learning or assessment requirements prescribed in the regulations and what form this should take.

Other requirements also affecting the licensing scheme, including the length of the licence period, also need to be prescribed in regulations to support of the operation of the scheme. However, these requirements do not affect safety, but rather they are needed to efficiently and effectively administer the licensing scheme.

### Analysis of human factors

In order to understand the nature and extent of the regulatory problem, it is necessary to consider the underlying causes of and the different types of marine incidents and possible defences, foreseeable consequences and possible mitigations.

When analysing safety incidents, the causes of incidents are, generally, classified based on the contributing factor(s) to the incident. This could be:

* human factors (how well a person carries out an activity or work)
* environmental factors, or
* material factors.

The Department considers that “human factors” are the most relevant when considering issues of knowledge and skills. Human factors analysis is a field of study that combines psychology and engineering and is used widely within risk management methodology for analysing (and influencing) human performance, or how well a person carries out an activity or a piece of work.[[6]](#footnote-7) The term can be summarised as meaning:

* what people are being asked to do (the work or activity and its characteristics),
* who is doing it (the person and their competence),
* where they are working (the organisation or environmental context)[[7]](#footnote-8).

In the context of considering policy issues in relation to licensing, an analysis of human factors is important. This is because licensing could be used to address gaps in competency, understanding or knowledge. Put another way, the greater the knowledge, understanding, or competency a person has in undertaking a task or work, the less likely that person is to make an error such that it would lead to an incident causing death, serious injury or property damage. Effectively, licensing could be used to ensure that participants in an activity, such as recreational boating, have a minimum level of competency, knowledge or understanding, thereby reducing human error.

Table 3‑4: Factors contributing to recreational vessel by incident severity type, 2014 -15 to 2018-19

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fatal incident | Serious injury | Missing person | Minor injury | Vessel or property damage / loss | No damage | Not known | Total |
| **Environmental** | **9** | **20** | **0** | **3** | **117** | **301** | **0** | **450** |
| **Human** | **30** | **111** | **1** | **4** | **351** | **1926** | **5** | **2428** |
| Alcohol or Drugs | 3 | 3 | 0 | 0 | 5 | 6 | 0 | 17 |
| Error of Judgement | 8 | 32 | 0 | 1 | 124 | 372 | 2 | 539 |
| Excessive Speed | 1 | 13 | 0 | 0 | 10 | 5 | 0 | 29 |
| Failure to Keep a Proper Lookout | 0 | 15 | 0 | 2 | 43 | 36 | 0 | 96 |
| Fatigue | 0 | 2 | 0 | 0 | 5 | 27 | 0 | 34 |
| Ill Health | 4 | 3 | 0 | 1 | 1 | 13 | 0 | 22 |
| Inexperience | 8 | 15 | 1 | 0 | 68 | 337 | 2 | 431 |
| Insecure Mooring | 0 | 0 | 0 | 0 | 2 | 12 | 0 | 14 |
| Lack of Fuel | 0 | 0 | 0 | 0 | 4 | 414 | 0 | 418 |
| Lack of Maintenance | 2 | 1 | 0 | 0 | 20 | 482 | 0 | 505 |
| Navigational Error | 0 | 6 | 0 | 0 | 52 | 129 | 0 | 187 |
| Other | 2 | 20 | 0 | 0 | 16 | 88 | 1 | 127 |
| Overloading | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 |
| Unable to Swim | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 5 |
| Other/Unknown | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| **Material** | **4** | **16** | **0** | **2** | **210** | **3622** | **42** | **3896** |
| **Total recorded** | **43** | **147** | **1** | **9** | **678** | **5849** | **47** | **6774** |
| Other/Unknown | 21 | 24 | 1 | 14 | 147 | 1360 | 75 | 1642 |
| **Total** | **64** | **171** | **2** | **23** | **825** | **7209** | **122** | **8416** |

Source: Department of Transport analysis of Transport Safety Victoria data

The range of recreational marine incidents attributable to human factors, material factors and environmental factors is shown in Table 5 below. The table shows that the most common cause of recreational boating incidents can largely be attributed to “human factors”.

According to Table 3‑4, error in judgement, lack of maintenance, inexperience and lack of fuel were the most identified out of all human factors. These factors were recorded more than 400 times each over the period from 2014-15 to 2018-19. However, the majority of incidents due to lack of maintenance and lack of fuel resulted in no damage (99 per cent and 95 per cent, respectively), with lack of fuel not recorded against any serious incident, and lack of maintenance recorded against three serious incidents.

When considering the number of serious incidents only, error of judgement and inexperience were factors recorded most often against serious incidents (error of judgement was recorded as a factor for serious incidents 40 times and inexperience was recorded as a factor for a serious incidents 24 times, respectively).

*Other insights*

The Department did not consider the proportion of serious incidents for each human factor when assessing the severity of certain human factors. This is due to the low sample sizes for some human factors over the period. For example, overloading as a contributory factor was only recorded twice against marine safety incidents, with one of these resulting in a serious incident. On face value, this would suggest that overloading has a 50 per cent chance of causing a serious incident, which is the highest proportion out of all human factor incidents to cause of serious incidents (the next highest is excessive speed at 48 per cent chance of causing a serious incidents). However, the overall likelihood of overloading is small (it has only been reported twice), so it provides a false perception that overloading is a serious safety issue.

*Risk taking behaviour*

Another factor that may contribute to a marine incident is deliberate risk-taking behaviour. This type of behaviour Licensing may have little impact on incidents caused by poor behavioural attitudes.

This is supported by feedback from the TSV and water police who attest to ongoing problems with some sectors of the boating community, particularly PWC riders can often be found riding close to swimming zones.

Although PWC registrations make up 6.3 per cent of the total vessels registered, PWC riding results in 12 per cent of injuries.[[8]](#footnote-9) PWC riders include many young adult males and participation in this water sports activity is increasing.

Based on the experience of road-based transport, it can be assumed that the young adult male incident rate reflects a lack of skills and behavioural attitudes. This age group is over-represented in incident statistics on the road and shows patterns of risk-taking behaviour not evident in other age groups. In addition, it is also reasonable to expect that some of the injuries associated with towed water sports, specifically those injuries sustained by the person(s) being towed, are caused by the towed person(s) lack of competence or risk-taking behaviour. Such persons may be knowingly and willingly taking such risks and on occasions, may suffer the consequences.

#### Conclusion

Based on the data presented, incidents involving fatalities, serious injuries and missing persons appear to be primarily a result of incidents caused by human factors, such as errors of judgment and inexperience. This may be due to a lack of knowledge, skill or training, or due to a disregard for regulatory requirements such as waterway rules.

It is expected that incidents due to human factors would be significantly higher in the absence of regulations as persons would not undertake the necessary skill development before operating a vessel. Licensing schemes are put in place to ensure that persons involved in recreational boating have a minimum level of knowledge or skills. Having such requirements in place across all licensed masters of recreational vessels is expected to lead to fewer incidents, particular those that relate to, or are as a result of, human factors.

### New entrants to recreational boating

The key factors influencing degree of exposure to risks experienced by recreational boaters can be measured by:

* the number and type of registered vessels that according to design, size and speed capability, have varying degrees of risk (for example, small, powered open boats are associated a relatively higher number of boating incidents, due to their number and open design). Registered vessels relate to the number of vessels registered with the Department and operate on the waters whereas licensing relates to the individual who may operate the registered vessel (see Section 2.5.1), or
* the number of licences and endorsements issued that indicates there are more operators (and passengers) of vessels who are exposed to on-water risks (see Section 2.5.2).

However, when considering issues of competency and skills, it is also important to consider the extent to which there are new entrants to the recreational boating hobby. A growth in the proportion of less experienced operators entering the sector each year, can have the effect of increasing the participants’ exposure to risk and the degree of risks to safety that characterises the sector.

#### Number of applicants for marine licences and licence endorsements

Between 1 April and 30 June 2021, the total number of recreational boating licence holders in Victoria was434,700 with a rate of approximately 25,000 applications for a new licence per year. There were also 72,477 licences endorsed for the use of PWCs as of April 2021.

Table 3‑5 below shows the total number of new and renewed marine licences (general and restricted) have remained steady over time, currently to around 434,000. This includes expired licences as they are still active for a period after they have expired.

Table 3‑5: Marine licence transactions – general, restricted and endorsed – from 2014 to 2021

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
| New marine licence | 28,356 | 28,286 | 27,293 | 25,558 | 27,268 | 25,663 | 21,756 | 25,689 |
| Marine licence renewal | 85,144 | 86,981 | 68,972 | 71,847 | 101,011 | 80,200 | 78,570 | 86,610 |
| PWC endorsements on general marine licence– new and renewed | 60,500 | 61,208 | 54,445 | 57,730 | 72,100 | 64,289 | 61,788 | 72,477 |
| PWC endorsements on restricted marine licence– new and renewed | 3,180 | 3,159 | 2,993 | 2,824 | 1,934 | 36 | 7 | 4 |

Source: Transport Safety Victoria

Table 3‑5 shows that the number of new licences issued were reasonably consistent across the time period, just allowing for a decrease in 2020 likely due to the COVID-19 pandemic. The renewals are also consistent and less affected by pandemic due to there being no requirement to attend a VicRoads’ Customer Service Centre. There was a spike in 2017/18 relating to 5-year renewals from 2012 when people were shifted to 5-year licences (a measure introduced as part of the current Marine Safety Regulations 2012). This also caused a slight spike in the PWC endorsements for that year.

PWC endorsements have climbed steadily in the period 2013-14 to 2020-21, but the figures do not directly correlate with actual PWC registration numbers as the vessel is often shared within a family or group Based on data provided by TSV on vessel registration and licences numbers, as of 30 June 2021 there are around 10 endorsements for every PWC registered.

Table 3 also shows that endorsements on restricted marine licences have decreased since the regulatory change in 2017 precluding those licences to be endorsed. There will still be some transactions for endorsements on restricted licences because the system allows a restricted licence to be endorsed once the holder turns 16 years old. It will continue to occur that restricted licences issued to 15-year olds will be valid till they turn 20 years old, and they may seek an endorsement at some point in that lifecycle.

#### Profile of applicants for recreational licences and endorsements

From 1970 to 2020 Victoria’s population increased by 97 per cent from 3.4 million to 6.7 million. The increase in recreational activity can be partially explained by the rapid population growth in Greater Melbourne which is now approximately five million people. Over the past decade, Melbourne’s population has expanded by an average of 100,000 people or 2.3 percent per year.[[9]](#footnote-10) It is assumed that this growth also leads to an increase in the number of people who are attracted to recreational boating as a form of leisure and who are therefore potentially exposed to the associated risks.

Possibly associated with population growth, TSV officers have reported noticing a change in demographic profiles of applicants for a marine licence in recent years.[[10]](#footnote-11) When marine licensing commenced in Victoria, the majority of people attending courses and VicRoads tests for licences were mainly recreational vessel operators with many years of experience and knowledge. They had little trouble passing the required knowledge test.

More recently, TSV have observed that a higher percentage of inexperienced people are applying to operate recreational vessels and especially PWCs where ownership and use has grown exponentially in recent years. With the growth in recreational pleasure boating, more family groups have been observed attending the courses for new licences, involving more inexperienced applicants to recreational boating. It may be reasonably assumed from this, that such a change in recreational boater profiles increases the likelihood there being more, less skilled boating operators, a factor which has the potential to increase the risk exposure of operators, passengers and the public.

### Development of competency

A learning theory called the “Conscious Competence Learning Model” is designed to explain the stages people undergo when learning something new and ultimately acquire a new skill to become competent.[[11]](#footnote-12) In this model the learner always begins at ‘Unconscious Incompetence’, and passes through ‘Conscious Incompetence’ and ‘Conscious Competence’ before arriving at ‘Unconscious Competence’. This is illustrated in Table 3‑6 below.

Table 3‑6: Conscious competence learning model

|  |  |
| --- | --- |
| **1 – Unconscious Incompetence** | **2 – Conscious Incompetence** |
| * the person is not aware of the existence or relevance of the skill area * the person is not aware that they have a particular deficiency in the area concerned * the person might deny the relevance or usefulness of the new skill * the person must become conscious of their incompetence before development of the new skill or learning can begin * the aim of the trainee or learner and the trainer or teacher is to move the person into the 'conscious competence' stage, by demonstrating the skill or ability and the benefit that it will bring to the person's effectiveness | * the person becomes aware of the existence and relevance of the skill * the person is therefore also aware of their deficiency in this area, ideally by attempting or trying to use the skill * the person realises that by improving their skill or ability in this area their effectiveness will improve * ideally the person has a measure of the extent of their deficiency in the relevant skill, and a measure of what level of skill is required for their own competence * the person ideally makes a commitment to learn and practice the new skill, and to move to the 'conscious competence' stage |
| **3 – Conscious Competence** | **4 – Unconscious Competence** |
| * the person achieves 'conscious competence' in a skill when they can perform it reliably at will * the person will need to concentrate and think in order to perform the skill * the person can perform the skill without assistance * the person will not reliably perform the skill unless thinking about it - the skill is not yet 'second nature' or 'automatic' * the person should be able to demonstrate the skill to another, but is unlikely to be able to teach it well to another person * the person should ideally continue to practise the new skill, and if appropriate commit to becoming 'unconsciously competent' at the new skill | * the skill becomes so practised that it enters the unconscious parts of the brain - it becomes 'second nature' * common examples are driving, sports activities, typing, manual dexterity tasks, listening and communicating * it becomes possible for certain skills to be performed while doing something else, for example, knitting while reading a book * the person might now be able to teach others in the skill concerned, although after some time of being unconsciously competent the person might actually have difficulty in explaining exactly how they do it - the skill has become largely instinctual. |

According to the Conscious Competence Learning Model, the goal of achieving consciousness of one’s level of competency relates to the degree of retention of information that is held following training and assessment. However, training and assessment is not the only means of achieving competency. It is posited that a person can only move from ‘Conscious Competence’ to “unconscious competence” through practice. This would suggest that time and repetition would be the best means of that level of competency.

This was researched by Monash University Accident Research Centre (MUARC) in 2008 by comparing the results of licence applicants sitting the theory test before and after studying the *Victorian Recreational Boating Safety Handbook*. The study found that there was only a 5 per cent knowledge gain between pre and post study of the handbook. The results of those sitting the test after the knowledge-based training course demonstrated a knowledge gain of 19 per cent. MUARC concluded that assuming the results were all valid, the average knowledge gain based on the current split between those that undertake courses and those that simply sit the test was only 15 per cent.

In the context of designing a marine licensing scheme, there needs to be consideration of the desired level of competency for certain skills or information and what the best way of achieving that is. If knowing the rules regarding the minimum distance required between vessels is the required competency, knowledge of the laws which govern these requirements may be seen to be sufficient to assure that the required competency level is met. This may be achieved via the successful completion of a knowledge test on the subject. Other (operational) skills cannot be tested in a knowledge test but could be demonstrated as part of a practical test.

### Victorian licensing and endorsement scheme

In Victoria, to obtain a marine licence or licence endorsement, an applicant must successfully pass a multiple-choice, knowledge test delivered by an authorised body. In Victoria, self-paced learning is acceptable, but the assessments are administered on behalf of TSV by VicRoads, or one of a number of accredited training providers that offer online or face to face services across the state.[[12]](#footnote-13)

#### Knowledge test

In Victoria the assessment used to grant a person a general marine licence, restricted licence and licence endorsement is a knowledge test. This requirement is established in the Marine Safety Regulations.

The Marine Safety Act specifies only that the test or training for a licence or endorsement must be of a “prescribed type’[[13]](#footnote-14). Regulation 33 of the Marine Safety Regulations provides that a person applying for a licence must provide “evidence that the applicant has passed an appropriate test of knowledge of the provisions of the Act, these Regulations or any notice under section 184 of the Act applying to the operation of regulated recreational vessels”.[[14]](#footnote-15)

#### Handbook

The information on which a person is tested is provided in the *Victorian Recreational Boating Handbook 2020* that is issued (and regularly revised) by TSV. The content reflects elements of the three units of competency listed in the nationally agreed guidelines for recreational boat licences and provides comprehensive information, with chapters on:

* Regulatory environment,
* Essentials for safe boating,
* Safe operation,
* Emergency procedures,
* Licensing and registration, and
* Personal watercraft.

The Department notes that the handbook is a non-regulatory means of providing information to new recreational boaters. There is no regulatory requirement mandating that a handbook is created, but it is used to support the knowledge testing requirements by outlining what information is required to be known before sitting that test.

#### Endorsements

The framework set up under the Marine Safety Actgives the Safety Director flexibility to require a specific licence endorsement where a vessel class or activity carries greater potential risk and requires a higher skill set than that required for standard recreational boating operations.

Operating a PWC is currently the only recreational vessel mode that requires a licence endorsement. Within Australia, where the requirement for a licence exists for recreational boat operators to hold a boat operator licence, jurisdictions usually require the operator of a PWC to be licensed or have their licence endorsed. This is achieved through successfully passing a test. Table 3‑7 below summarises requirements for each Australian jurisdiction.

Table 3‑7: PWC endorsement requirements within Australian jurisdictions

|  |  |
| --- | --- |
| Jurisdiction | Intervention |
| Victoria | Knowledge test – an additional 15 questions with 13 to be correct |
| New South Wales | In addition to the basic boating licence, the applicant has to complete an additional knowledge test to obtain a PWC endorsed recreational boating licence |
| Queensland | Queensland has the most comprehensive test for PWC operators – unit 7 of the Queensland Boatsafe scheme  This involves a 2-3 hour training course which includes practical, on-water assessment  Applicants must also complete the 6-hour Boatsafe practical course for a general licence |
| South Australia | Allows persons holding a general licence to operate PWCs but does not allow the operation of PWCs by special permit holders, i.e. 12- to 15-years old |
| Western Australia | Considering a PWC practical test |

Source: Jurisdiction’s online information

### Learning and assessment methods across Australian jurisdictions

Victoria’s licensing scheme is designed to improve the skills and knowledge of boat operators or masters within the National Competency framework developed by the National Marine Safety Committee. This framework is used by all Australian jurisdictions as the basis for their boating licensing schemes.

#### National Guidelines for Recreational Boat Operator Competencies

The National *Guidelines for Recreational Boat Operator Competencies* were developed in response to fatalities and injuries resulting from recreational boating activities.[[15]](#footnote-16) The Guidelines were developed by the National Marine Safety Committee (NMSC) and have been under review since 2021. They guidelines were “designed to be capable of being taught, learned or demonstrated by one or a combination of the following methods”:

* classroom instruction,
* practical instruction or demonstration, or
* distance learning.

The premise behind the guidelines is that competent operators make better decisions and respond more appropriately in operational settings. At their core are minimum standards of competence for recreational boat operation that were derived from the nationally agreed *Principles for Common Standards for Recreational Boat Licensing*.

Principle 5 requires that candidates for a boat operator licence should be able to “demonstrate” a wide range of knowledge and boat-handling requirements in order to become a competent master. Accordingly, the National Competencies comprise three competency units that:

* Unit 1 - Trip preparation and planning
* Unit 2 - Safe Operation
* Unit 3 - Responding to emergencies and incidents

The minimum core competency standards for the operation of mechanically powered vessels form the basis for all licence regimes within Australia. Since 2000, Victoria and all jurisdictions have adopted licensing schemes which are aligned to the units contained in national *Guidelines for Recreational Boat Operator Competencies*.[[16]](#footnote-17)

Since 2000, Victoria and all jurisdictions have adopted licensing schemes which are aligned to the units contained in national *Guidelines for Recreational Boat Operator Competencies*. Each jurisdiction draws upon the national guidelines using differing combinations of the methods of learning and assessment for licensing applicants.

At the time licensing was introduced into Victoria in 2001, the learning and assessment methods adopted were consistent with the standard applied in other States where recreational boat operator licensing had been introduced. However, since that time, other States have implemented changes and have adopted licensing models that in various forms, integrate theory and practical approaches to learning and testing that licence applicants must undertake.

#### Approaches in other jurisdictions

Table 3‑8 summarises the various schemes operating across Australian jurisdictions. n Knowledge Requirement Practical Requirement

Table 3‑8: Learning and testing required to assure competency across jurisdictions

|  |  |  |
| --- | --- | --- |
| Jurisdiction | Knowledge requirement | Practical requirement |
| Victoria | Correctly answer a minimum of 26 out of 30 questions to pass. | None |
| New South Wales | 40 questions of which the first 15 must all be answered correctly. | Complete a practical boat course or complete a Boating Licence Practical Logbook in the company of an experienced skipper. |
| South Australia | 50 questions and must answer all of the 8 compulsory questions correctly and at least 32 of the remaining. | None  Special permit for 12- to 15-year-olds must do a practical on-water assessment. |
| Queensland | Complete Boat Safe Course | Complete Boat Safe Course that includes an on-water assessment |
| Tasmania | 8 compulsory questions that must be answered correctly and get at least 75% of the remaining 17 questions correct to pass. | Complete a Boat Safe practical tuition course and online test. |
| Western Australia | 30 questions and must answer at least 25 correctly to pass. | Must get 100% in a set on-water, practical assessment |

Source: Jurisdiction’s online information

Jurisdictions have differing means of training and assessing licensing applicants. All the Australian licensing schemes are aimed at assurance that recreational boat operators attain a level of competency as outlined in the NMSC guidelines.

Victoria and South Australia currently use only knowledge courses and tests. In practice, such tests concentrate predominantly on testing knowledge of laws and specific parts of the collision regulations. They do cover some operational and emergency aspects but are limited in their capacity to test skills for handling practical matters.

Queensland, New South Wales and Tasmania each have practical boating courses – NSW having logged experience as an option – with no formal on-water assessment. Western Australia while recommending professional training is used, has no prescribed training course, but has a 45 minute on-water assessment.

Some Australian jurisdictions require applicants to pass on-water assessments as part of their licensing regime. This practical skills-based on-water assessment requires applicants to demonstrate the skills needed to safety operate a boat in a formal testing environment. For example, applicants for the Western Australian “Recreational Skippers Ticket” (RST) are required to demonstrate in practical terms, a set of essential tasks that are described in the knowledge test reading material.

### Conclusion

The Department notes that:

* Current regulations require new applicants for marine licences to sit a knowledge test.
* Based on available safety data, there continues to be a need to assess new entrants for either their skills or knowledge in relation to recreational boating.
* In comparison to other states, Victoria appears to have fewer requirements for marine licensing. Other jurisdictions also require applicants to sit a test of practice skills or require the completion of a practical course.

Licensing schemes aim to require a minimum level of knowledge and/or skills in an activity. This is expected to improve competency in handling a recreational vessel and making decisions relating to the operation of that vessel. The Department would expect that greater skills and knowledge would reduce incidents such as those arising from human factors. For example, a master of vessel with good handling of the vessel could manoeuvre a vessel to avoid a collision with another vessel. Such an incident might not be avoided if the master does not have the skills to execute such a manoeuvre.

Since incidents arising from human factors are generally more severe than those resulting from other factors, the Department would expect that a licensing scheme could improve marine safety outcomes by reducing the number of fatalities and serious injuries.

The Department considers that a range of options in relation to knowledge and skill requirements forming part of the marine licensing scheme should be considered and assessed in order to improve marine safety outcomes.

## Vessel standards and safety

The condition and safety of the vessel itself is naturally an important factor in recreational marine safety.

### Regulatory Base case

Section 87 of the Marine Safety Act specifies that an owner or master must not operate or allow a person to operate a vessel if the person knows that the vessel is unsafe. The definition of an unsafe vessel is not further defined in the Act. However, the Act provides that a vessel would be considered unsafe if its operation may endanger any person because of its condition or the condition of equipment installed on it.

Under the base case of no regulations, there are no specific vessel standards for recreational vessels and therefore no standard by which a vessel is considered safe. This means that there are no prescriptive means by which the safety of a boat may be designed, built, or assessed against. Taken together, without regulations and due the to the lack of specificity in the Act regarding what constitutes a contravention of section 87 of the Act, it may be difficult to monitor compliance with or enforce this requirement.

The Marine Safety Act imposes general safety duties on parties in the industry (known as duty holders) under the Act. Duty holders are parties that have a direct influence over the safety of marine activities. Section 26 of the Marine Safety Act imposes safety duties in relation to the design, manufacture, and supply of a vessel. Section 26 requires that duty holders, such as persons who manufacturers or supplies a recreational vessel, must ensure, so far as is reasonably practicable, that the vessel is safe and to take any necessary action to make information available relating to the conditions that will ensure the vessel is safe when used as intended.

The absence of safety information on vessels results in consumers making poor purchase decision, that could put their own and their passengers lives at risk. The ABP is integral to consumer decision making as it makes clear aspects of the vessel as it relates to safety. The standard specifies what information is required to be displayed to consumers via an ABP.

### Existing standards – The Australian Builders Plate

The Marine Safety Act implements the National Standards for the ABP for Recreational Vessels (the ABP Standard). The ABP Standard is a standard for an ABP that is fixed to certain recreational vessels used in Australia.

The intent of the ABP Standard is to provide information to consumers about the conditions in which a vessel may be operated safely. These conditions, such as maximum loading capacity and maximum engine power capacity and mass, can have direct impacts on the safety of the vessel. Failure to adhere to the conditions of an ABP may compromise the integrity of the vessel and increase the risks of safety incidents from vessel failures. In this sense, the provision of safety information to consumers allows consumers to make informed decisions about the use of the vessel and how it may be safely operated in a way that minimises their risks to safety. The ABP Standard is a useful tool to provide boaters with important performance and safety information in relation to the vessel.

Consumers often do not have the expertise to determine or assess the conditions under which the vessel may operate safely. They will often rely on information from the manufacturer or dealer to provide information on the condition under which the vessel is safe to be operated. Without this information, there may be a higher likelihood of recreational boaters making ill-informed decisions about whether the vessel is suitable for their needs and under what condition the vessel is safe.

The ABP displays a range of safety and performance values, calculated in accordance with referenced technical standards, in relation to the recreational vessel the plate is affixed to. Information displayed on an ABP includes:

* safety information relating to the maximum person capacity and load capacity,
* maximum engine output and mass, and
* a statement on buoyancy performance.

The ABP Standard specifies the boats to which the ABP Standard applies, the requirements for the uniform display of information to be exhibited on the ABP, and the design and construction standards to be used in determining that information.

The ABP Standard applies to any recreational boat with the exception of the following types of recreational boats:

1. Aquatic toys.
2. Amphibious vehicles.
3. Canoes, kayaks and similar boats designed to be paddle-powered such as
4. surf skis.
5. Hydrofoils and hovercraft.
6. Pedal powered boats.
7. Personal Watercraft intended to carry no more than two persons.
8. Personal Watercraft compliant with ISO 13590.
9. Paddleboards.
10. Racing boats.
11. Rowing shells used for racing or rowing training.
12. Sailboards.
13. Sailing boats.
14. Stand-up paddleboards.
15. Submersibles.
16. Surf row boats.
17. boats more than 24 m in length.

The exception for rowed or paddled craft specified in (c), (e), (h), (i), (j), (k), and (m) is limited to a recreational boat that, as designed and built, is incapable of being fitted with an outboard motor.

The general requirement for the uniform display of information related to requirements pertaining to:

* the location of the ABP on a recreational boat – the ABP needs to be fixed in a prominent position and readily visible to the operator of the boat
* the fixing of the ABP to a recreational boat – the ABP needs to be permanently fixed to the vessel in a manner that is resistant to removal without leaving some obvious sign
* the markings, texts and symbols displayed on the ABP – text, symbols and other markings on the ABP needs to be capable of withstanding water, sunlight, temperature, wear etc. without loss of legibility and resistant to alteration
* items of information to be displayed on the ABP, as shown below:

#### Changes to the ABP Standard

The ABP Standard was recently updated, with Edition 5 of the ABP Standard the most recent standard. Edition 5 of the ABP Standard was endorsed by the Transport and Infrastructure Council on 5 June 2020.

The major changes that have been incorporated into the new Edition 5 include:

* Requiring that information displayed on an ABP is calculated in “full compliance” with the relevant requirements of the specified standard.
  + For example, where previous ABP Standard editions have required that maximum person load is displayed “as recommended by the boat’s builder”, the Edition 5 of the ABP Standard now requires “the person capacity displayed shall be the person capacity for the boat as determined in compliance with the specified standard.”
* Requiring that flotation is fitted in accordance with the specified standard used (for boats less than six metres in length).
  + Previous ABP Standard editions allowed builders to fit either basic or level flotation, regardless of the flotation type required by the specified standard chosen. Under Edition 5 of the ABP Standard, flotation must be fitted in accordance with the requirements of the standard used.
* Changing the presentation of “person capacity” on the ABP
  + Where previous editioned have displayed maximum person load on an ABP as “Max Persons ## = XXXkg”, Edition 5 of the ABP Standards changes the requirement of “Number Persons ## or not exceeding XXXkg”.
* Move auxiliary engine mass from ‘outboard engine mass’ to ‘maximum load’
  + Edition 4 of the ABP Standard required that auxiliary outboard mass (e.g. trolling or reserve outboard mass), be considered as part of the ABP’s ‘maximum outboard mass’. Under Edition 5 of the ABP Standard, auxiliary outboard mass and associated equipment must be considered as part of an ABP’s generic ‘maximum load’, in compliance with the requirements of the specified standards.
* Requiring that when a Hull Identification Number (HIN) is already affixed to a boat, the HIN must also be displayed on the ABP.
  + When a HIN is not present on a boat, the ABP may instead provide the build date, as permitted by previous ABP Standards.
* Changing from optional to mandatory warning statements.
  + Edition 4 of the ABP Standard contains an optional warning statement regarding the decreasing of loading masses in certain conditions, such as poor weather. Edition 5 of the ABP Standard requires all ABP’s to include a warning statement regarding the ‘reduction of load in adverse conditions.’
* Changing from optional to mandatory flybridge capacity guidance (boats with a flybridge only).
  + Edition 4 of the ABP Standard contains an optional capacity statement for boats with a flybridge. Edition 5 of the ABP Standard requires all boats with a flybridge to include a warning statement on their ABP stating the maximum passenger capacity of the flybridge, and to fit an additional ABP adjacent to the flybridge steering position.

Other changes relate to updating vessel exemptions, changes regarding ABP design, clarifying Standard requirements, introducing reference tables, and the introduction of a table outlining the ‘Requirements for the information to be displayed on an ABP’ and associated changes.

#### The sale of vessels complying with the ABP standard

It is an offence under section 102 of the Marine Safety Act to supply in trade or commerce a recreational vessel of a prescribed class that does not comply with the ABP Standard. In practice, this means that a business can only supply recreational vessels of a prescribed class if it is fitted with a plate compliant with the ABP Standard.

The current Marine Safety Regulations specify the scope of a prescribed class of recreational vessel for the purposes of Section 102 of the Marine Safety Act. Under the current Regulations, all recreational vessels are a prescribed class of recreational vessel except for the following:

* a vessel listed in clause 3.2 of the ABP Standard,
* a vessel built for export from Australia,
* a second-hand vessel, or
* a personal watercraft that is designed to carry 3 or more persons if the following information is written on or attached to the personal watercraft in a clearly visible place
  + the total weight of persons and equipment that the vessel may carry (expressed in kilograms), as recommended by the builder of the vessel, and
  + the maximum number of persons the vessel may carry, as recommended by the builder of the vessel.

Under the base case of no regulations, no recreational vessels are a prescribed class for the purposes of Section 102 of the Marine Safety Act. This would imply that no recreational vessel is required to comply with the ABP Standard. This would contravene the intent of the national agreement for a uniform national approach to marine safety in Australia. Given the purpose of the ABP Standard is to provide information to consumers about the conditions in which a vessel may be operated safely, not requiring any recreational vessel to comply with the ABP Standard will mean no vessels are required to convey safety information to consumers.

The absence of safety information affixed to a vessel (i.e. via affixing an ABP to the vessels) may result in consumers make ill-informed decisions relating to the safety of that vessel and compromising their own safety on the vessel. Therefore, this paper does not consider further the rationale for certain Victorian recreational vessels to comply with the ABP Standard. The current Regulations are designed to support the requirement for an ABP to be fitted to certain vessel under the national agreement, unless exempt or in contradiction to the purpose and intent of the ABP Standard. What this paper will consider, however, is what ancillary requirements relevant to the ABP Standard are necessary in order to ensure that the ABP Standard fulfils its purpose to keep consumers informed about the conditions in which a vessel may be operated safely.

#### Limitations of the ABP Standard

While the ABP Standard specifies a standard for the safety information to be affixed onto a vessel, it does not require that boats are manufactured in accordance with technical standards. It does not provide a guarantee that the vessel is in a condition such that it will meet any standard throughout its life, including if it is transferred to another owner.

As such, the ABP Standard provides no “base-line” safety standard against which vessel deterioration may be measured and addressed. Therefore, any requirements to comply with the information set out in an ABP can only be effected by each Australian State and Territory and its corresponding legislation. Regulations can therefore support the efficient and effective compliance monitoring and enforcement of the current legislative requirements in relation to ABP Standards under the Marine Safety Act. That is, regulations can provide clarity and specificity of measures to ensure that the ABP Standards are working as intended to minimise the risks to safety of the vessel.

### Marine safety incidents relating to vessels – Material factors

The Marine Safety Act and the ABP Standard provides the basis for considering whether additional safety requirements in relation to vessel safety should be prescribed in regulations. In order to assess whether additional requirements are necessary, the Department must first consider the safety of recreational vessels in Victoria.

Based on the reportable incidents reported to the Police, TSV have records of contributory factors which cause a marine safety incident. Contributory factors that cause an incident are categorised under three major factors:

* environmental factors,
* human factors, and
* material factors.

Material factors include systems and equipment that relate to the physical components of the vessel. These physical components allow the vessel to operate on the water and includes, for example, electrical wiring, hull, navigation systems, and fuel systems, as well as any component of the vessel that ensures it stays buoyant and stable on the water. Therefore, data in relation to material factor incidents in Victoria are the most relevant indicator of vessel safety. Material factor safety incidents provides an indicator of the incidents caused by a failure in safety of the vessel. Note that there are frequently several contributing factors recorded per incident.

For the period 2014-15 to 2018-19, there were 6,726 marine safety incidents for recreational vessels and a total of 6,774 contributing factors recorded, as shown in Table 3‑9. A total of 1,642 marine safety incidents had no contributory factors recorded against the incident.

Table 3‑9: Marine incidents – total contributing factors by incident severity from 2014-15 to 2018-19

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Fatal incident | Serious injury | Missing person | Minor  injury | Vessel or property damage/loss | No damage | Not known | Total |
| **Environmental** | **9** | **20** | **0** | **3** | **117** | **301** | **0** | **450** |
| **Human** | **30** | **111** | **1** | **4** | **351** | **1,926** | **5** | **2,428** |
| **Material** | **4** | **16** | **0** | **2** | **210** | **3,622** | **42** | **3,896** |
| Equipment - Electrical | 0 | 3 | 0 | 0 | 25 | 1163 | 5 | **1196** |
| Equipment - Hull Failure | 1 | 0 | 0 | 0 | 37 | 11 | 0 | **49** |
| Equipment - Machinery | 2 | 5 | 0 | 2 | 100 | 2,028 | 33 | **2,170** |
| Equipment - Navigation | 0 | 0 | 0 | 0 | 3 | 16 | 0 | **19** |
| Equipment - Rig Failure | 0 | 0 | 0 | 0 | 13 | 23 | 0 | **36** |
| Fuel System Blockage | 0 | 0 | 0 | 0 | 3 | 214 | 3 | **220** |
| Inadequate Buoyancy | 0 | 0 | 0 | 0 | 1 | 4 | 0 | **5** |
| Inadequate Stability | 1 | 1 | 0 | 0 | 7 | 12 | 0 | **21** |
| Other/Unknown | 0 | 7 | 0 | 0 | 21 | 151 | 1 | **180** |
| **Total recorded** | **43** | **147** | **1** | **9** | **678** | **5,849** | **47** | **6,774** |
| Not known | 21 | 24 | 1 | 14 | 147 | 1,360 | 74 | **1,641** |
| **Total** | **64** | **171** | **2** | **23** | **825** | **7,209** | **121** | **8,415** |

Source: Transport Safety Victoria

#### Observations

From Table 3‑9 above, several observations can be made.

When considering serious incidents only (incidents that results in either a fatality, serious injury or missing person), material factors were identified the least number of times compared to environmental factors and human factors. Out of a total of 191 contributing factors identified that caused a fatality, serious injury or missing person, 74 per cent were caused by human factors (142 human contributing factors), 15 percent were caused by environmental factors (29 environmental contributing factors), and 10 percent was caused by material factors (20 material contributing factors).

Incidents caused by material factors are, on average, less serious than incidents caused by the other two major factors. Incidents caused by environmental or human factors are much more likely to cause serious incidents than those caused by material factors.

Note that, as mentioned previously, more than one material factors may be recorded per incident. That means that the data presented show incidents where material factors contributed to the incidents, even though other contributing factors (i.e. environmental and human factors) were also identified. Therefore, the analysis above considers all incidents where material factors have been a factor (even though it was not necessarily the only factor contributing to the incident). This is important for this RIS considering measures to reduce material factors, irrespective of what other factors may have played a part in the incident, need to be considered. In this sense, it proposed interventions addressing material factors can address safety risks if other interventions to reduce environmental or human factors “fail”.

Table 3‑10 shows year on year contributing factors recorded against marine safety incidents by incident severity from 2014-15 to 2018-19. From the data presented, material factors incidents appeared to be relatively stable over the 3-year period from 2014-15 to 2016-17, and then declined over the years from 2017-18 to 2018-19. However, the Department notes that this is a similar trend for human factors, while environmental factors declined from 2014-2015. The data suggests that this may be due to the increase in an absence of a contributing factors being recorded, with incidents with an unknown factor increasing slightly in the 2017-18 year and a sharp increase in 2018-19. Therefore, it is difficult to make any meaningful conclusions arounds the trends in major contributing factors, since it appears recording on contributing factors have been compromised as the years progress.

Table 3‑10: Marine incidents – year on year contributing factors recorded from 2014-2015 to 2018-19 by incident severity

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | Total |
| **Environmental** | 138 | 104 | 97 | 85 | 26 | **450** |
| **Human** | 591 | 540 | 672 | 491 | 134 | **2,428** |
| **Material** | 901 | 920 | 883 | 693 | 499 | **3,896** |
| **Unknown** | 176 | 203 | 174 | 320 | 768 | **1,641** |
| **Total** | **1,806** | **1,767** | **1,826** | **1,589** | **1,427** | **8,415** |

Source: Transport Safety Victoria

The Department observes that despite the existing requirements under the Marine Safety Act relating to vessel safety, the data presented shows that there is still the occurrence of failures relating to the vessel, albeit not to a significant degree. Nonetheless, as shown in the data, the risks from operating an unsafe vessel includes the potential for safety incidents to remain at the same levels. While the data shows that an unsafe vessel may not be significant contributor to loss of life or serious injury or missing person, it still plays a role as a contributing factor in a number of incidents and will also lead to costs borne by search and rescue cue as a result of vessel disablements, for example.

Indeed, the fact that incidents caused by material factors are less serious than those caused by other factors is likely to be due to the effectiveness of the marine rescue systems in place. Marine safety incidents attributable to material factors (material factors incidents) place a significant drain on marine safety resources, in particular the search and rescue systems in place.

### Other issues

Specific matters in relation to vessel safety include vessel standards and design, vessel maintenance and inspections, and the effectiveness of the ABP Standards. These matters provide further context around the nature and extent of the problems in relation to vessel safety and are discussed further below.

#### Vessel Standards and design

The safety of a vessel is dependent on the vessel design and seaworthiness. Appropriate vessel design and seaworthiness will ensure that the vessel is safe to use on State waters. The overall design of the vessel itself as well as components fitted or installed can both reduce the occurrence of an incident itself as well as mitigating the consequences of an incident should one occur.

Marine safety incidents caused by an unsafe vessel can potentially cause harm, such as loss of life or serious injury to users of that vessel as well as other users of State waters. Vessel users, such as vessel masters and passengers, are particularly at risk because of their direct proximity of use to the vessel. These parties are travelling in the vessel and will be relying on the safety of the vessel to operate as intended. Any failures in relation to the safety of the vessel, such as a fire or flooding, may lead to loss of life or serious injury.

Other parties using State waters, such as passengers of other vessels and bathers in the water, may also be impacted by unsafe vessels. For example, if the steering system of a vessel fails, the master will no longer have effective control of the vessel and other users in the State water may be in danger of collision with a runaway vessel. There may also be costs borne by Government through search and rescue efforts when responding to marine safety incidents.

Indeed, as discussed previously, despite the existing legislation under the Marine Safety Act relating to vessel safety, the data presented shows that there are the risks from operating an unsafe vessel includes the potential for safety incidents to remain at the same levels which would lead to loss of life, serious injury and/or costs borne by search and rescue crew.

Therefore, regulations are required to provide clarity and specificity of measures in the regulations that are consistent with the objectives to the Marine Safety Act.

Currently, the Regulations require that the prescribed condition of registration is that the recreational vessel mist be fit for purpose. A recreational vessel is not fit for purpose if:

1. a hull of the recreational vessel is unable to maintain watertight integrity,
2. there is fuel leaking from the recreational vessel's fuel system or engine,
3. the recreational vessel's steering system does not control the movement of the recreational vessel,
4. a ventilation system used for ventilating a space or spaces in the recreational vessel is not functioning,
5. if material insulating machinery in the recreational vessel from fire or flammable materials is missing or damaged
6. if materials or items comprising part of the recreational vessel's reserve buoyancy are missing or damaged,
7. if engine kill switches are fitted to the recreational vessel and are inoperable.

The measures specified above identify major systems and items on board a recreational vessel that must be operable to enable a vessel to function properly. For example, watertight integrity and buoyancy are basic elements of a vessel that ensures the vessel is able to safely remain on the water. A steering system, that effectively controls the direction of the vessel in conjunction with an engine kill switches to ensure the vessel can be stopped when necessary, allows for the safe operation of vessel in terms of its manoeuvrability and trajectory so as to avoid any safety incidents, such as a collision. Inoperability of these system entails the vessel is unsafe.

The current fit for purpose approach with ensuring the safety of a vessel applies the safety measures in the context of what safety features the vessel has. That is, the measures mandate the effectiveness and functionality of the any safety features of the vessel only in cases where the safety feature is installed. For example, the regulations would require that whichever type of kill switch is fitted to an individual boat is functioning properly, rather than requiring that kill switches are fitted. The same would apply to ventilation systems – if a ventilation system is installed on the boat, then it needs to be functioning, and a vessel without a ventilation system install does not need to have one installed. This approach requires that systems that were designed to be part of the boat, and are therefore installed in it, are maintained in working order.

The Department considers that specific measures can help to reduce the consequences of specific material factor incidents by specifying vessel standards. Regulations also provide clear enforcement powers for transport safety officers on what constitutes an unsafe vessel. On this basis, The Department will consider whether further regulatory intervention may be required in relation to vessels safety.

#### Navigation lights

The placement and positioning of navigation lights is crucial to safety. Lights not only make a vessel visible at night but also tell other waterway users what class of vessel they are seeing and what course it is on relative to themselves. This assist in avoiding collisions between vessels.

Without regulations there would be risk to operators and passengers and other marine enthusiasts as there would be no safety requirements in place that could address the risks presented.

The need for navigations lights is addressed by the International Regulations for Preventing Collisions at Sea (COLREGs). The COLREGs are international recognised standards published by the International Maritime Organization (IMO) and set out, among other things, navigation rules to be followed by ships and other vessels at sea to prevent collisions between two or more vessels. This includes the use and position on navigation lights on vessel.

It is generally accepted that the appropriate fitting and use of navigation lights in conditions of low visibility and at night can prevent collisions at sea. If lights are not fitted correctly vessels may be unlit when viewed from certain directions, increasing the risk of collision at night. TSV asserts that the incorrect fitting of lights is common for a two main reasons:

Vessels often do not have suitable flat surfaces that are truly horizontal or vertical, or parallel to the centreline of the vessel, for lights to be mounted on, and boat builders and owners are not installing such surfaces

Many light units that are designed to be fixed to a vertical surface are being installed by owners on horizontal surfaces, or vice versa.

These factors can contribute to an increased risk of collision as the navigation lights are fitted in a manner that causes the arc of visibility of the light to contravene the COLREGs.

#### Vessel maintenance and inspections

Ongoing maintenance and repair of vessels is also critical for the safety of recreational marine activities. Keeping a vessel safe throughout its operating life requires a regime of vessel maintenance once the vessel is operating. The maintenance of a safe vessel ensures the continued safety of the vessel, and can both reduce the occurrence of an incident itself as well as mitigate the consequences of an incident should one occur. If vessels were allowed to become unseaworthy, the risks of marine safety incidents may increase leading to a potential increase in loss of life or serious injury. Without regulations there would be significant risks as no maintenance and inspection requirements would be in place that could address the risks presented.

Vessel owners may not make optimal decisions regarding the maintenance and condition of their vessel because the vessel owner may not consider the full costs (i.e. internalise the costs) of a marine safety incident when participating in marine activities. The owner may only have regard to their personal perspective when assessing the costs and risks associated with vessel maintenance. This means that owners may only ensure that the boat is maintained to the extent that it reduces this personal risk (e.g. risk of breakdown) and not consider the true external costs of a substandard vessel maintenance (e.g. cost involved with search and rescue).

Additionally, vessel masters and passengers will not know of the decisions made by the vessel owner in relation to the vessel condition and therefore will not base their decisions (i.e. whether to accept the risk or avoid it) on a full understanding of the risks involved. In other words, vessel masters and passengers may not be in a position to assess the full condition and maintenance history of a vessel to be able to make an informed choice about the risks involved with operating or boarding the vessel. For this reason, interventions relating to vessel maintenance may be justified.

Inspections to examine a vessel is a means to confirm whether a vessel is maintained to a safe standard. An inspections regime establishes a practical means by which the safety of a vessel is verified. Currently, there is no vessel inspections regime for recreational vessels prescribed under Victorian marine safety law. Nationally, there are no requirements under marine safety laws in any Australian jurisdiction for recreational a vessel to undergo an inspection regime.

The absence of mandatory periodic vessel inspections allows for the possibility for vessel owners to allow the condition of their vessel to become unseaworthy. This may either be intentional if, for example, the vessel owner consider it is too expensive to maintain the safety of the vessel or unintentional, such that the vessel owner does not realise that a safety feature of the vessel has failed).

A survey of boaters as part of the Boating Behaviour Study, August 2017, commissioned by TSV, surveyed a range of boaters and categorised boaters into five “personas”. The five boating personas identified for the purposes of this study are:

* inland boater – towed sports
* inland boater – fishing
* enclosed and costal inshore boater – fishing
* PWC user
* kayaker.

The study found that that an average of 84 percent to 91 per cent of boaters across five different boating personas strongly agreed or agreed with the statement “My boat/craft is regularly maintained”. Similarly, 76 per cent to 92 percent of boating personas strongly agreed or agreed with the statement “I spend time and money regulatory maintaining my boat/craft”. This shows the vast majority of boaters make some effort to maintain their vessel, despite the absence of any prescribed regulates which prescribe a maintenance regime for the vessel. This study, however, does not include information about the type nor frequency of inspections nor maintenance and therefore does not provide assurance as to the quality of maintenance performed to ensure safety.

While regulations requiring vessels undergo periodic inspections can ensure that any deficiencies in the vessel that would cause it to be unsafe are detected, the case for a specific inspection regime does not appear to be that strong. While an inspection regime provides an additional measure by which to ensure vessel are not allowed to deteriorate to an unsafe condition, the Department must consider the whether the benefits of such a regime outweigh the costs.

### Conclusion

Mechanical faults or failures or other issues with a vessel, such as inadequate buoyancy or stability, may lead to serious harms to persons involved in recreational boating. As shown in Table 3‑3 and Table 3‑9, material factor incidents caused four fatalities and 16 serious injuries for the period 2014-15 to 2018-19.

These issues could arise if vessels are not built to a safe condition or if the owners of vessels do not adequately maintain vessels. In the absence of regulations, the owners of recreational vessels may fail to regularly check material components of their vessels such as wiring, motor or hull condition. Further owners may not have the necessary skill and tools to detect and diagnose problems. Equally, owners of vessels may not seek to have vessels repaired if an issue is identified.

Therefore, the Department expects that incidents resulting from material factors would be significantly higher in the absence of regulations.

Having a set of standards and design associated with vessels provides a guide and clarity for the owners, builders or repair practitioners. The Department will therefore develop and assess regulatory options to address the risk of material factor incidents.

## Maintaining safety during the operation of a vessel

Actions taken or not taken during the operation of a recreational vessel may lead to adverse safety outcomes. If certain risks or hazards are not managed or eliminated, this could lead to loss of life or serious injury.

There are two specific activities that may require regulatory intervention:

* Loading persons onto vessels
* Fuelling and restarting vessels after fuelling.

### Regulatory base case

As per the Marine Safety Act, the vessel is unsafe if the operation of the vessel may endanger any person because of the overloading, however in the absence of the Marine Safety Regulations there would not be any regulatory provisions to specify what constitutes overloading.

Section 5(d) of the Marine Safety Act establishes that a vessel is an unsafe vessel if the operation of the vessel may endanger any person because of the overloading of the vessel with persons or cargo. Section 87 of the Marine Safety Act provides that the master of a recreational vessel or recreational hire and drive vessel must not operate, or cause or allow a person to operate, the vessel if the master knows that it is an unsafe vessel.

This means that in the absence of any regulations (the base case), it is prohibited to operate any recreational vessel if the vessel is unsafe due to overloading. The key issue in relation to this requirement is the definition of overloading and what is deemed to be an overloaded vessel. The Marine Safety Act does not explicitly specify the definition of overloading or requirements related to overloading. So, under the base case, there is no specificity for what constitutes overloading. The absence of regulations specifying what constitutes overloading can make it difficult for the regulator to prosecute masters for breaches against overloading under the Marine Safety Act.

### Overloading recreational vessels

The safety of a vessel is dependent on the capacity and loading of the vessel. An overloaded vessel poses several safety risks, including diminished stability and manoeuvrability of the vessel. Overloading also increases the risk the vessel could capsize or be swamped. In addition, too many people on a vessel could also lead to greater risk of people falling overboard due to not having enough space for those on board the vessel to safely move around on the vessel.

#### Data

As discussed in Section 3.1.2.5, there were 6,774 contributing factors recorded for the period 2014-15 to 2018-19. Of the 6,774 contributing factors recorded, only two contributing factors related overloading, one of which caused a serious injury (the other incident caused by overloading resulted in vessel damage). The human costs associated with serious injuries may include emergency search and rescue costs, hospitalisation and other medical costs, loss of income due to reduced or inability to work and quality of life costs.

Note that TSV data on contributing factors that caused an incident has only been provided to the Department for the period 2014-15 to 2018-19. More recent data on contributing factors for incidents are not available due to TSV adopting a new database in 2018 for recording and reporting information, whereby new data rules meant that entering a contributing factor was no longer prompted.

Departmental analysis of 18 coronial findings into deaths related to recreational marine boating activities found that of the fatalities caused by flooding, swamping, capsizing or sinking, none were found to be a result of overloading, but rather a result of poor vessel standards and/or environmental factors (such as weather and water conditions).

According to data provided by TSV, from 2013 to 2021 there was only one infringement issued for vessel overloading (the infringement was issued in 2021). However, this low number of infringements may be a consequence of high compliance with existing legislation under the Marine Safety Act relating to vessel safety and overloading, as well as the current requirement for boaters to comply with the ABP. Therefore, despite current requirements under the Act and ABP Standards, regulations appear to still be warranted to provide clarity and specificity of measures to reduce the consequences of overloading incidents by specifying standards in the regulations that are consistent with the objectives to the Act and the ABP Standard. Regulations also provide clear enforcement powers for transport safety officers to ensure that the risks of overloading are mitigated.

#### Developments in the Australian Builders Plate Standard

A further consideration is that overloading may occur as a result of exceeding the mass capacity of a vessel, despite the number of persons on the vessel being below the maximum person capacity as specified under the current Regulations. According to the Australian Bureau of Statistics, the average Australian adult male weighed 85.9kg and the average Australian woman weighed 71.1 kg in 2011-12. On average, Australians are growing heavier over time. While infringements against overloading are low, there is some indication that overloading on the basis of mass could more widespread than observed.

As mentioned in Section 3.3.2.1, the updated ABP Standard includes the change in the presentation of the “person capacity” on the ABP. Where previous editions have displayed the maximum person load on an ABP as “Max Persons ## = XXXkg”, Edition 5 of the Standard changes the requirement to “Number Persons ## or not exceeding XXXkg”. The change to an “or” statement implies that person capacity of the vessel means that the capacity cannot exceed either the number of maximum persons or the maximum mass capacity of persons. The updated Standards places a greater focus on the maximum capacity of the vessel in terms of the total mass of persons on board the vessel.

In addition to exceeding maximum mass capacity of people, TSV have also observed that the carriage of excess cargo and equipment on vessels, including fishing equipment, aftermarket boat fittings and other goods has increased over time. From the Department’ perspective, while individual items may not weigh much by itself, several pieces of equipment carried on board a vessel (e.g. ice box, bait tank, fishing net, rope, food, ski equipment etc.) can quickly add up to the weight of a single person without the boater realising the vessel is being overloaded.

### Refuelling vessels

Refuelling a vessel is a necessarily risky activity. Refuelling introduces fuel vapours and, when combined with air and ignition source, can cause fire or an explosion. These type of incidents can result in serious injury or death. According to TSV, vessel fires typically occur during refuelling or when a boat is re-started after fuelling.

Of the 6,726 incidents recorded over the period from 2014-15 to 2018-19, 37 were fire related. Of the 37 fire incidents, three resulted in a serious injury. In the same period, there were 8 recorded explosions, of which four resulted in serious injury. While the Department considers the number of incidents of fire and explosions to be relatively low in frequency (compared to disablement of vessels, grounding, person in trouble, capsizing and collusion, as shown in Table 3‑1), the consequences can be extreme. The lower incidents of serious injury, and indeed now deaths, may be a result of the current Regulations, which require that the master of a recreational vessel or a recreational hire and drive vessel must not permit the vessel to be fuelled or restarted after being fuelled at a wharf, jetty or pier if there are passengers on board the vessel.

The explosion of the 38-foot Leda II at Pier 35 in May 2008 which resulted in two deaths, have highlighted the risks faced by operators of inboard petrol-powered vessels shortly after refuelling. Without regulations there would be risk to operators and passengers as there would be no safety requirements in place that could address the risks presented. The case study below highlights the severity of the issue.

|  |
| --- |
| **The Explosion of the Leda II at Pier 35**  In May 2008 the Leda II, a 38-foot long Halvorsen cabin cruiser powered by twin inboard petrol engines exploded after being restarted shortly after refuelling at Pier 35, on the lower reaches of the Yarra River. The explosion, which occurred whilst passengers were on board and when the vessel was restarted, caused the deaths of two people and caused serious injury to several others.  The Coroner found that the decision to start the vessel following refuelling, with passengers onboard, was inconsistent with appropriate instructions provided by the refuelling wharf manager. This reveals the need to ensure that the risk of petrol vapour fires during and shortly after refuelling are addressed. |

The case study above highlights extremely high consequences related to fuelling and a period of time shortly after refuelling. While incidents of fire and explosions may be low, the consequences are high.

### Conclusion

The Department has examined two specific issues that may arise during the operation of a recreational vessel that could lead to adverse safety outcomes if not managed appropriately:

* loading a recreational vessel with people or goods (i.e. equipment), and
* refuelling a recreational vessel.

It does not appear that the overloading of a recreational vessel is a significant contributor to marine safety incidents. This observation may be due to compliance with the existing legislative and regulatory interventions in relation to overloading. The Department considers that, without regulatory interventions, there would be higher levels of incidents due to the overloading of a vessel, and therefore, there would be higher levels of flooding, swamping, capsizing or sinking of recreational vessels. The Department believes that vessel masters would not consider overloading to the degree that they should, and it would be difficult for vessel masters to accurately estimate and calculate how many persons should be onboard a vessel in order to prevent overloading it.

The Department has developed and assessed regulatory options to address risks associated with the overloading of recreational vessels in this RIS.

Similarly, it does not appear that fire and explosions make up a significant proportion of incidents, when compared to the total incidents reported to TSV. There have been no fatalities during the period from 2014-15 to 2018-19 as a result of a fire or an explosion. However, fuel vapour fire incidents have resulted in serious injuries, such as burns. The low number of incidents may be a result of existing legislative and regulatory requirements related to refuelling. Further the Department expects that incidents might be higher if there were no regulations in relation to fuelling a vessel or restarting a vessel after it has been refuelled. The Department considers the consequences high enough to warrant some level of intervention in relation to refuelling vessels. The Department has developed and assessed regulatory options to address to the risk of refuelling in this RIS.

## Identification of vessels

One of the stated purposes of the vessel registration scheme established in the Marine Safety Act is to provide a method of establishing the identify of each recreational vessel and the person who is responsible for it. The key issue is that, if a registered vessel is not easily identifiable, it is difficult to monitor compliance with and enforce marine safety laws and bring offenders to account. Additionally, if vessels are not able to be identified, owners may have an incentive to not comply with marine safety obligations.

### Regulatory base case

The Marine Safety Act requires all recreational vessels, unless exempted, to be registered when operating in State waters. It is an offence under the Act for an owner or master of a vessel to allow a recreational vessel to be operated on State waters unless the vessel is registered.

Section 39 of the Marine Safety Act provides for the making of regulations in relation to the initial registration or renewal of registration of a vessel and the transfer of the registration of a vessel between individuals.

There is also provision for exempting certain vessels from the registration requirement. This can be achieved by prescribing the exemption in the regulations or by the Safety Director giving notice under section 260 of the Act.

In the context of supporting the provisions of the Marine Safety Act, no regulations in relation to the registration scheme would mean that:

* no information would be required about the vessel owner upon application to register their vessel,
* nor any exemptions from the requirement to have all vessels registered.

This would not allow the registration scheme to be administered as intended. Therefore, regulations are needed to ensure the registration scheme is operational under the Marine Safety Act.

### Importance of registration

The identification of a vessel is important for compliance monitoring and enforcement of marine safety laws. If a registered vessel is not easily identifiable, then this impedes compliance monitoring and enforcement. As else equal, higher levels of compliance monitoring and enforcement are expected to lead to higher levels of compliance.

The Marine Safety Act recognises that enforcement of maritime safety laws is reliant on ensuring information related to the recreational vessel and the person responsible for the vessel is available to the regulator. Enabling the regulator to obtain and record information about the identity of the vessel owner as well as information about the vessel itself (e.g., type, length, method of propulsion etc.) provides a means by which the regulator can oversee and administer regulatory requirements to ensure safety. The collection of data regarding vessels can support effective regulations through, for example, informing the development of strategic policy by enabling the regulator to assess and manage safety risk in the industry.

Effective compliance monitoring and enforcement of maritime safety laws is also reliant on transport safety officers being able to identify from the vessel who is the responsible person for the vessel. Information relating to the vessel may need to be displayed or affixed to the vessel to assist with the identification of the vessel when it in on State waters. This is particularly important for on-water enforcement activities, where transport safety officer may need to establish whether a person is committing an offence under the Marine Safety Act or Regulations made under that Act.

The risks of not ensuring information related to the recreational vessel, the person responsible for the vessel as well as being able to identify the vessel will mean compliance monitoring and enforcement of marine safety law may not function as intended under the Marine Safety Act.

If information relating to the vessel and the responsible person is not collected as part of the registration process, it would impede the ability for the regulator to regulate vessels for reasons of safety. There is a moderate risk that vessel safety standards may diminish, which would impact on the safety of boaters, such as increased risks of serious injury and fatalities.

### Data

Table 2‑1, provided earlier in this document, presented data in relation to the number of registered vessels. In summary, there were 201,532 vessels registered in Victoria as of 30 June 2021.

Table 3‑11 shows the number of infringements related to vessel registered and identification for the period 2012-13 to 2020-21.

Table 3‑11: Number of infringements related to vessel registration and identification from 2012-13 to 2020-21

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Infringement type | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
| Fail transfer requirement as acquirer | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to affix registration label | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to display identification mark | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 4 |
| Failure to ensure identification mark is displayed on PWC | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Failure to ensure identification mark is displayed on vessel | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Master operate an unregistered vessel | 1 | 2 | 6 | 4 | 0 | 2 | 4 | 9 | 13 |
| Owner cause or allow an unregistered vessel to be operated | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 2 | 1 |
| **Total** | **1** | **4** | **10** | **5** | **0** | **2** | **5** | **14** | **18** |

Source: Transport Safety Victoria

In order to assess the relative size of the problem, as assessment of the current number of infringements related to registration and identification is required.

Given the number of registered vessels from 2012-13 to 2020-21 average approximately 190,000 vessels in any given year, the Department considers there is a negligible proportion of vessels operating in Victoria that are not compliant with vessel registration and identification mark requirements under the current Regulations. On this basis, the registration and vessel identification scheme appear to be workings intended and meeting its objectives.

### Hull Identification Numbers

A Hull Identification Number (HIN) is a unique series of letters and numbers permanently affixed to a vessel. A HIN must conform to the relevant international standard (ISO 10087) and contain information regarding the vessel’s country of origin and either:

* the manufacturer, model, and year of production details for new boats, or
* an authorised agent code and the year it was affixed.

A HIN serves to provide a unique identifier for a vessel. No two vessels will have the same HIN. Boat manufacturers have been required to mark all new vessels with a HIN meeting the required international standard (ISO 10087) since February 2001.

Under the status quo, a person applying to register a boat is required to provide a HIN if one is affixed to the vessel.

There are two primary issues relating to the use of HINs:

* HINs are not checked or verified on registration
* If a vessel does not already have a HIN, there is no requirement to retrospectively obtain one for vessel.

#### Verification of HINs

TSV have raised concerns relating to the fact that the information provided to TSV in relation to the registration of a vessel is not verified. As mentioned previously, TSV do not verify the details provided by the owners in relation to the vessel and have raised concerns relating to the fact that the information may not be accurate. Requiring a HIN to be verified (if the vessel already has a HIN) or affixed (if a vessel does not have a HIN) by an authorised party, is a means by which the details of the vessel may be verified. Since each vessel has a unique HIN, it will allow for more effective identification of the vessel. However, note that the HIN scheme will only be effective if it is applied across all Victorian registered recreational vessels, meaning that both the existing fleet of registered recreational vessels as well as any newly registered vessel will need to have a HIN attached.

This issue arises in relation to other information collected and held as part of the registration of a vessel. TSV do not carry out any verification as to the accuracy or otherwise of the submitted information, with the exception of personal details.

When inspecting the registration database, it is clear that some of the data in the registration database is missing and some data is inaccurate. For example, in vessel registration data as of 31 July 2018 (the most recent data provided by TSV where the vessel length and material were recorded):

* there are 13 vessels registered as being timber PWCs, when no such vessels have ever been constructed
* more than 200 PWCs are listed as being over 4.8m in length (indeed five are recorded as being over 12m in length), when no PWCs are known to have been manufactured over 4.8m in length (3.5m is the approximate length of a 3-seater).

In addition, there is evidence that some persons falsely report vessel length in order to avoid regulations. For example:

* increased fees apply when vessels are greater than 4m in length – there is a disproportionate number of vessels registered at a length just under 4m to take advantage of lower fees.
* mandatory wearing of personal flotation devices (PFDs) is required for vessels smaller than 4.8m – there is a disproportionate number of vessels registered at a length just greater than 4.8m.

As such, the verification of the accuracy of a HIN may have flow on effects to improving the accuracy of the vessel information provided to TSV more broadly. Any measures to improve vessel information can, such as requiring a HIN to be verified, provides an additional point of contact by which the owner is prompted to ensure that the vessel information provided to TSV (such as length, breadth, type) is accurate and up to date. There also may be safety benefits from the additional point of contact, by enabling an accredited person with expertise in vessel safety and design, to sight the vessel. This may prompt the vessel owner to take actions to ensure the vessel is in a safe condition. There are therefore ancillary benefits to requiring HIN to be verified that are not necessarily limited to the benefits of ensuring accurate HIN information.

#### Extent of HINs installed in the current fleet

Based on information from TSV, VicRoads data indicates that 58 per cent of vessels have a HIN affixed (113,222 HINs recorded for a total fleet of 196,382 vessels in 2016-17). However, this is uncertain because the HIN is not verified and anecdotally it is known that many owners provide a reference or serial number in the belief that it is a HIN. Based on TSV analysis of a random sample of vessel registration application forms from 2016 and 2018, 33 per cent (34 out of 103 cases) of applications where a ‘HIN’ was provided was not actually a true HIN because of its format. Based on the assumption only 67 percent of HINs provided are true HINs, then it is anticipated that up to 39 per cent of all registered vessel (representing 67 per cent of the 58 per cent that have a HIN recorded) have a HIN properly allocated and affixed.

So, despite the current requirement to provide the regulator the HIN (were fitted) upon registration under the current Regulations, there is uncertainty about the actual validity of the HIN provided. This brings to question the accuracy of the records of HINs that are currently on record with TSV. The absence of accurate information on the vessel fleet, including the HIN attached to the vessel, diminishes the effectiveness of any compliance monitoring and enforcement of vessel registration and the identification of the vessel via its HIN.

#### Role of HINs in reducing crime and rebirthing of vessels

In addition, the HIN database is used by police as part of investigations into stolen vessels and alerts them of any attempts to re-register a vessel reported as stolen. Currently, due to the lack of monitoring of information as well as the lack of independently verified information in Victoria, there is anecdotal evidence of:

* non-existent vessels being registered, and the details subsequently used to defraud insurance companies
* vessels previously stolen (whether it be from persons within Victoria or interstate) being resold in Victoria (i.e. registered and sold).

The nature and extent of the latter problem is difficult to quantify due to the fact that not all criminal activity is being detected. Data that is available to TSV from VicRoads indicate that the Water Police detect around 4 in every 10,000 registered vessels as stolen, based on data for the period 2010 to 2018. Note that the VicRoads data is not representative of all stolen vessels in Victoria, since VicRoads data only captures vessels stolen as detected by the Water Police and not vessel listed under stolen property recorded by the Victorian Police force in general.

However, the Department notes that vessel rebirthing activity is impeded in other States (e.g., New South Wales, Western Australia and Queensland) due to the fact that the vessel HIN must be reported in those States, and vessels must be checked by administering authorities before registration can be processed. Because of the less stringent registration requirements in Victoria, Victoria risks being targeted as a state where stolen vessels in other states are registered and sold.

### Conclusion

Overall, there does not appear to be significant problem in relation to vessels operating in Victoria that are not compliant with vessel registration. However, the Department recognises there are issues in relation to the accuracy of vessel registration information, particularly given that there is no verification process to ensure that registration information provided to the regulator is correct. Additionally, given this problem relates to reducing crime and enabling improved law enforcement, it is better to prevent crime than to have to solve it.

The Department considers that, in the absence of regulations, there are high risks associated with the practice of rebirthing and there could be delays in solving crime. The Department believes there are insufficient incentives in the absence of regulations that vessel owners would take care in providing accurate data and information readily to the government and/or law enforcement agencies. On this basis regulation is warranted given the risks and consequences with breaching the law in unidentifiable vessels. The existence of regulations makes the requirements explicit for vessel operators and regulators and law enforcement agencies can have certainty with regard to monitoring and enforcement activity.

For these reasons, the Department will identify and assess options for intervention that address information issues related to the recreational vessels.

## Safety equipment – Mitigating the consequences of an incident

Previous sections of the RIS discussed a range of issues that primarily focus on the prevention of an incident occurring. Specifically, the licensing of masters ensures that there is competency to handle a vessel and an understanding of how to safely operate a vessel and vessel standards and requirements ensure safety on the water.

The negative outcomes associated with recreational boating (e.g. a death or serious injury) can be mitigated, not only by reducing the probability of incidents occurring, but also by minimising the consequences of an incident. There is a range of safety equipment available that is designed to reduce these consequences once an incident has occurred. For example, by protecting the vessel, protecting the personal safety of the occupants, or providing a means of distress alerting.

Various types of equipment can be used in the marine sector to mitigate the consequences of marine incidents on recreational vessels. While much of the safety equipment typically does not prevent marine incidents from occurring (other measures in the marine safety regulatory scheme, such as licensing and vessel standards, are intended to address this), safety equipment can generally be categorised as being useful for either:

* raising the alarm (i.e. attract a rescuer when an incident has occurred), or
* managing the consequences of an incident (e.g. preventing death or keeping a person afloat while overboard a vessel).

The different types of available for each category are shown in Table 3‑12.

Table 3‑12: Types of safety equipment available

|  |  |
| --- | --- |
| Raise alarm | Manage consequences |
| Long range   * emergency position indicating radio beacon (EPIRB) * marine radio * mobile radio * satellite phone | Protect vessel   * approved fire extinguisher * anchor and chain * sea-anchor / drogue * buck with lanyard * bilge pump system * pair of oars * bilge alarm * tool kit * fire blanket |
| Short range   * smoke signals * incendiary distress flares * red star parachute rocket * strobe light * signalling mirror * laser flare * V sheet * Torch |
| Protect crew   * personal flotation device (PFD) * life ring * boarding ladder * tow rope * life buoy * dingy or life raft * water * first aid kit |
| * global positioning system (GPS) |
| * compass |

The RIS explores the merits of safety equipment in relation to recreational boating. The analysis is undertaken separately for the use of lifejackets compared to other equipment that could be used on a recreational vessel. The reason for this approach is that the current regulations in relation to personal flotation devices (PFDs) requires the mandatory use of lifejackets. In comparison, other safety equipment are only required to be available on the vessel (i.e. there is no mandate to use that equipment). This warrants a separate analysis because the nature of the problem to be addressed is different between these types of equipment.

### Regulatory base case

This section is concerned with the use of a range of safety equipment on recreational vessels. In the absence of regulations, it would be reasonable to expect that there would be an incentive to avoid the purchase of safety equipment, particularly if that equipment is expensive. However, this may not hold true in all cases, some recreational boaters may have access to equipment on a vessel because:

* the equipment was purchased with the vessel, or
* some recreational boaters are more safety conscious and recognise the value of safety equipment.

Therefore, the Department expects that some safety equipment would be available in the vessel in the absence of regulations formally requiring that equipment to be available on the vessel. One of the considerations for this RIS is whether the full range of equipment that is necessary to address common safety hazards and risks would be used in certain situations. For example, whether there is a means of raising the alarm when operating more than 2 nautical miles offshore.

There is a further consideration for the base case, in the case of lifejackets. The key issue is whether the lifejacket would be used or worn in circumstances where there is a higher risk of being thrown overboard. In many instances, it is too late to put on a lifejacket whilst in the water, and it is necessary to already be wearing a lifejacket to gain the full benefit of a lifejacket.

The Department’s assessment is that there continues to be an underappreciation of risks inherent in recreational boating, meaning that boaters might not wear lifejackets at those times when they may be needed most. However, the Department acknowledges that, as with other safety equipment, there may be recreational boaters who would acknowledge risks and wear lifejackets.

Nevertheless, given these considerations, there may be a case to regulate, firstly to ensure that safety equipment are purchased and available in a vessel should an incident occur, and secondly, to require the use of equipment (i.e. lifejackets) to prevent.

### Lifejackets

The nature of recreational boating is such that participants are exposed to a variety of hazards. The lack of knowledge, risk taking or lack of consideration of such hazards and their impacts may lead to decisions which result in outcomes which were not intended or desired. The master of a vessel is more aware of the risks involved because the risks are either minimised or amplified by his or her knowledge and skill (or lack thereof) and his or her conduct, for example, exercising reasonable care or operating carelessly.

In most circumstances where the conditions are or appear to be good, the likelihood of a passenger entering the water is low and recovery from such an event (e.g. person overboard) is relatively straightforward. Indeed, in some inland boating locations where the water may only be waist deep, the best option may be to simply walk to safety. However, even in such operational circumstances the low frequency, high consequence event can occur. For example, a collision on such a waterway in good conditions (due to operator error, risk taking etc) may result in an unconscious person entering the water, who could very quickly drown if there were no actions taken by others to save such an individual. In such circumstances, the wearing of a PFD would provide potentially lifesaving protections.

#### The introduction of the mandatory wearing of lifejackets

Following a large number of deaths by drowning in the period 1999 to 2002, the Victorian Coroner’s Office identified that a large proportion of these fatalities could have been mitigated by the use of a PFD. Since then, the Coroner has consistently recommended that all occupants of a recreational boat should be required to wear a PFD at all times. There have been a total of 185 deaths associated with recreational boating in Victoria from 1989-90 to 2009-10, furthermore for the last decade 2010-11 to 2020-21 there have been a total of 86 deaths associated with recreational boating in Victoria. While there is no data and information to determine what percentage of these deaths are directly related to not wearing a PFD, the Department believes that the wearing of PFDs significantly reduces the consequences of an incident when a person enters the water when they are worn and worn correctly.

In 2005, following repeated Coroner recommendations, investigations and an extensive consultation process undertaken by TSV, regulations were made and introduced for the mandatory wearing of PFDs when in vessels less than 4.8 metres in length at all times and at times of heightened risk in an open area of the vessel (when the vessel is underway). These regulations came into effect 1 December 2005.

#### Trends in fatalities and serious incidents since 2005

The Department considers that the introduction of regulations for the mandatory wearing of PFDs at all times on vessels less than 4.8m in length and at times of heightened risk have had a positive effect on marine safety in Victoria. As identified in Figure 3, annual fatality rates in respect of recreational boating, have been recorded between 5 and 10.

Figure 3: Recreational boating fatalities and serious injuries from 2012-13 to 2019-20

Source: Transport Safety Victoria

Figure 4 below shows the number of fatalities for recreational boating fatalities in Victoria since 1990. Prior to the introduction of existing regulations, the average number of fatalities was 10.06 and after the introduction of the regulations the average decreased to 4.8 fatalities. The figure shows that while there was a steady trend in fatalities prior to the introduction of the existing regulations, this trend has changed following the introduction of the PFD wearing requirements. However, the Department notes that over the last decade, there has been an increase in the number of fatalities for recreational boating.

As is noted above, over the last decade there has been an upward trend in fatalities associated with recreational boating. While the last decade has seen an upward trend in fatalities, it has not surpassed the number of fatalities prior to the introduction of the existing regulations. As there have been no other significant factors undertaken or implemented since the introduction of the lifejacket regulations in 2005, the upward trend in fatalities over the last decade could be attributed to other factors.

The number of recreational boaters over the last decade has increased, as is evident from the marine licences that have been issued, and the increase in participants on the water could be attributed to the increase in fatalities and incidents.

It is also entirely plausible that the increase in fatalities over the last decade could not be entirely associated with a failure to wear a lifejacket. The nature of recreational boating is such that participants are exposed to a variety of hazards and risks which are not present in other types of recreational activities, and the increase could be reflective of the risks that boaters are taking.

Figure 4: Number of annual recreational boating fatalities in Victoria from 1989-90 to 2018-19

Source: Transport Safety Victoria

It is important to note that data on some types of rescues is difficult to obtain as often the occurrence of the rescue and its details are not recorded. This is especially the case if there was no damage to a vessel or if a person who was thrown overboard was retrieved by a nearby vessel. In these cases, the Water Police, insurance companies or TSV would not be notified. Situations where passers-by see a fellow recreational boater “in trouble” are possibly quite common but are never reported.

#### The purpose and function of PFDs

Media reports regularly report on recreational incidents which could have resulted in fatalities had circumstances been different. These case studies highlight the fact that PFD use is a factor in many of these incidents which has enabled people to be rescued and/or enabled people to swim to shore to raise the alarm. In each case it was likely (but not absolutely certain) that the persons involved would have drowned if not wearing a PFD. PFDs successfully carried out their function of keeping persons afloat sufficiently long enough for rescue to be effected.

|  |
| --- |
| Case Study 1 On 30 April 2017 a 4.9 metre vessel with three persons on board capsized whilst crossing the bar at Marlo. All were wearing PFDs and survived.  It is likely that wearing the PFDs contributed to all 3 surviving. Case Study 2 Three fishermen spent more than 20 hours in Corio Bay on 21 February 2018 after their boat overturned and capsized. They were left floating in their life jackets overnight before managing to swim to shore.  As it happened in summertime in shallow water the temperature was reported as being about 22 degrees and, whilst hypothermic, the men managed to keep together and kept paddling to keep warm.  It is highly unlikely any of them would have survived without wearing their PFDs. |

The above case studies illustrate the importance PFDs have as a means to keep people afloat whilst awaiting rescue. In all cases PFDs kept persons afloat enabling them either to be rescued or to self-rescue. It is likely that any of these incidents could have resulted in fatalities if PFDs had not been worn.

PFDs and other forms of safety equipment are critical to continuing this, and in turn, enabling a continuation of the downward trend in fatalities associated with recreational vessel operations.

PFDs that are difficult to fit or difficult to fasten/tie PFDs carried on vessels have decreased over time, increasing compliance. Today, PFDs that are worn tend to be comfortable, correctly sized to fit the individual and worn properly. The importance of correctly wearing PFDs should not be understated. Many fatalities result from PFDs which have not been put on correctly or put on in a hurry which results in ill-fitting and improperly fasten buckles. Over time, many people have been found drowned floating beneath the surface underneath a PFD which is entangled with them. This is indicative of either an ill fitted PFD which has come off in the water or of a PFD being thrown at a person already in the water who was unable to correctly fit it.

This RIS examines whether there is sufficient evidence to demonstrate that these regulations have been effective in saving lives and examines whether arguments in favour of intervention continue to exist, and whether the continuation of PFD carrying and wearing requirements can be justified for continuation in the proposed Regulations.

#### PFD infringement data

Data supplied from TSV on infringement notices issued is shown in Figure 5. There are 5 PFD related marine infringement offences:

* failure to carry required safety equipment – PFD,
* failure to wear a PFD while underway in vessel 4.8m or under,
* failure to wear PFD while underway during times of heightened risk,
* fail to ensure persons under 10 wears PFD, and
* master operating vessel when persons onboard are not wearing required PFD.

It should be noted that out of all the marine infringement offences where there was available data (Victoria Police data is unavailable), the offence relating to the wearing of a PFD while underway in a vessel 4.8m or under has the highest number of infringements from the time period of 2013-14 to 2019-20.

The second relevant infringement offence is the failure to carry the required safety equipment of a PFD. Infringement numbers associated with this offence are significantly lower than that of the aforementioned offence above, which appears to show that since the introduction of the mandate to wear and carry PFDs in 2005 there has been a high compliance with the regulation to carry the appropriate type of PFD. However data on infringements must be treated with caution as it is dependent upon the source, the level of enforcement, enforcement practices and the priorities set by the parties involved. It is known, for example, that a majority of vessels directed to pull alongside or directed to stop are initially engaged due to speeding or boating in no-boating areas. Checks for compliance with other requirements are then performed and infringement notices are generally issued for non-compliance with safety equipment requirements because these requirements are less subject to challenge. It is therefore difficult to attach high confidence to the conclusions that can be drawn from the data, however since the introduction of the mandatory wearing of PFDs the number of infringements issued tend to suggest that there has been a steady level of non-compliance that has been trending down.

Figure 5: Transport Safety Victoria infringement data from 2013-14 to 2019-20

#### Issues relating to the use of lifejackets

The Department is aware of a range of issues in relation to the use of lifejackets that should be considered as part of the review of the Marine Safety Regulations. These include:

* The standards that apply to lifejackets, and which standards should be recognised in the regulations.
* At what age should children be required to wear a lifejacket at all times whilst on a recreational vessel.
* Whether a person on a recreational who is on a vessel but with children onboard, should be required, as the only adult on board the vessel, to wear a lifejacket at all times.

*Lifejacket standards*

Lifejackets are required to conform to an approved technical standard. Under the current Regulations, there are a range of lifejackets standards accepted, including Australian Standards, ISO standards, and European Standards.

Over the previous decade there have been updates and improvements to the technical standard for lifejackets. In particular, the AS 4758 standards, which is the Australian Standard for lifejackets has been updated a few times over the last ten years. AS 4758 has additional safety features and performance improvements that are not found in other standards for lifejackets. Some examples of safety improvements, include:

* the inclusion of thigh restraints and crotch straps,
* requirements in relation to foam flotation material, and
* Improvements to Inflation systems for lifejackets.

The AS 4758 standard is more superior than the older standards for lifejackets such as the AS 1512 standard. One of the main improvements is in relation to buoyancy. The AS 4758 standards requires a higher level of buoyancy than the old standards.

Accordingly, the Department considers that it is worth considering whether the AS 4758 standard should be the only standard that is accepted in the regulations noting that it is a better lifejacket standard compared to some other standards.

*Mandatory age for children*

Currently there is a requirement within the regulations that children that are aged less than 10 years of age must wear a lifejacket at all times on vessels which are underway if in an open area of the vessel. If that same child is aboard a powerboat more than 4.8 metres in length, that child would not be required to wear a lifejacket, except where ‘heightened risk’ applies.

Children are considered to be at a greater risk of drowning than adults if they are to enter the water unexpectedly. Maritime legislation in Victoria recognises that 12 years of age as being the age at which a person is considered to be responsible and capable of better judgement, whilst it is also the same age at which a person becomes eligible for a restricted marine licence. Compared to other jurisdictions throughout Australia, all jurisdictions except Victoria and Western Australia require children up to 12 years of age to wear a lifejacket at all times whilst aboard a vessel.

*Heightened risk when operating solo*

Whilst the regulations may mandate the wearing of an approved lifejacket in certain circumstances on a recreational vessel, there is however no definition of wear in this context and no mandate within the regulations on how the lifejacket is to be worn whilst on a recreational vessel. Lifejackets are required to conform to an approved technical standard, although these standards are focused on the physical characteristics and performance of the lifejacket. Anecdotally, compliance agencies have encountered vessel occupants who had a lifejacket but were incorrectly wearing the lifejacket in a situation where it was mandated. In order for the lifejacket to function as it is intended to do so, it is crucial that lifejackets are correctly worn and in accordance with the manufacturer’s instructions.

### Other marine safety equipment

In addition to lifejackets, and as discussed earlier, there are a range of safety equipment that could be used in relation to the operation of a recreational vessel. The rationale for requiring different equipment to be kept on the vessel is considered.

#### Current requirements

Requirements for safety equipment vary based on the type of vessel you are operating, the waterway you are operating on, and in some cases, your proximity to the shore. A vessel owner should make a safety assessment of their vessel operations and determine whether more equipment is required to take reasonable care of everyone’s safety. Although not prescribed under the regulations, there are many extra items that the master of a vessel can carry on board their vessel that can be easily acquired, such as a first-aid kit and a basic tool-kit.

Table 3‑13: Mechanically powered vessels – Powerboat up to 4.8 metres in length

|  |  |  |  |
| --- | --- | --- | --- |
|  | Coastal Waters | Enclosed  (Bays & estuaries) | Inland  (Rivers, lakes & dams) |
| **Mechanically powered vessels – Powerboat up to 4.8metres in length** | | |
| **PFD** | Type 1 – *1 for each person on board or being towed* | Type 1 – *1 for each person on board or being towed* | Type 1, 2 or 3 – *1 for each person on board or being towed* |
| **Approved fire extinguisher** | Where any fuel is carried. The number and size of extinguisher depends on length of vessel and fuel tank capacity. | | |
| **Waterproof buoyant torch** | 1 | 1 | 1 |
| **Anchor and chain or line and both** | 1 | 1 | 1 |
| **Bailer** | 1 – *if no electric or manual bilge pumping system* | 1 – *if no electric or manual bilge pumping system* | 1 – *if no electric or manual bilge pumping system* |
| **Bucket w/ lanyard** | 1 | 1 | 1 |
| **Electric or manual bilge pumping system** | 1 – *if vessel has covered bilge or closed underfloor compartments other than airtight void spaces.* | 1 – *if vessel has covered bilge or closed underfloor compartments other than airtight void spaces.* | 1 – *if vessel has covered bilge or closed underfloor compartments other than airtight void spaces.* |
| **Pair of oars w/ rowlocks** | 1 | 1 | 1 |
| **Hand-held orange smoke signals** | 2 | 2 |  |
| **Hand-held red distress flares** | 2 | 2 |  |
| **Lifebuoy (if vessel more than 8 m but less than 12m in length)** | 1 | 1 | 1 |
| **Lifebuoy (if vessel more than 12m in length)** | 2 | 2 | 2 |
| **Dinghy or liferaft (if more than 12m in length)** | 1 |  |  |
| **Compass** | 1 – *if more than 2 nautical miles from the coast* |  |  |
| **Marine radio** | 1 – *if more than 2 nautical miles from the coast* |  |  |
| **Red star parachute distress rocket** | 1 – *if more than 2 nautical miles from the coast* |  |  |
| **Approved EPIRB** | 1 – *if more than 2 nautical miles from the coast* |  |  |

Table 3‑14: Mechanically powered vessels – Powerboat more than 4.8 metres in length

|  |  |  |  |
| --- | --- | --- | --- |
|  | Coastal Waters | Enclosed  (Bays & estuaries) | Inland  (Rivers, lakes & dams) |
| **Mechanically powered vessels – Powerboat more than 4.8metres in length** | | |
| **PFD** | Type 1 – *1 for each person on board or being towed* | Type 1 – *1 for each person on board or being towed* | Type 1, 2 or 3 – *1 for each person on board or being towed* |
| **Approved fire extinguisher** | Where any fuel is carried. The number and size of extinguisher depends on length of vessel and fuel tank capacity. | | |
| **Waterproof buoyant torch** | 1 | 1 | 1 |
| **Anchor and chain or line and both** | 1 | 1 | 1 |
| **Bailer** | 1 – *if no electric or manual bilge pumping system* | 1 – *if no electric or manual bilge pumping system* | 1 – *if no electric or manual bilge pumping system* |
| **Bucket w/ lanyard** | 1 | 1 | 1 |
| **Electric or manual bilge pumping system** | 1 – *if vessel has covered bilge or closed underfloor compartments other than airtight void spaces.* | 1 – *if vessel has covered bilge or closed underfloor compartments other than airtight void spaces.* | 1 – *if vessel has covered bilge or closed underfloor compartments other than airtight void spaces.* |
| **Pair of oars w/ rowlocks** | 1 | 1 | 1 |
| **Hand-held orange smoke signals** | 2 | 2 |  |
| **Hand-held red distress flares** | 2 | 2 |  |
| **Lifebuoy (if vessel more than 8 m but less than 12m in length)** | 1 | 1 | 1 |
| **Lifebuoy (if vessel more than 12m in length)** | 2 | 2 | 2 |
| **Dinghy or liferaft (if more than 12m in length)** | 1 |  |  |
| **Compass** | 1 – *if more than 2 nautical miles from the coast* |  |  |
| **Marine radio** | 1 – *if more than 2 nautical miles from the coast* |  |  |
| **Red star parachute distress rocket** | 1 – *if more than 2 nautical miles from the coast* |  |  |
| **Approved EPIRB** | 1 – *if more than 2 nautical miles from the coast* |  |  |

#### Variations in risks and hazards

Most of the items of safety equipment considered are likely to be beneficial to boaters and that the cost of requiring boaters to carry any one of them is likely to be less than the benefit of doing so. The diverse situations in which boats are used and the different risks posed by each should be considered. The risks faced during a tuna fishing trip on the continental shelf off Portland are quite different than those faced while water skiing on Lake Eildon. The risks faced by a keelboat crew engaged in an offshore race are different than those faced by the operator of a personal watercraft off St Kilda beach.

These different risks are reflected in the current different safety equipment requirements for different places. The most stringent of the current requirements are for offshore waters, where if an incident was to occur it is much less likely that the boat in question will be in sight of a rescuer. Thus, boats in offshore waters are currently required to carry longer range means of raising the alarm, such as an EPIRB, marine radio and parachute flare. On other waters these items are optional, reflecting the greater likelihood that the alarm could be raised by visual means. By contrast, an anchor is a mandatory piece of equipment in all locations, reflecting the importance of being able to remain in place if an incident occurs. Indeed, in all inland waters simply staying anchored in one place would be sufficient to attract assistance in some cases.

For most part the required safety equipment does not vary by the type of boat, the quantity required varies in some cases. This is reflective of the fact that the risk is presented by the location and the activity being pursued rather than the boat itself. For example, in vessels which are sufficiently large to be able to cross a sandbar safely, the danger inherent in doing so cannot be ameliorated by using a larger rather than a smaller boat. The danger is posed by the activity itself. This also reflects the fact that the activity being pursued defines the appropriate boat in many cases, for example, while some boats have multiple uses, many boats which would be quite suitable for towing water skiers on a lake would be out of place on Bass Strait.

The current requirements of the regulations reflect the accumulated leanings of many years’ experience, in Victoria regarding the equipment that is likely to be important in an emergency situation.

Each year in Victoria, numerous marine incidents occur. Whether assistance is required from other boaters or from search and rescue agencies, safety equipment can be (and is) critical to successful mitigation – both in terms of ‘raising the alarm’ but also in terms of ‘managing the consequences’ while the person(s) involved in the incident await rescue. The critical question to be asked is how many deaths or injuries would have occurred if this equipment was not required to be carried. It is reasonable to expect that many more deaths and injuries would have occurred in the absence of carrying safety equipment aboard a vessel.

#### Incentives and decision making

The master of a vessel has a clear personal incentive to consider investing in safety equipment and to make sure it is available for use if and when needed. The individual will compare the cost of the equipment with the expected benefit that it provides, noting that of course that the expected benefit will be a product of the individual’s perception and understanding of risk. Owners and masters of vessels, particularly those who have a level of experience, tend to discount the possibility that they will find themselves in a precarious situation and in need of help, and may have an attitude of ‘that will never happen to me’. In circumstances such as these, the decision not to carry safety equipment is the product of distortion. This is because is most cases (due to the relatively low risk) the risks are disregarded rather than being managed. These risks, while being real, are at too low a level to be tangible.

A further problem is that the master or owner’s decision to disregard certain risks and the associated need for safety equipment will not be apparent to passengers on the vessel – particularly those who are infrequent users of vessels and have little or no understanding of the nature or extent of the risk being taken on their behalf. There is both an information asymmetry between the master and his or her passengers as well as potential external costs which can be expected to be equal to the expected costs associated with the risk that is borne by the passenger. Such costs are not considered by the master or owner when making the decision to purchase and maintain safety equipment. As a result, the decision-making process is distorted and can reasonably be expected to not produce the economically efficient outcome from society’s point of view.

#### Changes in technology

In a review of the regulations and the requirements that apply to recreational boating, the Department considers that there needs to be an appreciation and understanding of technological developments and changes in behaviour. This is important as it would inform whether any regulatory requirements are no longer required, or whether there should be any changes to those requirements.

Maritime search and rescue beacon technology has been developing at an exponential rate, which has resulted in faster detection of digital cries for help, greater accuracy in pinpointing the exact location of the distress signal and the ability to generate localised alerts. As it is expected that the price of EPRIBs and personal locator beacons (PLBs) will continue to fall, following a well-established downward pricing trend that is line with typical consumer electronics pricing.

Changes in technology have not been limited to search and rescue beacon technology. Marine radios have also undertaken advancements in technology, which has seen the emergence of the VHF marine radio. Modern VHF marine radios provide access to a 24/7 distress monitoring service, providing warnings available out to 20 nautical miles of the Victorian coastline and also provide weather forecasts. The cost of the marine radio unit and antenna are comparatively similar for 29MHz and VHF marine radios, however a VHF marine radio requires an operator licence which is a one-off fee.

Flares in general only have a serviceable life of three years, thus requiring frequent replacement and provide a limited benefit as safety equipment. Unless in distress, most boaters will never activate a flare, and are not trained in flare use, thus raising the potential for injury associated with flare activation and the potential harms associated with flare use. Flares serve to raise the attention of persons by means of visual signalling, however if flares cannot be seen, or if other parties do not recognise the flare as an emergency signal, they are of limited benefit as they can be used only for a short period of time. EPIRBs and PLBs are associated with better safety outcomes than flares and are not cost prohibitive for boat owners, as they are comparable in price with flares.

### Conclusion

Safety equipment alone will not typically prevent marine incidents from occurring, rather the purpose of safety equipment is to prevent these incidents from being worse than they might otherwise be.

Safety equipment can be and is critical to successful mitigation, not only in terms of ‘raising the alarm’ but also in terms of ‘managing consequences’. The items of safety equipment considered are likely to be beneficial to boaters. As there are diverse situations in which boats are used and the different risks associated with the type of activity, these different risks are reflected in the different safety equipment requirements for different places.

Without regulatory requirements, the Department expects that the consequences of marine incidents would be more severe (i.e. there would be more fatalities and more serious injuries). For example, a lifejacket could prevent a person from drowning following the vessel capsizing. The Department would expect that vessel owners would not keep or maintain the suite of necessary safety equipment on the vessel. Vessel owners, masters and passengers on recreational vessels would not necessarily ensure all safety equipment is carried or carried in the right quantity. Further, safety equipment such as lifejackets may not be worn, preventatively, in circumstances where there is an increased risk of entering the water. The Department also believes that in the absence of regulations the use and maintenance of safety equipment would decline over time. On this basis regulation is warranted given the high consequences of an incident occurring and safety equipment not being available.

Further chapters of this RIS, will consider options and whether any improvements can be made to the status quo.

## Safety in the provision of pilotage services

Pilotage service providers (PSPs) are entities that engage or employ sea pilots to provide pilotage services for the safe navigation of ships in certain port waters.

The purpose and function of sea pilots is to navigate and guide large ships through certain waters. These are necessary for the safe passage of ships due to the nature of the environment (i.e. requiring local knowledge).

### Background

#### Summary of regulatory requirements that apply to PSPs

PSPs are regulated under the Marine Safety Act. There are two main obligations that are established under the Act that related to PSPs:

* PSPs are required to be registered under the Marine Safety Act
* PSPs have general safety duties under the Marine Safety Act
* PSPs are required to comply with ‘safety standards’ prescribed in the Marine Safety Regulations.

#### PSP Registration

All PSPs are required under the Marine Safety Act to be registered. Prior to the reforms mentioned in the previous section, registration only involved making an application to the Safety Director. There were no other requirements that were imposed on PSPs. With the new registration requirements, PSPs applying for registration are required to demonstrate two components:

* Whether the PSP has the competence and capacity to provide pilotage services safely
* Whether the responsible persons in the PSP (i.e. directors of the organisation) are a fit and proper person to provide pilotage services.

#### General safety duty

Section 29 of the Marine Safety Act outlines the general safety duty that is owed by PSPs.

This section also outlines examples of what the duty entails. This includes:

*(a) ensure, so far as is reasonably practicable, that a pilot provided by the person to an owner of a vessel is not impaired by fatigue, alcohol or other drug;*

*(b) ensure, so far as is reasonably practicable, that a pilot provided by the person to an owner of a vessel to carry out an activity mentioned in paragraph (a) or (b) of the definition of marine safety work—*

*(i) is medically fit and able to carry out the activity for which the pilot has been provided; and*

*(ii) is qualified and competent to carry out the activity for which the pilot has been provided;*

*(c) provide, so far as is reasonably practicable, such information, instruction, training or supervision to a pilot provided by the person to an owner of a vessel as is necessary to enable the pilot to safely carry out an activity mentioned in paragraph (a) or (b) of the definition of marine safety work*.

A general safety duty is a principles-based approach to regulating for safety. It requires that the duty holder identify the risks and hazards involved in the operation/provision of pilotage services. Additionally, it requires the duty holder to take the steps, so far as is reasonably practicable, to eliminate those risks/hazards or to control those risks.

#### Base case and current requirements in the regulations

The Department understands that the existing PSPs already have sophisticated safety management systems in place. Accordingly, the issue at hand is not whether the PSPs registered to provide pilotage services are sufficiently managing risks to safety. The Department understands that PSPs have extensive systems and risk controls in relation to the provision of pilotage services. Instead, the issue relates to one of compliance monitoring and enforcement. While the sector regulator, TSV, has powers to audit, conduct investigations and monitor compliance with the Marine Safety Act, there are no safety management system requirements prescribed in the legislation or regulations. This impedes the ability of the regulator to effectively and efficiently monitor compliance with and enforce requirements relating to the general safety duty.

There is one supporting requirement prescribed in the current Regulations that apply to PSPs. The requirement is to develop systems to manage fatigue and to manage the impairment of pilots by alcohol and drugs (more to say prevent the impairment). These requirements support the general safety duty requirement as it requires the documentation of systems and process to manage fatigue and manage drug and alcohol.

There are also consultation requirements imposed on PSPs in relation to the development of these systems. The consultation requirements include consulting pilots, relevant port bodies, and other person that may be affected by the establishment of those systems.

### Reforms to PSP regulation under the Marine and Fisheries Legislation Amendment Act 2019

In 2017, the Department, in conjunction with TSV and port authorities, undertook a review of PSP regulatory requirements. This review was undertaken in response to a new PSP entrant to the market and concerns that there were insufficient checks and balances on new entrants to the industry. Following this review of the regulation of PSPs, the Department recommended that there should be changes to how PSPs are to be regulated.

The reforms involved changes to the Marine Safety Act to reform the process for the registration of PSPs. Specifically, the following changes were implemented as part of the *Marine and Fisheries Legislation Amendment Act 2019*:

* Providing the Safety Director with powers to refuse registration on the grounds that the applicant for registration (i.e. prospective PSP) does not have the competence or capacity to provide pilotage services safely (or consider any prescribed requirements)
* Giving powers to the Safety Director in relation to the suspension and cancellation of inactive pilot licences following a prescribed process (not acted as a pilot for at least 12 months)
* Incident reporting by PSPs to the Safety Director – this is an obligation on the PSP to report incidents
* Regulation making powers – including in relation to safety management systems, procedures and policies for—ensuring that pilots are not impaired by fatigue, alcohol or drugs; the training, instruction, assessment and supervision of pilots; maintenance and records of the aforementioned systems, procedures and policies and notices required to be given to the Safety Director in respect of those matters; and for ensuring that pilots employed or engaged are qualified and competent, and medically fit, to act as pilots.

Further, at the time of the development of the Bill and as a result of the review, it was envisaged that there would be consideration of appropriate safety management system requirements for PSPs.

This section will review whether it is still necessary to impose safety management system requirements on PSPs, and, if so, what the form and content of the safety management system should be.

### Problem to be addressed

The function of sea pilots is to ensure that masters of vessels are able to safely navigate through designated or prescribed waters. Such waters require specific knowledge or experience to be able safely navigate through, particularly in the case of large ships. PSPs manage such pilots and have a role to play to ensure that pilots have proper control and conduct of a vessel.

As outlined in the previous section, there are a range of regulatory requirements imposed on PSPs. The purpose of these regulatory requirements primarily relates to safety. This is supported by the general safety duty. Additionally, the registration requirement supports this and enables the sector safety regulator to identify and monitor the PSP’s compliance with their regulatory requirements.

The matter for consideration, in relation to the Marine Safety Regulations, is whether there should be any supporting regulations to ensure that a PSP actively manage risks to safety in accordance with their safety duty.

Based on section 29, which is the general safety duty provision for PSPs, there is an expectation that some specific safety risks and matters are managed by PSPs, namely:

* impairment of pilots (either from fatigue, alcohol or drugs),
* ensuring that pilots are medically fit to carry out work,
* ensuring competency of pilots, and
* ensuring there is appropriate and sufficient communication to pilots.

#### Nature of the piloting task and the risks involved

The provision of pilotage services involves:

* the embarking and disembarking of a pilot on a vessel through the transfer of that pilot from land to the vessel (and vice versa), and
* navigating the ship being piloted through the designated or port waters.

This means that the majority of the risks involved in the provision of services relate to pilot. This is reflected in the underlying safety duty. The safety duty sets expectations that key risks relating to the actions of a pilot are managed, including by ensuring that the pilot is sufficiently competent (i.e. has the knowledge, skills, competency) to undertake the task, and is fit to undertake it as well.

The first set of risks relate to the safe transfer of a pilot to and from a vessel. This could be done either by a vessel taking the pilot from land to the vessel to be piloted or this could be done by way of air (i.e. by helicopter). In any case, there will be supporting staff involved in these operations, such as masters of the vessels transferring the pilot. The PSP is expected, through the general safety duty, to also ensure safety in respect of those persons (named as ‘marine safety workers’ under the Marine Safety Act).

The Department’s assessment is that the risks of a serious incident are low, given the historical number of incidents involving ships in port waters. However, were an incident to happen, the consequences of that incident may be significant. The effect of a marine incident could lead to:

* harm to persons involved on the vessel or other waterway users, or
* significant environmental damage (e.g. oil spillage, destruction of marine life or habitat), or
* disruption to trade and economy (e.g. there is an impact to the transport of goods into a port).

Accordingly, the Department considers that it is important that safety risks are pre-emptively managed to prevent an incident from occurring, since if those risks are not managed the consequences could be significant.

### Extent of the problem

There are three registered PSPs in Victoria. There are a number of licensed pilots employed or engaged by those PSPs.

Each of these organisations provided pilotage services in relation to ships coming in and out of “pilot required waters”. Table 3‑15 shows the number of ship movements requiring pilots for the Port of Melbourne and the Port of Geelong. This shows the extent of services provided and the degree of risk exposure faced by PSP organisations. As seen in Table 3‑15, the majority of ship movements requiring a pilot have occurred in the waters to and from Port of Melbourne.

Table 3‑15: Number of ship movements requiring pilots from 2017-18 to 2021-22

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 |
| **Total Pilotage Movements** | 5,870 | 5,941 | 5,605 | 4,798 | 5,370 |
| Total Geelong Movements | 1,078 | 1,046 | 938 | 825 | 1,188 |
| Total Melbourne Movements | 4,792 | 4,895 | 4,667 | 3,973 | 4,182 |

Source: Transport Safety Victoria

For reference, data on ship movements where the master of the vessel is exempt from requiring a pilot are presented for context and comparison purposes in Table 3‑16. The majority of ship movements in pilot required waters require a pilot (or required the master to have an exemption).

Table 3‑16: Number of ship movements where vessel is exempt from requiring a pilot from 2017-18 to 2021-22

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 |
| **Total Exempt Master Movements** | 3,190 | 3,286 | 3,181 | 3,119 | 3,300 |
| Total Geelong Movements | 14 | 76 | 94 | 177 | 241 |
| Total Melbourne Movements | 3,176 | 3,210 | 3,087 | 2,942 | 3,059 |

Source: Transport Safety Victoria

The Department understands that there have been approximately - 50 marine incidents involving a pilot over the last five years (or approximately 5 per annum). In the context of the number of ship movements requiring a pilot, there is a low proportion of movements that result in a safety incident. This accords with the Department’s view that safety risks are a low likelihood event.

### What are the requirements for pilotage in other jurisdictions?

The provision of pilotage services is also regulated in other jurisdictions. Other states and territories regulate the provision of pilotage services. Additionally, the Australian Maritime Safety Authority (AMSA) regulate coastal pilotage (i.e. the provision of pilotage services around the Great Barrier Reef and Torres Straight), as shown in Table 3‑17

Table 3‑17: Safety management system requirements in other Australian jurisdictions

|  |  |  |  |
| --- | --- | --- | --- |
| **Jurisdiction** | **Responsible pilotage entity** | **Relevant requirement** | **Particulars of requirements** |
| New South Wales | Port Authority of New South Wales | Marine Pilotage Code of Conduct | Risk management – Port Authority must ensure that a documented safety management system is in place  Fatigue Management – The Port Authority is to promulgate and manage a fatigue management system for marine pilots.  Drug and Alcohol Management – The Port Authority is to promulgate and manage a drug and alcohol program for marine pilots. |
| Queensland | Maritime Safety Queensland  Gladstone Ports Corporation  North Queensland Bulk Ports Corporation  Port of Townsville Limited  Far North Queensland Ports Corporation  RTA Weipa Pty Ltd CAN 137 266 285 | Transport Operations (Marine Safety) Regulations 2016, Regulations 167 | Pilots and fatigue management – A person who employs pilots to perform pilotage services on the person’s behalf at a port must devise and implement, for the pilots, a fatigue management program |
| Western Australia | Unknown | Shipping and Pilotage (Ports and Harbours) Regulations 1966 | No safety management system |
| Tasmania | Tasmanian Ports Corporation Pty Ltd (TasPorts) | Marine and Safety (Pilotage and Navigation) Regulations 2017 | No safety management system |

### How are safety risks managed in other sectors?

In addition to the general safety duty, there are a range of other sectors that also require the preparation, implementation and compliance with a safety management system.

For example, under the rail safety national law, rail operators are required to:

* be accredited under the national law
* comply with safety duties
* prepare and implement a safety management system

Similar requirements apply to bus operators in Victoria. That is, be accredited, comply with safety duties and prepare and maintain safety management systems (known in the sector as Management Information Systems and Maintenance Management Systems).

The common characteristic between these sectors is that there are significant consequences should an incident occur, or the likelihood of an adverse event is high. Based on these characteristics there have been regulatory requirements imposed to ensure that risks to safety are documented, controls established to eliminate those risks or mitigate the consequences of the risks were they to eventuate.

### Conclusion

There are existing legislative obligations imposed on PSPs to ensure safety, as far as is reasonably practicable, in respect of the provision of pilotage services. This means that risks to safety in relation to pilotage must be eliminated or controlled by PSPs.

On the whole, there have only been a small number of incidents in relation to the provision of pilotage services. This indicates to the Department, that safety risks are being managed. However, in the absence of regulatory requirements, the Department expects that there would be higher number of incidents involving ships which are under the conduct of a pilot if safety risks and hazards are not appropriately managed. Further, there may be incidents involving a pilot while that pilot is being transferred to a vessel from land or vice-versa. The full range of risks may not be appropriately considered or managed by PSPs.

Given the nature of consequences of an incident occurring in relation to large ship movements, the Department considers that it is important for a regulator to be satisfied that risk controls have been properly and appropriately considered. This means that there may need to be additional controls or requirements imposed so as to enable the regulator to monitor compliance and audit PSPs.

The Department has considered options in chapter 5 in relation to the means by which such safety issues are to be assessed, managed and documented.

# Objectives

The objectives of the proposed Regulations considered in relation to the various proposed policy positions would produce outcomes that promote and improve safety, while minimising regulatory and compliance costs of industry and enabling effective enforcement of marine safety laws.

These objectives are important as they provide a framework for the development and assessment of options. These should align with the objective of the regulations and the principal statute. The objectives of the Marine Safety Act are to promote:

* the safety of marine operations,
* the effective management of safety risks in marine operations and the marine operating environment,
* continuous improvement in marine safety management,
* public confidence in the safety of marine operations,
* involvement of relevant stakeholders in marine safety, and,
* a culture of safety among all participants in the marine operating environment.

The overarching objectives of the proposed Regulations are described below.

**Safety**

Safety entails minimising fatalities and serious injuries. For example, minimising incidents that result from persons who do not have the appropriate skill and qualifications being licenced to operate a vessel, faults relating to the design of the vessel, vessel overloading or not wearing appropriate personal flotation devices.

Success against this objective may include maintaining or improving the level of safety outcomes as measured by the number of fatalities and serious injuries and improved public confidence in the safety of marine operations.

**Minimising regulatory burden**

Minimising regulatory and compliance costs entails achieving the safety objective with the lowest necessary regulatory burden on industry participants. Success against this objective may lead to maintaining or increasing the level of participation in the recreational boating sector. This shows that the regulatory costs are not so high that it deters people from using recreational vessels.

**Effective and efficient compliance monitoring and enforcement**

Effective and efficient compliance and monitoring entails ensuring that the regulator (Maritime Safety Victoria) has appropriate regulatory power and information to be able to conduct compliance monitoring and enforcement to support the primary safety objective (e.g. allowing powers for inspections to be able to actually monitor and enforce standards, if any standards are required).

Success against this objective may involve whether the regulator has been provided the resources, powers and tools necessary to perform its function and ensure the safety of recreational marine users.

# Options Identification

## Methodology for identifying feasible options

A RIS is required to identify feasible options to address the problems identified, and then compare the relative costs and benefits to determine the preferred option compared to the proposed Regulations. A variety of methods were used to compile a list of proposed feasible options for each proposal. This includes:

* Stakeholder consultation: The Department undertook internal and external stakeholder consultation to canvass views on proposed changes to the existing regulations.
* Interjurisdictional comparison: The Department assessed how other Australian jurisdictions manage marine safety and the relative benefits their regimes generate from a safety perspective.
* Regulatory and non-regulatory options: The Department considered regulatory and non-regulatory options and the degree to which a non-regulatory approach could work in achieving marine safety outcomes.
* Options and analysis previously undertaken: The Department revisited the RIS for the 2012 Regulations and a paper developed in 2011 in relation to a range of options for marine licensing.
* Status quo: The Department considered the status quo (existing regulations) as these regulatory requirements have evolved over decades in order to achieve the implicit purposes of the Act and various policy proposals developed over time. Refinements have been made to these regulations over time to minimised administrative and compliance costs and keep up to date with technology and the growth within the marine environment. The status quo is a legitimate starting point for the consideration of options.

When considering options for each proposal the Department considered whether variables within options related to options design as opposed to requiring the development and description of a completely separate option. Design factors, for example, may relate to the term of a licence as opposed to what is required to obtain a licence.

## Marine licences and endorsements

As identified in Section 3.2 of this RIS, the key policy issue in relation to marine licensing is in relation to the requirements for obtaining a marine licence. That is, what should an applicant for a marine licence have to do in order to be granted a licence. The options are explored and considered in this section of the RIS.

In addition to this, there is a capability to prescribe endorsements for marine licences authorising the licence holder to be a master of a prescribed type of vessel or a prescribe activity.

Finally, there is consideration of some of the parameters of the marine licence that is also prescribed in regulation.

### Options for a licensing model

#### Base case

The base case is no regulations. In the absence of regulations, there is no mandated tests or requirements in relation to knowledge, competency, or skills (such as passing a knowledge test) in respect of safe recreational boating. While a person would still need a licence to operate a vessel (as this is a requirement under the Marine Safety Act), there would be no additional requirements imposed on an applicant for a general marine licence or a restricted marine licence other than completing an application form to obtain either licence. If a person failed to complete the application form, the Safety Director, the regulatory authority who issues licences, would be required to reject an application for a licence.

#### Option 1 – Knowledge test (status quo)

The status quorequires an applicant for a marine licence to pass a knowledge test set by the Safety Director. The knowledge test is a test of the person’s understanding of the requirements of the Marine Safety Act, the proposed Marine Safety Regulations and waterway rules.

Under this option, the theory-based test would continue to be delivered either by VicRoads or through an accredited training provider. Prior to taking the test, applicants would have the option of studying the *Recreational Boating Safety Handbook 2021*, as issued by TSV, or attending a course of an accredited training provider. The current test is a multiple-choice test and applicants must answer 26 questions correctly out of 30 questions i.e. achieve 87 per cent. A similar approach to testing would be taken under this option.

A similar test would be required for a restricted licence.

The Department has considered whether any improvements to the current knowledge test can be made. The Department observes that the current Regulations are a test of knowledge primarily in relation to regulatory requirements. There is an opportunity to expand what can be tested (as this is determined by the regulations) to matters in relation to safety practices such as trip planning and what to do in an emergency. This would seek to address some of the main causes of incidents (such as vessel disablements caused by old fuel or flat batteries). This would expand the pool of questions that could be asked on a test. As the type of test to be completed by applicants for a marine licence must be prescribed in the Regulations, there is limited power to change the pool of questions without a regulatory change. The Department considers that, based on the number of incidents such as vessel disablements etc, there could be a greater focus on matters such as trip preparation and emergency management on the test. This change cannot be done without a corresponding change to regulations.

#### Option 2 – Knowledge test and practical on-water course

Option 2 would require the applicant to pass a knowledge test set by the Safety Director (as detailed in Option 1) and also complete an on-water practical course provided by an authorised third-party provider. This option is similar to what is required in New South Wales for a NSW General Boat Licence.

The Department proposes that the on-water course will take approximately 2 hours and involve receiving instruction from a TSV approved trainer on how to operate the vessel including manoeuvring and practical safety activity. The on-water course would be supported by an active learning resource to be developed by TSV[[17]](#footnote-18). This resource would outline further theory and instructions that relate to the on-water course content.

There would be no practical assessment associated with this option. However, it would be mandatory to complete the course in order to obtain a licence. Evidence of completion of the course, such as a certificate, would need to be provided when applying for a marine licence.

The purpose of requiring additional entry requirements on initial licensing of a vessel master is to provide that there is a minimum skill level in the operation of a recreational vessel.

#### Option 3 – Knowledge test and mandatory on-water assessment

This option requires applicants to pass a knowledge test set by the Safety Director (as detailed in Option 1), and also complete an on-water assessment. The difference between Option 3 and Option 2, is that there is a mandatory test of practical skills (instead of just the completion of a course for practical skills).

The practical test would be similar to a driving practical test where the person seeking the licence would complete a course that tests various vessel handling skills such as manoeuvring. The Department proposes a practical test that will take approximately 1 hour to complete. The course would be at cost to the applicant and delivered through an approved provider. Applicants would use course provider vessels that are of a standardised size to undertake the test.

As for Option 2, the intention of this option is for the Safety Director to be confident that a prospective master of a vessel has the requisite skills needed to safely operate a recreational vessel.

#### Other options considered

Another option that was considered was an option that requires the applicant for a licence to pass a more difficult knowledge test, complete an on-water course and pass a mandatory on-water assessment. This option is not considered as a standalone option that was analysed in this RIS, noting that this would be a combination of all three options outlined earlier in the document.

Another option was considered where a person could only use their restricted licence while under the supervision of a fully licensed adult. The Department does not consider that this type of restriction is necessary. These types of licences are already restricted as there are limitations on the time of operation, speed and not being permitted to tow. The requirement to have a fully licenced adult present may restrict the ability of the person to utilise their vessel and the fully licensed adult may not necessarily help the restricted licence person learn. For these reasons, this option is not considered further.

### Endorsements

The framework set up under the Marine Safety Actgives flexibility to prescribe categories of licence endorsement for a specific class of vessel or activity. This power to prescribe endorsements could be exercised if there are potential safety risks that need to be managed or where there is a higher skill set than that is required for standard recreational boating operations.

Operating a PWC (jet ski) is currently the type of recreational vessel that requires a licence endorsement. The main rationale for this requirement is that PWCs require additional knowledge and skill to safely handle. They have unique characterises such as using speed to effect manoeuvrability such as turning. Additionally, PWCs can achieve high speeds, turn rapidly in a tight circle and unlike boats, the rider of a PWC does not have a structure around them in the case of a crash or collision. Other endorsement types have been considered in the past. These include:

* High speed operation
* Towed sports
* Operating offshore
* Vessels carrying more than 12 passengers.

In 2012, when the current Regulations were developed, the Department did not recommend that such endorsements be included in the Marine Safety Regulations. While the endorsements target specific safety risks, at the time of the review of the 2012 Regulations there did not appear to be a sufficient safety justification to require these endorsements to be required. The Department considers that, based on the evidence available to the Department, this continues to be the case. For this reason, the only endorsement type that is further considered and analysed in this RIS, is the PWC endorsement. Specifically, whether there should continue to be an endorsement for PWCs and what are the requirements to obtain such an endorsement.

#### Base case – no regulations

In the absence of regulations, there would be no requirement for persons to obtain an endorsement in order to lawfully operate a PWC. The only requirement that would be needed is for the person to have a marine licence.

#### Option 1 – PWC endorsement with a knowledge test (status quo)

Under Option 1, operators would require both a marine licence and a PWC endorsement on that licence in order to be permitted to operate a PWC. In order to obtain a PWC endorsement, under this option, the person would need to:

* hold a marine licence (or be in the process of applying for a marine licence), and
* successfully complete a knowledge test in relation to the operation of PWCs.

The Victorian Recreational Vessel Safety handbook contains information about the operation of PWCs. There are currently 4 pages of content within the handbook that specifically relate to this and would form the basis of questions on the test. Questions are derived from information on state rules and the regulations governing PWC use. Similar to a general marine licence, the knowledge test would be able to be undertaken either at VicRoads or at an accredited training provider and consists of 15 multiple-choice questions, of which at least 13 must be answered correctly i.e. a pass mark of 87 per cent.

#### Option 2 – PWC endorsement with knowledge test and a mandatory on-water assessment

Option 2 would go further than Option 1 in that it would require a marine licence holder to obtain a PWC endorsement, but the requirements to obtain that endorsement would be stricter. In particular, the licence holder would be required to sit a mandatory on-water assessment as per the Option 3 for the licensing requirements for a general or restricted marine licence outlined in Section 5.2.1.4.

### Other changes for marine licences

#### The period of a marine licence

Under current regulatory requirements (Regulation 35) all new and renewed marine licences are issued for a period of 5 years or for the period specified on the licence holder’s renewal notice (1, 3 or 5 years). This arrangement was introduced with the remake of the Regulations in 2011 and replaced the previous licence period that allowed for choice between 1, 3 or 5 years from the outset. At the time, the Department concluded that setting the licence period to be 5 years only would save in administrative and compliance costs over the life of the proposed Regulations (for example by avoiding unnecessarily updating photos too frequently).[[18]](#footnote-19)

Prior to the making the current Regulations (2012), applicants for new licences and those wishing to renew their licence were given the choice in either case, to have a licence for a period of either 1, 3 or 5 years. The majority (56 per cent) chose to renew for 5 years and a large proportion chose to renew for 3 years (32 per cent). However, a small proportion continued to choose to renew for a period of 1 year (12 per cent).

Some licence holders have objected to the loss of choice in relation to the licence renewal period. TSV advises that, anecdotally, there are some boaters who may have been disadvantaged by this change. The cost of a 5-year renewal could be a barrier or impost for those on lower incomes or those on welfare of some kind. One 5-year option also may be prohibitive for a family of applicants where multiple licences must be renewed. The Department recognises that there are benefits associated with allowing a short licence period, as it enables the licence holder to choose which is more suitable for them at the time.

To address this, the Department is seeking feedback on reintroducing a shorter licence period (e.g. 1 year) to provide the option of choosing either a 1-year marine licence or a 5-year marine licence. The draft Regulations propose this change.

## Vessel standards and safety

The risks associated with incidents that relate to the materials used to build a vessel (material factor incidents) can be improved through improving the condition of vessels. To reduce the risk of material factors incidents boats must first be well constructed. After they are built, they must be well maintained. The options discussed in the following sections seek to address these two fundamental matters relating to vessel safety.

The Department considers that regulatory measures are needed to incentivise vessel owners to comply with their obligations under the Marine Safety Act and to minimise uncertainty relating to one’s obligations under the Act. In particular, the Department considers whether it is feasible to prescribe further matter relating to vessel safety to the extent that the definition in the Act may not be sufficiently specific regarding what constitutes a contravention. In particular, the fact that the existing offence provision has subjective elements makes it difficult to proactively enforce – because the only available method of enforcement is through the court system (rather than through the issue of infringement notices).

Given the vast number of industry participants, with just under 200,000 registered vessels in Victoria and range of different types of registered vessels, regulatory intervention will largely ensure certainty around the minimum level of compliance or specificity of measures in meeting safe vessel obligations under the Marine Safety Act and provide certainty of compliance and enforcement measures.

### Base case

Section 87 of the Marine Safety Act makes it an offence for an owner or a master of a vessel to operate a vessel or allow that vessel to be operated, is the vessel is unsafe.

Without regulations, there would be uncertainty and debate in relation to the meaning of an unsafe vessel, as the Act does not prescribe what this means.

### Option 1 – ‘Fit for purpose’ vessel requirements (status quo)

Under Option 1, the proposed Regulations would define the meaning of a vessel being fit for purpose. The proposed Regulations would list a range of conditions or performance standards that the vessel must meet. This option will not require vessels to be built to a specified standard. However, requiring vessels to be ‘fit for purpose’ as a condition of registration provides a means to set a minimum standard for recreational vessels in relation to its seaworthiness.

The current prescribed conditions (Regulation 27 under the current Marine Safety Regulations) provide the basis for defining what is fit for purpose. These conditions prescribe that a vessel is not fit for purposes if any of the following conditions are met:

* the hull of the recreational vessel is unable to maintain watertight integrity
* there is fuel leaking from the recreational vessel's fuel system or engine
* the recreational vessel's steering system does not control the movement of the recreational vessel
* a ventilation system used for ventilating a space or spaces in the recreational vessel is not functioning
* if material insulating machinery in the recreational vessel from fire or flammable materials is missing or damaged
* if materials or items comprising part of the recreational vessel's reserve buoyancy are missing or damaged, or
* if engine kill switches are fitted to the recreational vessel and are inoperable.

The measures specified above identify major systems and items on board a recreational vessel that must be operable to enable a vessel to function properly. For example, watertight integrity and buoyancy are basic elements of a vessel that ensures the vessel is able to safely remain on the water. A steering system that effectively controls the direction of the vessel in conjunction with an engine kill switches to ensure the vessel can be stopped when necessary, allows for the safe operation of vessel in terms of its manoeuvrability and trajectory so as to avoid any safety incidents, such as a collision. Inoperability of these system are indicators that the vessel is unsafe to use on the water.

The Department is aware of another issue that is integral to the safe of operation of a vessel: the placement and installation of navigation lights. The current Regulations require the use of navigation lights when a vessel is used at night time or during periods of restricted visibility. However, there are no requirements in relation to the types of lights used, their placement (e.g. where on the vessel and their performance (e.g. how bright the lights are and what arc of visibility is gained from using the lights). These performance standards are specified in the COLREGs and adopted internationally. However, there needs to be a local requirement prescribed in regulations to ensure that the requirements can be enforced in Victoria.

Therefore, as part of this option, and as an improvement to the status quo, there would be a requirement that, where navigation lights are already fitted to a vessel, the display of those lights under certain conditions (e.g. night-time or during low disability) must be consistent with existing international conventions (COLREGs standard published by the International Maritime Association).

### Option 2 – Prescribe standards for recreational vessels

A more detailed approach to improving vessel safety is to require the vessel to be built and maintained to a certain standard such as and Australian Standard (e.g. AS 1799).

Option 2 would require vessel to be built to the AS 1799 standard. The AS 1799 standard specifies requirements relating to maximum load, persons and power capacities, reserve buoyancy, stability, fore protection and other safety aspects for powered craft up to 15m in length used as recreational boats.

### Option 3 – ‘Seaworthiness’ inspections of vessels

In addition to requiring vessels to meet minimum set of standards to improve safety of the vessels (as per Option 2), there could be requirements to have vessel inspections to examine whether vessels actually meet those requirements or standards.

Therefore, Option 3 requires there be a prescribed standard that all recreational vessels must comply with and requires the owner of a vessel to have that vessel inspected at prescribed intervals.

In order to implement this option, there would need to be consideration of the following factors:

* What standard is the vessel being inspected against? The regulations would need to prescribe whether vessels should be inspected for their ‘fit for purpose’ conditions or whether vessels should be inspected against a more in-depth standard such as an Australian Standard.
* Who is conducting the inspection? Are those persons regulated such as through an accreditation scheme? Inspections could be conducted by a government official, however, there is some doubt as to whether there is the resources to do this. The inspection function could be outsourced to third-party agents and these agents could be required to hold an accreditation to conduct such inspections and be audited by a government regulator. Additional regulations may be needed to be setup such a scheme for inspections by a third-party.
* How frequently are vessels required to be inspected? There are a range of sub-options including: annual inspections or at some other regular interval, or inspection after, or in relation to a certain event such as the transfer of a vessel, the repair of a vessel or the initial registration of a vessel.

An inspections regime would essentially require the boater to ensure the vessel meets the specific design, construction, stability and safety equipment standards required for the vessel. For the purposes of the analysing this option against the base case and other options, Option 3 would require recreational vessels to be inspected by an authorised third-party inspector to assess whether the vessel complies with the AS 1799 standard. This inspection would be required to be undertaken whenever the vessel is transferred to another person.

### Other options considered

The Department has considered a range of other options in relation to improving the safety of recreational vessels. The Department has assessed that these options are not suitable to address the problem and will not consider these options further.

The other options include:

* A logbook of maintenance – under this option, vessel owners would be required to keep a logbook of any maintenance undertaken of the vessel. There are many pitfalls associated with logbook requirements in other regulatory schemes. In particular, logbooks can be falsified which would raise questions about the integrity of such a scheme. For this reason, the Department will not further consider logbooks as a feasible option to address the identified issues.
* An education campaign – information could be provided to recreational vessel owners to encourage or remind them about maintaining vessels. There are already a range of campaigns aimed at addressing this issue.
* Rebate scheme – rebates could be provided to recreational boaters to encourage vessels to be upgraded, replacing older vessels. Whilst such a rebate would reduce costs for recreational boaters, there may be better use of government revenue. Accordingly, this option is not considered further.

## Maintaining safety during the operation of a vessel

Actions taken during the operation of a vessel (or indeed some actions that aren’t taken) could have implications for the safety of passengers onboard the vessel. For these reasons, the current Regulations require the master of a vessel to take certain actions while the vessel is being operated, or before the vessel is operated.

The Department has reviewed these requirements and has assessed that regulations that require the master of a vessel to:

* take steps to ensure that the vessel is not overloaded during the operation of the recreational vessel, and
* ensure that passengers are not onboard the vessel while it is being refuelled or being restarted after refuelling,

are still required.

The Department has identified that there are minor improvements that can be made to these regulations, to address specific issues. The following section outline these changes, and the rationale for them.

### Overloading vessels

It is an offence under the Marine Safety Act for the master of a vessel to operate the vessel if the master knows that the operation may endanger a person because of its overloading. The current Regulations prohibit the use of the vessel if:

* The number of persons onboard the vessel exceeds the maximum number of persons specified on the ABP, or
* The number of persons onboard the vessel exceeds the maximum number of persons prescribed in Schedule 2 of the Regulations.

Schedule 2 of the Regulations contain a number of tables outlining the maximum capacity of the vessel depending on the length and breadth of the vessel and whether the vessel has a flying bridge.

The latest edition of the ABP Standard changes how passenger loading information is required to be presented on the plate. Edition 5 requires passenger load to be displayed as “Number Persons # or not exceeding XXX kg” In contrast, edition 4 of the ABP Standard required passenger load to be displayed as “Max Persons # = XXX kg”.

In order to be consistent with the latest edition of the ABP, the Department considers that the Regulations also include requirements in relation to the mass of persons on board vessels in addition to their headcount of persons.

In effect, the Regulations will require masters of vessels to ensure that passengers do not exceed the mass limits for the vessel as specified on the ABP. If a vessel does not have an ABP, the headcount requirements listed in the current Schedule of the Regulations will apply.

The Department notes that there may be some enforcement challenges associated with this requirement. While prescribing maximum person mass capacity is a more accurate means by which to limit the safety risks posed by overloading vessels, this will be significantly more difficult to both comply with and enforce. It requires more effort for a boater to determine the mass of each person and the sum of all masses of people. In addition, it may be more difficult to confirm whether there is a contravention of the prescribed mass capacity. The Department would expect that enforcement authorities would largely rely on headcount to determine whether the overloading requirements are being complied with.

The Department understands that, with respect maximum capacity requirements, only New South Wales prescribe specificity in the Regulations as to what constitutes safe loading, similar to what is currently specified under Victorian Regulations. Similar to Victoria, New South Wales require that the number of persons on a vessel must not exceed the maximum capacity displayed on the ABP or safety label. However, New South Wales also requires that the vessel is not loaded such that the mass of total persons and/or equipment does not exceed the maximum safe capacity in accordance with the ABP or safety label on a vessel – this requirement is not currently prescribed in the current Victoria regulations. The Department notes that other Australian jurisdictions rely on broader safety duties obligations or ensuring the vessel is “not overloaded” when dealing with safe loading requirements.

### Refuelling vessels

The current Regulations prohibit the master of a vessel from refuelling that vessel while there are passengers on board the vessel. This restriction applies only if the vessel is at a wharf, jetty or pier. There are risks associated with refuelling a vessel, and this regulation is aimed at eliminating the risk of death or injury by requiring that passengers are not onboard the vessel.

However, the Department notes that the risks surrounding refuelling can be present even when the vessel is not at a wharf, pier or jetty. The current regulations do not restrict or impose obligations on the master of the vessel when a vessel is being refuelled at location other than a wharf, pier or jetty.

To improve safety, it is proposed that new offences be introduced to impose obligations on the master of the vessel at locations other than wharfs, piers, or jetties to encourage passengers to not be on the vessel whilst it is being refuelled and being restarted after being refuelled. The Department recognises that it may not be possible to fully comply with this requirement in all circumstances (i.e. it may not be safe to require the passengers to leave the vessel). To address this, there would be exceptions to the offence.

## Vessel registration and identification

As discussed in Section 3.5.1, the Marine Safety Act establishes a scheme to register recreational vessels. Section 36 of the Act provides that the method for registration, the renewal of registration and the transfer of a registration is to be prescribed in the Regulations.

Specifically, in order to give effect to the scheme, the Regulations need to prescribe the following matters:

* which vessels are required to be registered and which vessels are exempt
* the requirements for an application for registration
* the period of registration
* the process for renewal of registration
* the process for the transfer of a registration of a vessel to another person.

The current Regulations prescribe these matters. The Department has reviewed these Regulations and considers that these Regulations should be remade with minor amendments. The Department assesses that there are not viable alternatives to these regulations which give effect to the registration scheme.

The following sections provide a description of the regulations and the justification for them.

*Exemptions*

The regulations specify the following recreational vessel types are exempt from registration requirements:

* Vessels that do not use engines or motors for propulsion: Wind and human powered vessels are types of vessels that do not use engines or motors for propulsion. Enforcement activity in relation to wind and human powered vessels tend to be concentrated on the master of the vessel at the time the vessel is being operated, not the vessel owner. For this reason, in comparison to ascertaining the identity of the master of the vessel, the Department considers the registration of wind and human powered vessels to identify the owner is, on balance, not as critical to the safety of marine activities.
* Recreational tenders: Recreational tenders are vessels used in connection with the operation of a larger mother ship vessel. Recreational tenders conventionally display the identification mark or name of the mother ship in addition with the letter “T” to signify that the vessel is a tender. This, industry developed, convention is sufficient to be able to identify the vessel as a tender and for the owner of the tender to be identified. Accordingly, the purposes of registration can be satisfied without having to separately register this type of vessel.
* Domestic commercial vessels: Under Section 4B of the Marine Safety Act, a domestic commercial vessel is not a recreational vessel. Victorian domestic commercial vessels are required to be commercially certified under Maritime National Law (the Marine Safety (Domestic Commercial Vessel) National Law Act 2012). The commercial certification process identifies the relevant characteristics of the vessel and the vessel owner. In effect, all the relevant purposes of registration are satisfied as part of the national law process.
* Vessels from other States and Territories: The principle of mutual recognition is an inter-government agreement that each party recognises the authority granted in one jurisdiction as equivalent to that issued in the other jurisdiction. In the case of vessel registration, exemptions may apply where compliance with the requirement to have a vessel registered in another State or Territory is also deemed compliant with the equivalent requirement to be registered in Victoria. This reduces the regulatory burden on vessel owners. It is appropriate to provide for limitations on an exemption for registration to vessels that are visiting and operating in Victorian waters on a temporary basis.
* Vessels under control of manufacturer or dealer: There are circumstances where a specified person needs to operate or be in possession of the vessel while the vessel is:
  + in process of manufacturer or repair
  + in the process of being offered for sale
  + being tested
  + being used to demonstrate the vessel to a purchaser or prospective purchaser
  + being delivered for or after sale
  + carrying our repairs and returning the vessel it its owner after being repaired.

### Hull Identification Numbers

As discussed in section 3.5.4 of this RIS, HINs serve to provide a unique identifier for a vessel. The problem that has been identified is that HINs are not verified upon registration and that not all vessels have a HIN affixed to the vessels (such as older vessels).

The Department has considered three options to address these issues.

#### Option 1 – Supply HINs on registration of the vessel if known (status quo)

A range of information needs to be provided during the process of registration to achieve the purposes of registration. Basic information about the vessel which assists with its identification is essential, as is information sufficient to identify the person responsible for the vessel.

In addition to this information, under this option, information relating to the HIN that is affixed to the vessel would need to be provided on the initial registration of the vessel. However, this information will only need to be provided if the vessel has a HIN affixed to the vessel. There would be no requirement for vessels without HINs to have a HIN fitted to the vessel. There would also be no verification of the HINs provided on registration.

The status quo would ensure that the registration database contains HIN information (in that there is information about newer vessels). As a permanent vessel identifier, the HIN will remain with the vessel throughout its life. If a vessel changes hands and is registered by the new owner under a new registration number, the HIN still remains with that vessel and the registration history of that vessel can be tracked. However, the issue of the verification of that information would not be addressed by this option.

#### Option 2 – Verification of HINs

Option 2 builds on Option 1 in that it requires the same type of information required under Option 1 (status quo), with the added requirement that the HIN on the registered vessel must be verified. Since all new vessels have a HIN installed on the vessel, the primary regulatory burden imposed by this option is to have that information verified before the vessel can be registered.

Whilst a HIN could be verified by a government official (e.g. by an officer of TSV or an officer of VicRoads), there is merit in having a third-party undertake this function. For example, a HIN could be verified by an accredited HIN agent. In order to implement this, there would need to be a regulatory scheme set up to accredit third-party agents to ensure the integrity of the scheme.

Therefore, this option would require the owner of a recreational vessel registering to have their vessel inspected by the accredited agent. The agent would verify the vessel and the HIN affixed to it.

This option would go to address the issue of the veracity of the information contained in the vessel registration database and improve the ability of enforcement agencies, such as the police, to reduce crime and the rebirthing of stolen vessels.

#### Option 3 – Retrospective application of HINs to older vessels

This option builds on Option 2. HINs would need to be verified on registration of a new vessel per the requirement under Option 2. However, under this option, any vessel which does not have a HIN attached to the vessel would need to have a HIN newly affixed to the vessel. This option would expand the number of vessels that have a HIN affixed to it, and further improve enforcement capability in relation to reducing vessel-related crime.

This option would be similar to what is adopted in other Australian states (e.g. New South Wales, South Australia and Western Australia) with respect to mandatory HIN installations. These States require compliance with a “Boat Code” under certain circumstances to identify registered boats and other vessels. Under the Boat Code, a unique HIN plate is affixed to the vessel’s hull.

The regulations would need to specify when older vessels would need to have the HIN affixed to it. This option could be implemented by specifying that the HIN must be affixed and verified as part of the transfer of that vessel to another owner. Alternatively, this could be required within a specified time of the commencement of the Regulations. For the purposes of the analysis in this RIS, the Department will assess this option that the HIN must be affixed and verified on older vessels (currently without HINs) when the registration of that vessel is transferred to another a person.

## Safety equipment

The current Regulations contain a suite of requirements in relation to safety equipment. Each of the pieces of equipment within the suite have a unique and specific function. Combined they provide the vessel occupants with the necessary elements to protect themselves in and out of the water and at times of distress. These items often combine to protect vessel masters and their passengers. For example, even after an alarm has been raised, whether that be via a marine radio or mobile phone, a flare may be necessary to help a rescuer locate the vessel in distress. Furthermore, the incident which caused the distress call may damage the radio and a flare could be the only means of raising the alarm making it more useful than it would be in another case.

This RIS considers whether these requirements should continue to be prescribed in the Regulations and whether, having regard to changes in technology, there should be any changes to the currently prescribed equipment. Only one option has been identified for the problems related to prescribing safety equipment because there are no feasible alternatives to this option.

### Base Case

Under the base case, there would be no regulations mandating the use of safety equipment.

Further, and importantly, there would be no regulations mandating the wearing of lifejackets in certain circumstances. Lifejackets would be purchased and worn at vessel master’s own discretion.

### Option 1 – Require equipment to be on the vessel and used in certain circumstances (status quo with minor improvements)

Under this option, recreational vessel owners would be required to have safety equipment in the recreational vessel consistent with the current Regulations. The type and amount of safety equipment would differ depending on the type of vessel being used, the length of that vessel, and the location of operation.

Table 3‑13 and Table 3‑14 presented in section 3.6.3.1 of this RIS are examples of the current requirements.

Additionally, there would also be requirements for the mandatory wear of lifejackets consistent with the current Regulations (Part 6 Division 4). These are to:

* (Regulations 100 and 101) mandate the wearing of an approved PFD at all times aboard certain recreational, hire and drive vessels on an open area of the vessel and during times of heightened risk.
* (Regulation 102) Prescribe that children aged less than 10 years old must wear a PFD at all times whilst aboard vessels that are underway in coastal, enclosed, or inland waters in an open area of the vessel.
* (Regulation 104) Specify that a master must not operate or allow a person to operate a vessel, or cause or allow a vessel to tow a person unless each person on board is wearing a PFD.

In addition, there would be improvements made to the status quo safety equipment requires to address issues identified during the review of the current Regulations. The details of these proposed improvements are outlined below and include:

* changes to regulations relating to the carriage and wearing of PFDs/lifejackets.
* The type of marine radio required to be used when a recreational vessel is operating in certain waters (i.e. offshore more than 2 nautical miles)
* Alternatives to flares required to be kept on certain recreational vessels when operating in enclosed waters.

#### Lifejackets

Section 3.6.2.5 outlined a range of issues in relation to the current implementation of lifejacket regulations, including in relation to:

* the standards that apply to lifejackets, and which standards should be recognised in the regulations.
* at what age should children be required to wear a lifejacket at all times whilst on a recreational vessel.
* whether a person on a recreational who is on a vessel but with children onboard, should be required, as the only adult on board the vessel, to wear a lifejacket at all times.

The proposed Regulations seek to make improvements to the status quo regulations by:

* changing the references to ‘Lifejackets’ from PFDs
* increasing the age of compulsory lifejacket wearing to 12 years old
* phasing out of all non-Australian standards and
* mandating PFDs to be worn as they are designed to be and in accordance with the manufacturer’s instructions.
* Require a person on a recreational who is on a vessel but with children onboard, to wear a lifejacket at all times.

*References to lifejackets*

The term of ‘PFD’ or ‘Personal Flotation Device’ is the technical term for a lifejacket in recognised technical standards such as the Australian Standard AS 4758. Previously, the standards used the term ‘personal flotation device’, however, in recent versions of the standard, AS 4758 refers to the devices as ‘lifejackets’. The Department proposes to change the references in the Regulations to use the term ‘lifejackets’ to be consistent with the standard. The benefit of this change is the term ‘lifejacket’ is a more common or colloquial term for the device in comparison to ‘PFD’ or ‘personal flotation device’

*Age for mandatory wear by children*

The *Marine Safety Regulations 2012* mandate that children aged less than 10 years old must wear a PFD at all times on vessels that are underway if in an open area of the vessel. It is proposed to increase the age limit to 12 years old.

Compared to adults, children are considered to be at a greater risk of drowning if they enter the water unexpectedly. Currently a child aged 10 and over, whilst aboard a powerboat that is over 4.8m in length, is not required to wear a PFD except where there is ‘heightened risk’. The Marine Safety Act recognises that 12 years of age as being the age at which a person is considered to be responsible and capable of better judgement by reference to being eligible for a restricted marine licence at that age.

This change is proposed to improve the safety of children between 10 and 12 years of age.

*Accepted lifejacket standards*

The current Regulations permit the use of a range of Australian and international standards for lifejackets. The Department is proposing to no longer permit the use of lifejacket standards other than AS 4758, which is the latest Australian standard for lifejackets.

The primary reason for considering only accepting the latest Australian Standard is the safety features and functionality found in the AS 4758 standard but not in the older standards. AS 4758 has replaced the Australian Standards: AS 1512, AS 1499 and AS 2260.

The proposal is to prescribe the AS 4758 as the only acceptable standard in the Regulations. However, TSV will still have a capability to approve standards, for example through a gazette notice, for use as needed or in exceptional circumstances.

Should the proposal be adopted, the Department is seeking information and comment on whether existing standards that are currently in use should be grandfathered and how long they should be grandfathered for. That is, should old lifejackets conforming to the old standards be used for another 3, 5 or 10 years? As point of comparison, in Tasmania, when a similar proposal was implemented, old lifejackets could be used for 10 years before they had to be replaced and conform with the AS 4758 standard.

*The manner in which lifejackets are worn*

The wearing of a lifejacket is mandatory in certain circumstances. However, in order to be effective, it must be worn as it is designed to be worn and in accordance with the manufacturer’s instructions. While the regulations mandate the wearing of an approved PFD in certain circumstances on a recreational vessel, the regulations do not prescribe the method for wearing the lifejacket. Therefore, without supporting Regulations, this cannot be enforced.

The Department and TSV are aware that there are recreational boaters who do not wear lifejackets appropriately. As discussed earlier in the RIS, lifejackets are a critical piece of safety equipment to keep boating participants alive when in the water following an incident. They must be worn properly to be effective.

To address these issues, the Department is proposing that the Regulations contain offences outlining that lifejackets must be worn in accordance with the manufacturer’s instructions. This is expected to improve safety of recreational boaters, and enable compliance monitoring and enforcement of this requirement by TSV and the water police.

*Operating Solo*

The wearing of a lifejacket is mandatory in times of heightened risk. Operating alone, or on board the vessel with only children (and no other adults are on board), on a recreational vessel is considered to be an activity of heightened risk. The Department and TSV are aware of concerns that this may create a situation where an adult may not wear a lifejacket when they are travelling with a child or alone aboard a vessel.

To address this issue, the Department is proposing that the Regulations contain a new requirement to be introduced to clarify that if there is a person in command or charge of the vessel with only children (under 12 years old) then that adult must wear a lifejacket as this reflects the heightened risk of this circumstance.

#### Accepted marine radios

The current Regulations enable boaters to choose the type of marine radio they carry on board the vessel. Schedule 3, Table B of the Regulations outline these requirements which vary depending on the type of vessel, whether mechanically powered, human powered or wind powered and the particular classification of the waterway.

Mechanically powered vessels are required to carry aboard a marine radio in coastal waters when greater than 2 nautical miles from shore. Either a VHF marine radio or 27 MHz radio can be used, under the current Regulations, to comply with this requirement.

The option for consideration and comment is that only a VHF marine radio can be used to comply with the requirement to have a marine radio in specified circumstances.

The rationale for only permitting a VHF radio, and not permitting a 27MHz radio, is that the range of VHF radios is longer, and that VHF radios are more reliable in deteriorating conditions when compared to 27MHz. There are further benefits for VHF radios from a search and rescue perspective, VHF marine radios are supported by the Marine Radio Victoria network and provides 24/7 distress monitoring while also providing weather forecasts and safety alerts. In contrast, 27MHz marine radios are not monitored by a professional service and are not carried on board many commercial vessels. This means that their usefulness is limited when the master of a recreational vessel is required to raise the alarm in an emergency or to communicate effectively.

The Department notes that VHF radio require the use of an operator licence or a certificate of proficiency and that there are costs associated with complying with these requirements.

Overall, the Department expects that there would be improved communications through the use of a VHF radio in emergency situations where a recreational vessel is operating in offshore environments more than 2 nautical miles from the coast.

#### Alternatives to flares

Existing Regulation 96 provides for the mandating of items of safety equipment in relation to the requirement of the carriage of hand-held distress flares. Dependent upon the type of vessel and classification of the waterway, this mandate prescribes the quantity of flares required to be kept on the vessel.

Powered vessels are required to carry on board flares in both enclosed and coastal waters. As established within the Act and the Regulations, enclosed waters include major boating waterways such as Port Phillip and Westernport Bays.

Given the issues with the carriage of flares, including their limited use and the difficultly in relation to the disposal of flares, the Department is proposing prescribing alternatives to flares. The alternatives include:

* compressed air horn,
* GPS enabled emergency position indicating radio beacon, or
* personal locator beacon.

Flares are intended to raise the attention of persons, whether on the water or land, by means of visual signalling. However, they only provide a short duration of signalling life before extinguishing. So if they are not seen by others in a position to provide rescue they don’t serve their purpose. The proposed alternatives listed rely on other means to raise the alarm, either by electronic means (i.e. a signal is sent to emergency services) or by sound.

EPIRBs and PLBs do not raise the attention of parties in the immediate visual and auditory range of an incident vessel. Instead, they send signals identifying the location of the vessel that are detected by emergency services. Incident reports indicate that the carriage and use of EPIRBs have resulted in a number of marine rescues and are likely to have prevented marine fatalities.

A compressed air horn alerts the attention of nearby persons through a loud sound that can be repeated. This piece of equipment is also adopted in other jurisdictions. For example, New South Wales’ marine regulations requires the carriage of an aerosol can air-horn as piece of safety equipment.

Functionally, flares serve to alert the attention of other persons and signal the location of the recreational vessel requiring assistance or rescue. The alternatives for consideration achieve this more effectively through means other than visual.

While some human and wind powered vessels are required to carry flares in coastal waters, and requirements for rocket flares exist in offshore coastal waters, it is not proposed to change these specific requirements. It is noted that offshore flares are primarily carried to signal search and rescue aircraft or vessels, rather than initially signalling a distress or raising the alarm.

### Other options considered

The Department considered a range of options that would provide some flexibility for recreational boaters around the requirements for safety equipment. While the current Regulations contain a suite of requirements in relation to safety equipment, each piece of equipment provides a specific function, either combined with other pieces of safety equipment or as a standalone piece of equipment. The Department considered the following items as part of the review into the Regulations, taking into consideration the changes in technology in maritime safety equipment over the last decade.

#### Inspection and servicing of lifejackets

The Department also considered mandating an inspection and servicing period for PFDs however this option was cost burdensome to both the government and boaters in its establishment and operation. It would require an accreditation and training scheme for inspectors. This option was determined non-viable.

#### Mobile phones

The Department did consider including mobile phones as an alternative to marine radio however there are various limiting factors with mobile phones in a marine context including:

* A mobile phone can only be used to make a specific point to point call. When a call is transmitted over a marine radio, any listening boat operator or base station operator can respond to the call. This greatly increases the likelihood of a timely and effective response to the distress call.
* A marine radio is more reliable, in that it is being powered from the boat’s battery source. A mobile phone is a battery powered device and, as such could be prone to a battery failure.
* The use of a mobile phone is dependent upon the quality of the service, coverage and bandwidth provided by networks in the area in which the boat is operating and, on the condition, of the battery.

#### Other alternatives to flares

The Department also considered including Electronic Visual Distress Signals (EVDS), or “laser flares” as another alternative to the requirement to have flares on enclosed waters. These are hand-held non-pyrotechnic devices that are being offered or marketed as alternatives to pyrotechnic flares. EVDS produce a light pattern that is different to the intense burn of a conventional flare, making the operation and disposal of EVDS safer than that of a standard pyrotechnic flare, whilst the ease of carriage is an added benefit. Additional benefits include the simplicity in operating the device with a simple on/off switch, while the device is safe to use and can be operated by family members in the event of an emergency and finally there is no expiration date on the device. However a major drawback is that lights of this characteristic are not internationally approved distress signals there is a realistic chance that they may not be recognised as such and could fail to effect an appropriate response in the event of a distress situation.

## Safety management systems for pilotage service providers

There are a range of options to ensure that risks to safety in the provision of pilotage services are systematically identified, managed and controlled.

These include:

* Option 1 – Prescribe safety standards (status quo)
* Option 2 – Prescribe safety management system requirements in the Regulations
* Option 3 – Code of practice

The following sections outline what each of these options entail.

### Option 1 – Require PSPs to implement prescribed safety standards (status quo)

One option is to maintain the requirement for PSPs to implement systems and controls in relation to the management of fatigue, and impairment by drugs or alcohol. These requirements would effectively be the same requirements that currently apply to PSPs that are prescribed in the Marine Safety Regulations 2012.

This option recognises that fatigue, drugs and alcohol will have an impairing effect on a sea pilot and will impact on the pilot’s ability to safely navigate a ship. Therefore, these factors pose a significant source of risk that must be managed.

The safety standards option, as is the same in the status quo, also includes a requirement for PSPs to consult with a specified stakeholders when developing systems and controls to manage these risks. The parties that must be consulted include:

* pilots and marine safety workers (i.e. persons, who are not pilots, but may be involved with pilotage operations that could affect safety), and
* port management bodies or local port managers responsible for the port in which the pilotage services are being provider.

Overall, this option would require PSPs to implement safety systems to manage one aspect of risk, the impairment of pilots. There would be no regulatory requirement the management of other safety risks that may be present in the provision of pilotage services.

### Option 2 – Prescribe Safety Management System requirements in the regulations

Another option is to prescribe a safety management system that must be complied with in the Regulations. A safety management system is a set of documented systems and procedures that is developed by the regulated party that outlines how safety risks and hazards are managed or controlled. The Regulations would prescribe the requirements or components of the safety management system that must be included in such a system (e.g. whether specific risks must be managed). Regulations for safety management systems would not prescribe how safety risks are to be managed, as it would be up to the regulated party to determine how best to manage such risks given what is reasonable and what is practicable in their circumstances. This option would require a PSP to prepare and maintain a safety management system and comply with the measures, systems and procedures outlined in that system.

Option 2 builds on Option 1 as it includes further requirements that must be implemented by a PSP and not just the limited issues prescribed under Option 1.

The Regulations would need to specify the specific components of the safety management system that would need to be prepared. This could be done a number of different ways. For example, the Regulations could refer to a pre-existing standard, code of practice or guideline. Alternatively, safety management system requirements could be directly specified in the regulations.

Based on an analysis of safety managements systems prescribed for the purposes of other schemes, there are some common features of safety management systems (e.g. items relating to governance, risk management, emergency management, and review of the safety management system). In addition, there would also be matters prescribed that directly relate to the provision of pilotage services.

The specific requirements to be in the safety management system could include:

* governance – identifying who is responsible for the safety management system, and who will prepare and implement the system
* risk management – identifying risks to safety, undertaking an analysis and assessment of those risks, and specifying controls to manage or eliminate risks.
* emergency management – preparing an emergency management plan to mitigate, respond to and recover from emergencies that may arise in the provision of pilotage services
* pilot operations – managing fatigue and the use of alcohol and drugs, providing for the safe embarking/disembarking of pilots.
* training, qualifications, and competency of pilots
* review of systems – requiring the regular review of the safety management system.

To accompany the safety management system requirements, a PSP would also be required to keep records of the safety management system.

### Option 3 – Voluntary code of practice

As an alternative to prescribing specified regulatory requirements in relation to safety management systems or requiring the implementation of systems and procedures to manage risks, there could be a non-regulatory approach. For example, a code of practice could be developed by the regulator to outline what the government’s preferred approach to implementing systems and procedures to manage key safety risks in the provision of pilotage services. However, compliance with the code would be voluntary and PSPs would still be free to determine their own systems and procedures.

Under this option, there would be no formal regulatory requirements to prepare a safety management system. Nevertheless, other legislative requirements, such as registration with the Safety Director and compliance with the general safety duty, would still apply.

In effect, this option would rely on the actions of PSPs to appropriately identify safety risks and hazards and implement controls to eliminate or manage those risks and hazards. However, there would be a model that PSPs could draw on when developing their systems.

As discussed earlier in the document, PSPs already have some form of safety management system in place to manage safety risks. This option would rely on self-regulation by the PSP to some degree (at least in relation to the creation and adoption of a safety management system) because this type of code of practice is not mandatory.

# Options Analysis

## Methodology to assess options – Multi-criteria analysis

The methodology applied to compare potential options identified in section 5 of this RIS involves the use of multi-criteria analysis (MCA). This approach requires making judgements about how proposed options will contribute to a series of criteria that are chosen to reflect the benefits and costs associated with the proposals. The Department considered it appropriate to use MCA as a decision tool because, in many instances, the available data did not allow the costs and benefits of the specific effects of the proposal to be isolated, quantified or monetised.

In developing the RIS, some data was not available to quantify or monetise the costs and benefits of proposals. In these instances, options were compared in a qualitative manner. In some cases monetised costs have been estimated based on like activities in other jurisdictions. It should also be noted that where some quantification and/or monetised costs are included they form part of a proposal’s analysis and is combined with qualitative analysis for determining scores within the MCA framework.

The MCA involves:

* specifying a set of assessment criteria
* assigning a weighting to each criterion
* setting a criterion rating scale
* assigning raw scores for each option in relation to each criterion
* calculating a weighted score for each option.

### MCA methodology

This RIS evaluates the identified feasible options against a base case whereby the existing Regulations are allowed to sunset without being re-made.

Options are compared against assessment criteria and scored by reference to the base case to assess whether the expected outcome resulting from each option represents a positive or negative change relative to the base case. The descriptions of the impacts of the options are stated relative to the status quo.

It should also be noted that each proposal is stand-alone and there are no relationships or dependencies between options.

Options that achieve a better score than the base case, are expected to improve outcomes and contribute towards the objectives outlined in section 4 of this RIS. Where there are multiple options assessed, the preferred option is the option that achieves the highest positive score.

### Options assessment criteria

In the context of the proposed Regulations, and to achieve the aforementioned objectives identified in this RIS, the following criteria are selected as part of the options assessment strategy, with ***safety*** being the most important one:

* **Safety** – The degree to which a proposal supports and enables reductions in marine deaths, serious injury and human and infrastructure damage.
* **Cost to government** – The cost of a proposal to Government in terms of net administration costs for the provision of services.
* **Cost to community** – The cost of a proposal to the community in terms of financial and time cost to the marine community and other regulated parties.

These criteria are weighted according to their relative importance to the final outcome. To prevent biases, the Department has weighted benefit-related criteria and cost-related criteria equally. 50 percent for benefit-related criteria and 50 percent for cost-related criteria are applied, as shown in Table 6‑1 below.

On the benefits side, *Safety* was considered to be the paramount criterion and assigned the highest weighting (50 per cent).

On the costs side, *Cost to Government* and *Cost to Community*, the Department has assigned a combined weighting of 50 per cent, split equally between the two criteria. This balances the consideration of the cost of administering the proposed Regulations with the burden of compliance to be borne by the community.

Table 6‑1: Options assessment criteria and weightings

|  |  |  |
| --- | --- | --- |
| Criterion | Weighting | Definition |
| **Benefit-related** |  |  |
| Safety | 50% | The degree to which a proposal supports and enables reductions in marine deaths, serious injury and infrastructure damage. |
| **Cost-related** |  |  |
| Cost to Government | 25% | The cost of a proposal to Government in terms of net administration costs for the provision of services. |
| Cost to Community | 25% | The cost of a proposal to the community in terms of financial and time cost to VicRoads customers and other regulated parties. |
|  | **100%** |  |

### Criteria scoring

A score is assigned, depending on the impact of the option on each of the criteria measured relative to the base case. A symmetric criterion rating scale from -10 to +10 (as shown in Table 6‑2 below) is applied against each criterion listed in Table 6‑1 above. This scale range facilitates the inclusion of more information on the choices made, and results in a greater understanding of the proposal. The base case is given a zero score on all criteria.

Table 6‑2: Options assessment criteria scoring

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Type of change | Very Low | Low | Medium | High | Very High |
| Negative change | -1 | -3 | -5 | -7 | -10 |
| No change | 0 | 0 | 0 | 0 | 0 |
| Positive change | +1 | +3 | +5 | +7 | +10 |

## Marine licensing

As identified in Section 5.2, the Department will assess options in relation to the nature of knowledge and skill requirements that are necessary in order to obtain:

* A general or restricted marine licence, and
* An endorsement permitting the licence holder to operate a personal watercraft (PWC).

### Knowledge and skills requirements for general and restricted marine licences

This section provides an analytical comparison of the 3 identified viable options. These are:

* Option 1 – Knowledge test (status quo)
* Option 2 – Knowledge test and practical on-water course
* Option 3 – Knowledge test and mandatory on-water assessment

#### Option 1 – Knowledge test (status quo)

*Safety:* Relative to the base case of no regulations and no testing to obtain a licence, this option would require the applicant to pass a theory-based knowledge test based on their understanding of the Act, proposed Regulations and waterway rules. Applicants can either study the *Recreational Boating Safety Handbook 2021*, as issued by TSV, or attending a course run by an accredited training provider. This option improves safety as the applicant conducts theory-based study in order to learn about aspects of boating. These topics relate to materials that will assist the applicant to understand the basics of boating including water way rules. This knowledge will assist them to make better decisions while in charge of a vessel. The Department rates this criterion a +7.

*Cost to government:* Relative to a base case of no regulations and no test there is an increase in cost to government for this option. The primary costs arise from administering the test. This is currently delivered by VicRoads under a service level agreement with Transport Safety Victoria. While a testing regime already exists, and the establishment of the regime is a sunk cost, there are ongoing operational costs associated with the provision of testing services. Additionally, there may be costs incurred with any activity to improve or change the test. An example is where TSV decides to add in more or different questions. In this context, the Department considers that the costs to government associated with this option are low. The Department rates this criterion -3.

*Cost to community:* Relative to a base case of no regulations and no test, there is an increase in costs to community for this option. Applicants for a recreational licence would be required to pass a knowledge test. An applicant may need to spend time and resources to gain the knowledge to pass the test. This would make up the majority of the costs to recreational boaters for this option. There would be two avenues to gaining this knowledge: self-study or attending a course. In the case of self-study, the person would download a copy of the handbook and read and learn the information contained in that handbook. That person would sit the test at a VicRoads site and pay a fee of $29.30 for sitting the knowledge test to obtain a licence. Alternatively, a person seeking a licence could complete an online course or attend an in-person course to gain the knowledge required to complete the test. The Department observes that market rates for such courses are in the range of $130[[19]](#footnote-20). On the assumption that all new applicants for licences complete a course before taking the test[[20]](#footnote-21), then the costs of this option for the community are in the range of $3.4 million each year[[21]](#footnote-22). ). The Department scores this criterion -3 relative to the base case.

#### Option 2 – Knowledge test and practical on-water course

*Safety:* This option requires persons to complete a knowledge test (in accordance with the same requirements as Option 1) but also complete an on-water practical course. This type of course would provide new boaters with practical experience of handling a recreational vessel and demonstrate to a licensing authority that the person has a minimum level of experience in handling a vessel. The Department has conducted a preliminary analysis comparing fatality and serious injury data across jurisdictions with different licensing requirements. This analysis is presented in Appendix A. The Department’s view is that there is limited evidence to suggest that a practical component to obtaining a marine licence results in improved safety outcomes. Nevertheless, the Department acknowledges that there may be intangible benefits associated with this option. For example, a new recreational boater may pick up on tips and tricks from an experienced vessel master. This may lead to minor improvements in safety outcomes. For these reasons, the Department rates this criterion a +8 relative to the base case.

*Cost to government:* Under this option, a practical on-water course would be delivered by authorised third-party providers. This means that the government would not directly incur costs in delivering practical on-water courses. However, the government would incur costs in implementing a regime of oversight of authorised third-party providers. This would include developing processes to authorise or accredit third-party providers and auditing those providers. The requirements of the course (i.e. what information or training should be provided to attendees of the course) would need to be developed and documented. TSV would need to develop these materials. The Department has not estimated these costs at this time, but TSV would need to establish ICT systems, and business practices administer oversight of the course regime. The costs incurred by government under Option 1 would also be incurred under this option (as there would also be a knowledge test required). The Department rates this criterion a -7 relative to the base case.

*Cost to community:* Applicants for a marine licence will incur costs to comply with the requirements of the application. An applicant will need to complete the practical on-water course in addition to the current knowledge test. The costs incurred under Option 1 would also be incurred under Option 2. In addition to these costs, applicants for a licence would also need to pay the financial cost of the on-water course. An estimate of the course cost is approximately $300 to $400, based on market rates for course in New South Wales (which offer similar courses). Based on the average number of new applicants for licences in Victoria per year, the Department would expect that the financial cost of complying with this option would be in the range of $7.8 to 10.4 million. Applicants will also spend time to travel to the venue of the course and to complete the course. The Department also notes that the authorised course providers would also incur costs in setting up the course and incur ongoing operational costs, which would be recovered through the course fee. The Department rates this criterion a -7 relative to the base case.

#### Option 3 – Knowledge test and mandatory on-water assessment

*Safety:* This option would require applicants for a marine licence to pass a knowledge test and also pass a practical on-water assessment. Whilst the course considered under Option 2 would provide new boaters with practical experience of handling a recreational vessel, this option would enable an applicant to demonstrate that the person has attained certain skills in handling a vessel and can perform or repeat those skills (e.g. starting a motor safely, performing manoeuvres with the vessel, or berthing and securing a vessel).

The Department has conducted a preliminary analysis comparing fatality and serious injury data across jurisdictions with different licensing requirements in order to assess whether alternative licensing schemes lead to improved safety outcomes (see Appendix A). The Department’s view is that there is limited evidence to suggest that passing a mandatory practical test results in improved safety outcomes. As per Option 2, the Department expects that there may be minor or intangible safety benefits associated with requiring an applicant for a marine licence to demonstrate skills in handling a recreational vessel. For these reasons, the Department rates this criterion a +8 relative to the base case.

*Cost to government:* In order to implement this option, the Department considers that the marine safety regulator would establish a scheme of authorised or accredited third-party providers to administer the mandatory test. The costs incurred by government would be similar to those described in Option 2. That is, the regulator would need to develop processes to authorise or accredit third-party providers and to audit those providers. The Department rates this criterion -7 relative to the base case.

*Cost to community:* Similar to Option 2, under this option, applicants seeking to obtain their licence will incur costs in complying with the requirements of the marine licence. Applicants will need to pass a practical on-water test and they will do this through a third-party provider. They will pay fees to take the practical on-water assessment. In practice, the Department would expect that third-party providers would also offer new recreational boaters a course before the applicant undertakes the practical test, so the financial cost of complying with this option would be similar to Option 2 (i.e. in the range of $7.8 to 10.4 million). In addition to the time spent by the applicant in Option 2, the applicant would also require approximately 1 hour to complete the on-water practical test. Given that the costs to the community are similar to those incurred under Option 2, the Department rates this criterion -7 relative to the base case.

#### Preferred option

The preferred option as per the MCA is Option 1 (status quo). The Department intends to implement the Option 1 as it scores well on safety while minimising costs to government and community relative to Options 2 and 3. Options 2 and 3 come at relatively higher costs than the preferred option. This is because of the high costs associated with establishing and operating on-water practical courses and testing regimes, particularly as they do not exist and will need to be established from a zero base.

Table 6‑3: Multi-criteria analysis for marine licensing

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Criterion | Weight | Option 1 | | Option 2 | | Option 3 | |
| **Knowledge test (status quo)** | | **Knowledge test and practical on-water course** | | **Knowledge test and mandatory on-water assessment** | |
| **Raw Score** | **W’ted Score** | **Raw Score** | **W’ted Score** | **Raw Score** | **W’ted Score** |
| Safety | 50% | 7 | 3.5 | 8 | 4 | 8 | 4 |
| Cost to Government | 25% | -3 | -0.75 | -7 | -1.75 | -7 | -1.75 |
| Cost to Community | 25% | -3 | -0.75 | -7 | -1.75 | -7 | -1.75 |
| **Total** | **100%** |  | **2.00** |  | **0. 5** |  | **0.5** |

### Endorsements (PWC)

This section provides an analytical comparison of the 2 identified viable options. These are:

* Option 1 – PWC endorsement with a knowledge test (status quo)
* Option 2 – PWC endorsement with knowledge test and a mandatory on-water assessment

The Department notes that these options are assessed and scoredrelative to a base case where an applicant has already obtained a marine licence and in doing so has passed a multiple-choice knowledge test based on the *Licensing Safety Handbook 2020*, as issued by TSV

#### Option 1 – PWC endorsement with a knowledge test (status quo)

*Safety:* Under this option, holders of marine licences, will be required to pass an additional test specifically relating to PWCs. They must achieve a pass mark of 87 per cent from a 15-question multiple-choice test. As the applicant may already have a marine licence, they may have some practical marine experience at the time of sitting the PWC endorsement test. Alternatively, a person may seek to apply for a marine licence and a PWC endorsement at the same time. The test would confirm understanding of key matters relating to the operation of a PWC (such as operating near swimmers, handling of PWCs etc) as there are safety risks and hazards that are unique to PWCs which are not present for conventional powered recreational vessels. Therefore, safety outcomes are improved under Option 1 relative to the base case, as PWC operators are expected to have knowledge of those PWC-specific issues and the Department would expect those operators would take steps to improve their own safety when using those vessels. The Department rates this criterion +7 relative to the base case.

*Cost to government:* Relative to the base case, the primary costs are the costs incurred from administering the test. This is currently delivered by VicRoads under a service level agreement with Transport Safety Victoria. As these processes, business practice and ICT systems are already in place, these are sunk costs. Additionally, there may be costs incurred with any activity to improving or change the test. An example is where TSV decides to add in more or different questions. In this context, the Department considers that the costs to government associated with this option are low. The Department rates this criterion -3 relative to the base case.

*Cost to community:* Relative to the base case applicants seeking to obtain their PWC endorsement will incur costs to obtain a PWC endorsement. Applicants for an endorsement would be required to pass a knowledge test. An applicant may need to spend time and resources to gain the knowledge to pass the test which would make up the majority of the costs for this option. As per the corresponding analysis for the costs of obtaining a marine licence. There would be two avenues to gaining this knowledge: self-study or attending a course. In the case of self-study, the person would download a copy of the handbook and read and learn the information contained in that handbook. That person would sit the test at a VicRoads site and pay a fee of $29.30 for sitting the knowledge test to obtain the endorsement. Alternatively, a person seeking a licence could complete an online course or attend an in-person course to gain the knowledge required to complete the test. The Department observes that market rates for such courses are in the range of $90 to $100. As there are approximately 16,000 applicants for endorsements each year, the costs total $1.5 million to $1.6 million. The Department rates this criterion -1 relative to the base case.

#### Option 2 – PWC endorsement with knowledge test and a mandatory on-water assessment

*Safety:* Relative to the status quo, this option would require persons to demonstrate their skills in operating a PWC via a mandatory on-water practical assessment of approximately 1 hour. This option would enable an applicant to demonstrate that the person has attained certain skills in handling a PWC and can perform or repeat those skills (e.g. performing manoeuvres with the vessel). The Department would expect that the acquisition and the execution of these skills in a test environment would improve safety outcomes through lower rates of incidents (e.g. a lower number of collision with other vessels or with swimmers). As per the analysis provided in Appendix A, the Department observes that there does not appear to be strong evidence that such measures lead to significantly improved safety outcomes compared to what is proposed under Option 1. For these reasons, the Department rates this criterion a +8 relative to the base case.

*Cost to government:* Under this option, a practical on-water test would be delivered by authorised third-party providers. This means that the government would not directly incur costs in delivering practical on-water assessments. However, the government would incur costs in implementing a regime of oversight of authorised third-party assessors. This would include developing processes to authorise or accredit third-party providers and auditing those providers. TSV would need to develop the requirements of the test. The Department has not estimated these costs at this time, but TSV would need to establish ICT systems, and business practices, and administer oversight of the testing. The Department rates this criterion a -8 relative to the base case.

*Cost to community:* Applicants seeking to obtain a PWC endorsement will incur costs in complying with the requirements to obtain the endorsement. They will need to complete the on-water practical assessment in addition to the current knowledge test (estimated to cost $1.5 million to $1.6 million as per the analysis under Option 1). The primary cost of completing the on-water assessment is the financial costs associated with the authorised third-party tester. An estimate of the assessment cost is approximately $250 based on market rates in other jurisdictions such as Western Australia[[22]](#footnote-23). These costs would total approximately $4 million. The Department rates this criterion a -3 relative to the base case.

#### Preferred option

The preferred option as per the MCA is Option 1 (status quo). The Department intends to implement the status quo as it scores well on safety while minimising costs to government and community relative to Option 2. Option 2 comes at much higher costs than the preferred option without a significant increase in safety outcomes. The basis of the cost difference is due to the high costs associated with establishing and operating an on-water practical assessment regime, particularly as they do not exist and will need to be established from a zero base. Option 2 also provides only a marginal improvement to safety outcomes.

Table 6‑4: Multi-criteria analysis for endorsements (PWCs)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criterion | Weight | Option 1 | | Option 2 | |
| **PWC endorsement with a knowledge test (status quo)** | | **PWC endorsement with knowledge test and a mandatory on-water assessment** | |
| **Raw Score** | **W’ted Score** | **Raw Score** | **W’ted Score** |
| Safety | 50% | 7 | 3.5 | 8 | 4 |
| Cost to Government | 25% | -3 | -0.75 | -8 | -2 |
| Cost to Community | 25% | -1 | -0.25 | -3 | -0.75 |
| **Total** | **100%** |  | **2.50** |  | **1.25** |

## Vessel standards and safety

This section provides an analytical comparison of the base case of no regulations to the 3 identified viable options. These are:

* Option 1 – ‘Fit for purpose' vessel requirements – registration conditions (status quo)
* Option 2 – Prescribe standards for recreational vessels
* Option 3 – ‘Seaworthiness’ inspections of vessels

### Option 1 – ‘Fit for purpose’ vessel requirements (status quo)

This option requires vessel owners to ensure their vessel is fit for purpose as per a list contained within the Regulations that outline a combination of conditions and performance standards that the vessel must meet in order to be deemed fit for purpose (i.e. recreational boating). The measures within the list relate to major systems and items on board a recreational vessel that must be operable to enable a vessel to function properly.

*Safety:* Relative to the base case the proposed reforms will require vessel masters to ensure the vessel complies with the conditions, effectively that the major systems of the vessel and onboard items are operable. This provides greater certainty that the vessel will not sink and if there is an incident the risk of fatalities and serious injury are minimised. Having such conditions outlined in the Regulations provides vessel owners with a checklist for understanding what is fit for purpose and therefore reduces the risk of critical items being missed during checks. It also ensures that the focus of any checks and repairs relate to the key systems and onboard items. The additional safety offered from the navigation lights relates to improved visibility in certain conditions. The Department scores this criterion +7.

*Cost to government:* Relative to the base case, Victoria Police or TSV officers would undertake random checks on vessels to determine whether the vessel is fit for purpose. Since the conditions largely reflect the status quo, TSV or Victoria Police will not be required to increase its workforce or undertake significant new training (other than in relation to the proposed new condition in relation to navigation lights). Based on TSV data from 2015 to 2021, there were a total of 7,949 on-water inspections, equivalent to an average of 1,135 inspections per year. There is no available data on the amount of time taken per inspection, given each inspection would be unique to the circumstances of the vessel, so a monetary cost is unable to be determined. The Department scores this option for this criterion, -1.

*Cost to community:* Relative to the base case vessel owners will, dependant on the condition of the vessel, potentially need to undertake repair and maintenance work to ensure systems and onboard items are operable to ensure the vessel is fit for purpose. The Department assumes that this will not impose significant cost on vessel owners as they may ordinarily undertake such works to ensure their safety. Additionally, the proposed regulations will provide an incentive to undertake maintenance and repair works, to avoid being randomly checked by police and having their vessel deregistered due to non-compliance. The works required and associated costs would vary on a per vessel basis. For this reason, this criterion is scored a -4.

### Option 2 – Prescribe standards for recreational vessels

*Safety:* Relative to the status quo (i.e. Option 1) this option would require vessels to be built to a mandated standard. This standard relates to the design, construction and performance testing of a vessel. This standard applies to the industry at a national level and it is updated for time to time. Adherence to the standard will produce vessels that are safer than boats where the standard has not been utilised.

Relative to the base case this option produces increased safety outcomes as vessels comply with a nationally approved standard. However, it should be noted that the introduction of such a regulatory regime would mean the safety benefits would only apply to newly built vessels. Existing vessels that do not conform with the standard would still be permitted on waterways. Prescribed standards would codify in regulation what is required for a vessel to be safe, thereby directly and explicitly addressing risks to safety and ensuring that the risks of fatalities or serious injuries, along with other safety incidents, are minimised to the extent possible under regulations. Reflecting the better safety outcomes (relative to the status quo) associated with this option, the Department score this option +8 against this criterion.

*Cost to government:* Relative to the base case government will need to administer the standard including monitoring and enforcement. Enforcement activities would include random checks of newly built vessels against the standard. There may need to be some training of officers to understand the new requirements and be able to assess whether a vessel complies with the new standard. Accordingly, this option is scored -3 against this criterion.

*Cost to community:* Relative to the base case where there are no regulatory requirements or standards that are enforceable, the community may arguably pay a higher price for vessels as the costs of adhering to the standards may be passed onto consumers. As the standard is updated industry must recalibrate its design, construction and testing systems to ensure compliance. For this reason, this criterion is scored -5.

### Option 3 – ‘Seaworthiness’ inspections of vessels

*Safety:* Relative to the base case, this option would require the imposition of a standard for recreational vessels and that those vessels are inspected against this prescribed standard (AS 1799). A seaworthiness inspection involves inspecting and assessing a vessel for key safety performance characteristics that are prescribed in the standard (e.g. buoyancy, flotation, stability etc). The inspection of vessels would increase safety where defects are discovered and rectified before an incident occurs. The efficacy of this option would depend on how frequently vessels are inspected.

For the purposes of this RIS, it is assumed that an inspection would occur upon transfer of registration (similar to the roadworthy scheme for private motor vehicles). Based on historical volumes for vessel transfer transactions, this would mean about 15,600 would be inspected for seaworthiness per year. This represents about 7 per cent of the total fleet (based on the stock level of vessels of 201,532 vessels registered as of 31 June 2021).

There will be cases where some vessels are not transferred, and therefore not inspected. Some vessels potentially will never be inspected over its life because they are never transferred or sold to another person. Indeed, this scheme may motivate a vessel owner to avoid transferring a vessel because the owner hasn’t undertaken the required maintenance. However, this would be difficult to avoid if the vessel is sold to another person. The safety benefits of this option is dependent on the number of vessels that are transferred and how often they are transferred. Nevertheless, Safety would increase, relative to the base case, by the number of vessels that are inspected and found to be unseaworthy that may have otherwise potentially been involved in an incident had it not been inspected and found to be deficient against the standard. In comparison to the other options, Option 3 minimises the risk of a vessel being allowed to deteriorate over time because of the requirement to ensure inspections must occur (i.e. upon transfer). By comparison, under Option 2, for example, while the vessel must be built to the same standard that the vessel is inspected against, it does not ensure the vessel remains at that safe standard over the life of the vessel. For this reason, Option 3 is expected to improve safety outcomes the most, and, therefore, the Department scores this option +8.5.

*Cost to government:* Relative to the base case, government needs to inspect vessels utilising appropriately qualified and authorised people. These persons may need to be accredited. These vessels will be inspected according to the prescribed standards. The government would need to establish and administer the scheme including auditing inspection activities and results. The ultimate cost of inspections is dependent on its frequency (e.g. annual, upon transfer etc.). The Department scores this option -5 against this criterion.

*Cost to community:*  This option requires that community have their vessels undergo inspections which will cost time. It is expected that the inspections will take approximately 2 hours. This time required for inspections would vary dependant on a number of variables including the age, size and condition of the vessel. Based on a desktop analysis of the costs charges by private companies to conduct pre-purchase vessel inspections, the Department estimates the financial cost of an inspection ranges from $400 to over $1,000. The range in costs is due to the different fees charged depending on the size of the vessel, with smaller vessels costing less to be inspected than larger vessels. Other factors, such as whether the engine is single- or twin-inboard or -outboard, also influence inspections costs. Where the vessel is found to be deficient against the standard the owner will be required to undertake repairs and maintenance works including time and materials. The Department scores this option -6.

### Conclusion

The Department has assessed that Option 1 is the preferred option with that option scoring highest. The Department notes that, while the other options are likely to result in better safety outcomes, there would be additional costs in adopting those options.

Table 6‑5: Multi-criteria analysis for vessel safety and standards

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Criterion | Weight | Option 1 | | Option 2 | | Option 3 | |
| **Status quo (plus navigation lights)** | | **Prescribe standards for recreational vessels** | | **‘Seaworthiness’ inspections of vessels** | |
| **Raw Score** | **W’ted Score** | **Raw Score** | **W’ted Score** | **Raw Score** | **W’ted Score** |
| Safety | 50% | 7 | 3.5 | 8 | 4 | 8.5 | 4.25 |
| Cost to Government | 25% | -1 | -0.25 | -3 | -0.75 | -5 | -1.25 |
| Cost to Community | 25% | -4 | -1.0 | -5 | -1.25 | -6 | -1.5 |
| **Total** | **100%** |  | **2.25** |  | **2** |  | **1.05** |

## Vessel identification

This section provides an analytical comparison of the base case of no regulations to the 3 identified viable options. These are:

* Option 1 – Supply HINs on registration of the vessel if known (status quo)
* Option 2 – Verification of HINs
* Option 3 – Retrospective application of HINs to older vessels

The function of registration is to collect data on owners and vessels so it can be used for the purposes of reducing crime, improved law enforcement and administrative tasks associated with the registration and licensing regime. As these options are not intended to directly improve safety, the Department has used different benefit criterion for the assessment of this option. The Department has replaced the “safety” criterion with “crime reduction and improved law enforcement”. For the purposes of this analysis, crime reduction and improved law enforcement refers to benefits associated with the reduction in stolen and rebirthed vessels.

### Option 1 – Supply HINs on registration of the vessel if known (status quo)

This option requires vessel owners to provide information relating to the HIN at registration, but only when the vessel already has an existing HIN affixed to that vessel. HINs would not be verified under this option. This option would ensure existing and newer vessel information is contained within the registration database. Registration history of a vessel would also be able to be tracked.

*Crime reduction and improved law enforcement:* Relative to the base case this option will assist to reduce crime and improve law enforcement as the Department and law enforcement agencies will have data and information relating to vessels and owners in the event of crime or a boating incident. The issue with the HIN data in this option is that it is not verified and so errors in the data or deliberate misinformation provided by owners will not be readily detectable. This element of the option somewhat limits crime reduction and law enforcement. This will moderate the benefits of this option. The Department scores this option +6 against this criterion.

*Cost to government:* Relative to the base case, TSV and VicRoads would need to establish a database and registration process that enables the capture of HINs. They would then need to make this data and information available to authorised officers and the Police. In the event of crime or an incident Victoria Police would then be able to search the database as required and verify information. Since these processes are already in place under the status quo, in practice, these costs have already been incurred. While the Department is unable to provide an estimate of these costs at this time, it is expected that the costs that can reasonably be directly attributable to capturing a vessel’s HIN will be minor (relative to the broader costs of registration). The Department scores this option -1.

*Cost to community:* This option requires vessel owners to obtain details of the HIN and provide it at the time of registration. Relative to the base case where HINs are not required to be provided, the Department does not expect that the costs of providing this information to be significant. On average, there are approximately 13,226 new vessel registrations per year where a HIN is provided by the vessel owner. Further, a range of information is required to be provided on registration and this option would require the owner of the vessel to provide the number that is affixed to the vessel. The Department score this option -3 against this criterion, reflecting the level of effort required to provide this information as part of the application process.

### Option 2 – Verification of HINs

*Crime reduction and improved law enforcement:* This option would require vessel owners to have their HINs verified at the time of registration. The verification process would involve the vessel owner taking the vessel to and from the location of an agent accredited to verify the HIN. The accredited agent would verify the HIN by ensuring that the HIN meets the requirements for the ISO 10087 standard. The Department expects that a system of verification of HINs would lead to improved outcomes in relation to crime reduction and improved law enforcement The integrity of the registration database would be improved and the HIN information would be more accurate as data entry and input errors would be reduced. Regulators and law enforcement agencies can act with certainty as to the details associated with the vessel. This may enable them to act more quickly in terms of solving crime in addition to the provisions of fines and penalties associated with enforcement activity. It is envisaged that this option will greatly impact on the incidence of vessel rebirthing. For this reason, the Department scores this option +8 against this criterion.

*Cost to government:* Relative to the base case, TSV and VicRoads would need to establish a database and registration process that enables the verification of HINs. HINs would be verified by authorised third parties, as is the case in other jurisdictions. Oversight of these third parties is needed and a scheme to authorise and regulate third parties is needed. The Department has not estimated these costs at this time; however, the Department expects that these costs would be moderate. Further, legislative amendments may be needed to implement such a scheme. Accordingly, the Department scores this option -5 against this criterion.

*Cost to community:*  Under this option, vessel owners will need to have their HINs verified. This will cost the community extra time relative to the base case where HINs and their verification is not required for vessel registration. This time is required for information collation by the owner and presenting at VicRoads for registration purposes. In the event that government verifies the HINs, the Department estimates that approximately 1 hour of additional time is needed for the registration process. Alternatively if HINs are verified by third parties the community will need to expend the time and money (HIN verification fee) required for that process before attending VicRoads for registration. The Department estimates this cost at approximately $74. This is based on the average maximum fees that may be charge by a Boat Code agent in New South Wales[[23]](#footnote-24), Western Australia[[24]](#footnote-25), and South Australia. In terms of the volume of forecast vessels that would present with HINs, based on information from TSV, VicRoads data indicates that 58 per cent of vessels have a HIN affixed (113,222 HINs recorded for a total fleet of 196,382 vessels in 2016-17). In terms of the volume of vessels that owners would present for registration, based on the 10-year average from 2011-12 to 2020-21 for new registrations, there is an average of 13,226 initial registrations per year. Based on the estimated proportion that have a HIN properly affixed to the vessel, it is assumed that 8,068 (61 per cent of 13,226 initial registrations) will need a new HIN affixed and 5,158 (39 per cent of 13,226 initial registrations) will only need a HIN verified. Having regards to this information, the Department score this criterion -5 for this option.

### Option 3 – Retrospective application of HINs to older vessels

*Crime reduction and improved law enforcement:* Relative to the status quo this option would require vessel owners to have their HINs verified at the time of registration, however this would be retrospective applied so that all vessels require a HIN and verification.

Relative to the base case of no registration, HIN provision or HIN verification under this option further produces increased crime reduction and improved law enforcement outcomes relative to the base case and options 1 and 2. The integrity of the registration database is further improved as it will gradually be updated to contain HIN data for vessels in Victoria as they are registered. The Department scores this option 9.

*Cost to government:* Government costs are similar to Option 2 however the additional costs relate to the fact that the volumes of transactions increase and this option requires all vessels to have a HIN affixed and verified when registration is transferred to another person. The Department estimates there are approximately 15,601 transfers of registration per year based on the average number of transfers between 2011-12 and 2020-21. Based on the assumptions that 61 per cent of vessels will need a new HIN and 39 per cent will only need a HIN verified, 9,517 will need a new HIN affixed and 6,084 will only need a HIN verified.

The total costs associated with this option will decline progressively over time as the proportion of vessels being transferred that already have HINs increases. This proportion increases because of the retrospective fitting of HINs as ownership of the fleet changes hands over time and because virtually all of new registrations (except for a small proportion of vessel newly registered that are imported as second-hand from interstate) will already have HINs. However, note that the size of the fleet is assumed to increase in size over time consistent with past trends. The Department estimates that about 122,935 vessels will need a new HIN affixed and 78,597 will need the HIN verified. The volume of work, and therefore cost to government, will vary depending on whether HIN verification is undertaken by government or a third party. As noted for Option 2, legislative amendments may be needed to implement an authorisation scheme for HIN verifiers. The Department scores this option -7.

*Cost to community:* Relative to the base case vessel owners will need to obtain details relative to the HIN, have it verified and provide it at the time of registration. The key difference in cost to the community relative to Option 1 (status quo) and Option 2 is that owners of vessels without an existing HIN will need to obtain one before their vessel can be transferred to another person. The cost for a HIN to be assigned and a plate fitted to a vessel is approximately $100. This is based on the average maximum fees that may be charge by a Boat Code agent in New South Wales[[25]](#footnote-26), Western Australia[[26]](#footnote-27), and South Australia[[27]](#footnote-28). Since the Department estimates 15,601 transfers of registration per year, the financial cost of this option is approximately $1.5m. The Department scores this option -7.

### Conclusion

The result of the MCA is that the preferred option is Option 1 (status quo). While Option 2 would likely do more to reduce crime and assist with law enforcement it would come at a higher cost to government and the community. Option 3 would come at an even higher cost with little incremental benefit. There are two additional reasons why the Department prefers Option 1 over Option 2. At present there is national consideration of matters to do with the development and implementation of a national database with shared permissions across jurisdictions. Additionally, there is much work required to establish the mechanisms for the verification requirement for HINs. This may require a legislative amendment to establish and administer an accreditation regime.

Table 6‑6: Multi-criteria analysis for vessel identification

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Criterion | Weight | Option 1 | | Option 2 | | Option 3 | |
| **Supply HINs on registration of the vessel if known (status quo)** | | **Verification of HINs** | | **Retrospective application of HINs to older vessels** | |
| **Raw Score** | **W’ted Score** | **Raw Score** | **W’ted Score** | **Raw Score** | **W’ted Score** |
| Crime reduction and improved law | 50% | 6 | 3 | 8 | 4 | 9 | 4.5 |
| Cost to Government | 25% | -1 | -0.25 | -5 | -1.25 | -7 | -1.75 |
| Cost to Community | 25% | -3 | -0.75 | -5 | -1.0 | -7 | -1.75 |
| **Total** | **100%** |  | **2** |  | **1.75** |  | **1.00** |

## Safety equipment

This section provides an analytical comparison of the base case of no regulations to an option identified relating to the suite of safety equipment required to be kept on recreational vessels with some improvements.

### Option 1 – Status quo safety equipment requirements with improvements

*Safety*: The suite of safety equipment (e.g. lifejackets, anchors, bilge pumping systems, bailers, compass, buckets, flares, oars, a torch is required on a powered vessel up to 4.8 metres in length and operating in coastal waters more than 2 nautical miles from the coast) is intended to specifically improve safety by enabling vessel masters to either raise an alarm if an incident were to occur or protect vessel occupants by reducing the consequences of an incident.

The safety equipment requirements under this option vary depending on the type of vessel that is being operated and the location it is being operated. The Department’s assessment is that the current safety equipment requirements improve the safety of recreational boating participants. This is achieved by enabling boaters to recover from an incident or call for help if it is needed. The benefits of safety equipment can be significant, for example, a lifejacket can prevent a person who has unexpectedly fallen into the water from drowning. Additionally, communications equipment can raise the alarm and alert search and rescue agencies to locate the vessel and who is onboard it.

The Department expects that the full suite of equipment may not be carried on a vessel in all cases, or that equipment such as lifejackets would not be worn by all recreational boaters at times of heightened risk. The regulations under this option would improve rates of carriage of equipment and the use of this equipment.

Under this option there is also an incremental improvement made to the types of safety equipment required. These are:

* PFDs: Relative to the base case the proposed reforms will require vessel masters to carry on board and wear a PFD. This is an effective means of addressing the risks associated with recreational boating as this regulatory requirement significantly increase the use of PFDs relative to the base case. Based on data available to the Department in relation to infringement fines, enforcement activity and incident and fatality reports, the Department assumes that there is good compliance with current regulatory requirements in relation to carriage and wearing of lifejackets (in excess of 90 per cent compliance). PFDs are effective to:
  + Save persons from drowning, making them more visible during rescue and better enable a person wearing a PFD to assist others in the water.
  + Keep persons in the water warm and assist in preventing person from dying from hypothermia. The design and buoyancy of the PFD turns the person so that their face is not in the water which helps prevent drowning.
* Increasing the age of compulsory PFD wearing for children up to 12 years of age not only increases the number of children who are safer on recreational vessels but also brings Victoria into line with other jurisdictions throughout Australia. Children are considered to be at greater risk of drowning if they enter the water unexpectedly.
* The phasing out of all non-Australian standards would ensure that importers, retailers and recreational vessel owners only supply PFDs that are built to the Standard AS 4758. The slight performance improvements, such as the addition of crotch straps or thigh restraints, which will ensure that PFDs will stay more secure. Explicitly requiring boaters to wear the PFD as designed and in accordance with the manufacturer’s instructions will ensure increased safety outcomes through proper use.
* Radios: Relative to the base case the proposed regulations require vessel masters to carry communications equipment for the purposes raising an alarm in case of emergency and providing the ability to communicate with rescuers. Currently boaters can use 27MHz radio. Mandating vessel owners to install a VHF marine radio provide 24/7 distress monitoring and weather forecasts and safety alerts available out to 20NM off the Victorian coastline.
* Flares: Relative to the base case the proposed regulations require vessels to carry flares or other devices such as EPIRBs. If a vessel is stranded at sea or needs attention, this type of safety equipment assists in emergency service agencies locating the vessel and attending to injured parties. The proposed regulations offers recreational vessel owners the choice of device to perform such functions. These alternate devices mitigate risks associated with the carriage, use and disposal of flares.

Accordingly, the Department scores this criterion +8.

*Cost to government:* There areno direct costs to government arising out of this option, as the government or the regulator would not need to implement systems in relation to safety equipment. The cost burden primarily falls on recreational boaters (as discussed in the next criterion).  There are, however, indirect costs incurred through compliance monitoring and enforcement of these requirements. Enforcement agencies such as Victoria Police and TSV would have the option to undertake enforce and monitoring activities (i.e. confirming whether recreational vessels have the correct safety equipment for their vessel type and operating location) relative to their existing duties for other legislative and regulatory requirements. However, this activity would be done within existing budgets for those organisations. There would be no increase in budget or resources arising out of the implementation of this option. Additionally, the Department does not expect that additional costs would be incurred in respect of the incremental improvements to safety equipment regulations proposed under this option. As such, the scoring represents the incremental amount of monitoring and enforcement relative to all other existing like activity. This criterion for Option 1 is scored -1.

*Cost to community:* Safety equipment are not without costs. The owners of recreational vessels will need to purchase the equipment necessary for operation depending on the type of vessels and the area of intended operation. Accordingly, the exact costs of equipment will vary. For example, in the case of a powered vessel up to 4.8 metres in length operating on coastal waters, the set of equipment may cost approximately $1400 to $1500. The equipment costs will be lower for the same vessel operating on enclosed waters reflecting to lower risks to safety operating in that environment. Since a driver of costs is the operating location of a vessel and the Department does not have accurate information about such boating preferences, the Department is not in a position to estimate the total cost of equipment in relation to this option.

The Department also makes the following observations:

* Costs associated with the proposals in relation to lifejackets will impact on two major categories of stakeholders, the businesses (importers and retailers) and recreational boaters.
* The proposal will potentially impose a requirement on owners and operators of recreational vessels to replace their existing PFDs with new PFDs that are of the AS 4758 standard. The extent of the costs and when they are incurred would depend on what grandfathering arrangements are put in place (i.e. the longer period that boaters can use non-AS 4758 compliant jackets, then the costs of replacing lifejackets are put off to the future). The Department is seeking the public’s feedback on what these arrangements should be having regard to both safety and the cost to recreational boaters.
* Importers and retailers would have to ensure that lifejackets that do not conform to AS 4758 standards are removed are no longer being sold and available to the public. The Department does not expect that these costs would be significant.
* It is expected that the average price for a replacement PFD for an adult ranges from $150 – $250 and for children $100 - $150.
* The cost of an EPIRB, while upfront is more expensive than the purchase of flares, over the lifespan of the safety equipment, the two items end up on par with each other in terms of cost.
* In the case of marine radios, there are also costs associated with being licensed to operate a VHF radio. Courses to obtain this licence are in the range of $100 to $150.

Noting that there may be significant compliance costs under this option depending on the type of vessel and where it is operated, the Department scores this option -6.

### Preferred option

Based on the outcomes of the MCA, Option 1 is preferred to having no regulations. The Department considers that there continues to be a need to require safety equipment and that the improvement to the range of safety equipment will improve safety outcomes.

Table 6‑7: Multi-criteria analysis for safety equipment

|  |  |  |  |
| --- | --- | --- | --- |
| Criterion | Weight | Option 1 | |
| **Status quo** | |
| **Raw Score** | **W’ted Score** |
| Safety | 50% | 9 | 4.5 |
| Cost to Government | 25% | -1 | -0.25 |
| Cost to Community | 25% | -6 | -1.25 |
| **Total** | **100%** |  | **3.00** |

## Pilotage service providers

The Department has identified three options in relation to regulatory requirements for PSPs. These are to:

* Option 1 – Prescribe safety standards (status quo)
* Option 2 – Prescribe a safety management system
* Option 3 – Code of practice

### Option 1 – Prescribe safety standards (status quo)

*Safety:* This option requires pilotage service providers to comply with prescribed safety standards. Only some safety risks, relevant to the provision of pilotage services, would be actively considered and managed as the safety standards prescribed only relate to a small set of risks (i.e. those in relation to drugs, alcohol and fatigue). In comparison to the base case, where these requirements are not explicitly required to be addressed, the Department expects that there would be an improvement in safety in the delivery of pilotage services. In particular, the impairment of pilots, whether it is due to drugs, alcohol or fatigue, would reduce any incidents involving large ships, where the pilot has the conduct of that ship.

The Department also notes that the safety benefits of this option, relative to the base case, are more likely to affect new entrants.

As this option would only address some of the known safety risks and hazards relating to the provision of pilotage services and PSPs would likely have impairment policies in the base case, the Department considers that this option will have a low to moderate impact on safety and scores this option +4.

*Cost to government:* TSV would not incur any direct costs as a result of the implementation of this option as it involves continuing the current Regulations. There are no direct implementation activities required. The Department notes that there would be some ongoing operational costs incurred in relation to compliance monitoring and enforcement of these requirements. TSV would have the option to undertake enforce and monitoring activities (i.e. confirming whether pilotage service providers have implemented any systems and procedures to comply with the prescribed safety standards) relative to their existing duties for other legislative and regulatory requirements. However, this activity would be done within existing budgets and there is already a team and resources in place to regulate the PSP sector. This criterion is scored 0.

*Cost to community:* The primary costs of this option are the compliance costs associated with implementing systems and procedures to comply with the prescribed safety standards. In comparison to the base case, where there are no such regulatory requirements, any new PSPs would need to develop measures to ensure that PSPs are not impaired by drugs, alcohol or not fatigued. This could involve developing an organisational policy or require the implementation of more rigorous controls such as impairment testing. The Department understands that existing PSPs already have these systems in place. Therefore, the Department does not expect that there would be significant costs to implement these systems and comply with these requirements. This option is scored -2 against this criterion.

### Option 2 – Prescribe a Safety Management System

*Safety:* Option 2 requires the preparation of a safety management system. Effectively, this means that PSPs will need to consider a range of risks and hazards that may arise in the provision of the pilotage services. The management of these risks would be documented, and active steps taken to eliminate those risks or hazards or manage them. The safety management system would complement existing obligations under the general safety duty. Since this is a best practice model of ensuring that risks are appropriately considered and managed, the Department considers that this option would lead to the best safety outcomes, in comparison to the other options and the base case. The reason is that all safety risks and hazards would need to be actively assessed and strategies developed to eliminate those risks or manage them. In comparison to the base case, these systems and procedures would not be developed or be documented or, if they were developed or documented, the quality of those systems would not be developed to the same degree. Also, in comparison to Option 1, a wider range of safety risks and hazards would be considered and addressed.

This option would also support the efficient and effective compliance monitoring and enforcement effort by the regulator. PSPs would have systems and processes documented and available for scrutiny and audit.

For these reasons, the Department scores this option +8 for this criterion.

*Cost to government:* TSV would not incur any direct costs as a result of implementation of this option other than some minor costs arising from communicating this new requirement to PSPs. However, there would be some ongoing operational costs incurred in relation to compliance monitoring and enforcement of these requirements. One of the benefits of this option is the more effective compliance monitoring and enforcement. However, compliance monitoring and enforcement would be undertaken within existing budgets and resources. There is already a team within TSV that regulates pilotage services service providers and pilots, there would not be additional resources required to implement this option. This would be done within existing budgets and resources and existing audit activity. The Department scores this option -1.

*Cost to community:* Under this option,PSPs will be required to prepare a safety management system. The Department understands that the existing PSPs already have in depth safety management systems, so the compliance costs associated with implementing this option are expected to be minor. However, in comparison to the base case, PSPs would be required to develop systems and procedures to manage safety risks and hazards. These systems and procedures would need be documented. In addition to the managing the impairment of pilots, PSPs would also need to develop and maintain the competency of pilots, and other workers involved in the provision of pilotage services, such as the masters of vessels that transfer those pilots to ships to be piloted. There are a range of complex systems and procedures that would need to be developed. The Department scores this option -4.

### Option 3 – Voluntary Code of practice

*Safety:* Under this option, the regulator would develop a code of practice that would be optional for PSPs to follow and implement. A code of practice would serve as a model for how safety risks ought to be managed by PSPs. The benefit of this option is that the code of practice would include best practice measures, subject to available technologies and practices at the time, to improve safety regardless of the cost of implementing those measures. The code of practice could be updated more easily as legislation and regulations would not need to be amended. However, since the code of practice would not be mandatory, the Department would not expect that this option would see a significant improvement to safety in the provision of pilotage services relative to the base case. While some PSPs may adopt these measures, it is not guaranteed that the measures would be widely adopted having regard to their cost. However, there may be minor improvements to safety to the extent that PSPs adopt some of the measures outlined in the code of practice. Accordingly, this option is scored +2.

*Cost to government:* This option would require the regulator, TSV, to develop a code of practice. There is likely to be some implementation costs involved in the process of making a code of practice. TSV would need to consider and assess the full range of safety risks and hazards that are relevant to the provision of pilotage services and develop measures to address those risks and hazards. The code of practice would likely be developed based on international best practices, which means that TSV would not be starting from a zero base when working on a code of practice. TSV would also need to undertake consultation with affected stakeholders, such as PSPs, port authorities, the Minister and the Department, before finalising the code of practice. These administrative requirements would increase the time to make the code of practice. The Department has not estimated the extent of costs associated with the implementation of this option but expects that the costs are likely to be moderate. The Department scores this option -5.

*Cost to community:* This option would see the development of a voluntary code of practice. Since a PSP would not be required to comply with the code of practice, because it is voluntary, PSPs would not incur any compliance costs under this option. The PSPs may implement some of the measures specified in the code of practice (for example, if they are low-cost measures). However, the Department would expect that this option would not result in significant compliance costs for PSPs. Therefore, the Department scores this option +0.

### Preferred option

The result of the MCA is that Option 2 is the preferred option. This option will best enable the safety regulator to conduct audits of the PSPs to determine compliance with the general safety duties and ensure that safety risks are being appropriately managed.

Table 6‑8: Multi-criteria analysis for pilotage service provider regulations

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Criterion | Weight | Option 1 | | Option 2 | | Option 3 | |
| **Safety Standards** | | **Safety Management System** | | **Voluntary code of practice** | |
| **Raw Score** | **W’ted Score** | **Raw Score** | **W’ted Score** | **Raw Score** | **W’ted Score** |
| Safety | 50% | 4 | 1 | 8 | 4 | 2 | 1 |
| Cost to Government | 25% | 0 | 0 | -1 | -0.25 | -5 | -1.25 |
| Cost to Community | 25% | -2 | -0.5 | -4 | -1.0 | 0 | 0 |
| **Total** | **100%** |  | **0.5** |  | **2.75** |  | **-0.25** |

# Preferred Option – the draft Marine Safety Regulations

The Department has assessed a range of options in relation to improving marine safety relative to the problems identified in this RIS. The Department considers that the preferred option is to have regulations to support the operation of the Marine Safety Act. The draft Regulations are available for consideration and comment on the Engage Victoria website.

The draft Regulations are substantially similar to the current Regulations. Table 7‑1 outlines the preferred option relative to each identified problem and Table 7‑2 outlines the changes in the draft Regulations against the current Regulations.

Table 7‑1: Summary of the preferred options

|  |  |
| --- | --- |
|  | Preferred options |
| Marine licensing | Knowledge test (status quo) |
|  | This option would require the applicant to pass a theory-based knowledge test based on their understanding of the Act, proposed regulations and waterway rules. Applicants can either study the *Recreational Boating Safety Handbook 2021*, as issued by TSV, or attending a course run by an accredited training provider. |
| Endorsements (PWC) | PWC endorsement with a knowledge test (status quo) |
|  | Where an applicant has already obtained a marine licence and in doing so has passed a multiple-choice knowledge test based on the handbook, as issued by TSV. Additionally, they will be required to acquire further learnings about safety and pass a test as it specifically relates to PWCs through content within the same handbook. They must achieve a pass mark of 87% from a 15-question multiple-choice test. |
| Vessel standards and safety | ‘Fit for purpose’ vessel requirements (status quo) |
|  | This option requires vessel owners to ensure their vessel is fit for purpose as per a list contained within the Regulations that outline a combination of conditions and performance standards that the vessel must meet in order to be deemed fit for purpose (i.e. recreational boating). The measures within the list relate to major systems and items on board a recreational vessel that must be operable to enable a vessel to function properly. |
| Vessel identification | Supply HINs on registration of the vessel if known (status quo) |
|  | This option requires vessel owners to provide information relating to the HIN at registration, but only when the vessel already has an existing HIN affixed to that vessel. HINs would not be verified under this option. |
| Safety equipment | Status quo with improvements |
|  | This option requires the use of a range of equipment in different circumstances. It requires incremental improvements made to the types of safety equipment required. These are:  PFDs (lifejackets): The proposed reforms will require vessel masters to carry on board and wear a PFD. The age of compulsory PFD wearing for children will be increased up to 12 years of age. All PFDs built to non-Australian standards will be phased out to ensure that importers, retailers and recreational vessel owners only supply PFDs that are built to the Standard AS 4758. The proposed regulations will explicitly require boaters to wear the PFD as designed and in accordance with the manufacturer’s instructions.  Radios: Currently boaters can use 27MHz radio. The proposed regulations will mandate vessel owners to install a VHF marine radio.  Flares: The proposed regulations require vessels to carry flares or other devices such as EPIRBs and offers recreational vessel owners the choice of device to perform alerting functions. These alternate devices mitigate risks associated with the carriage, use and disposal of flares. |
| Pilotage service providers | Prescribe a safety management system (alternative option to status quo) |
|  | This option requires the preparation of a safety management system. Effectively, this means that PSPs will need to consider a range of risks and hazards that may arise in the provision of the pilotage services. The management of these risks would be documented, and active steps taken to eliminate those risks or hazards or manage them. The safety management system will complement existing obligations under the general safety duty. |

Table 7‑2: Description of changes in the draft regulations

|  |  |
| --- | --- |
| Proposed regulation number | Proposed regulation description |
| **Definitions** |  |
| Marine Radio | A reference to marine radio in the Regulations means a VHF marine radio. VHF radios will be required to be installed or used in the Regulations. 27MHz radios will no longer be required. |
| **Vessel Registration** |  |
| r.27 | There is a new condition of vessel registration prescribed in the Regulations. This condition requires that navigation lights, where fitted, are placed so that they are consistent with the provisions of the Convention on the International Regulations for the Prevention of Collisions at Sea. |
| **Licensing** |  |
| r.33 | Regulation is expanded to clarify that an applicant must pass a knowledge and information test that covers knowledge of the waterway rules, knowledge of the safe operation of a recreational vessel and knowledge of the provisions within the Regulations and the Act. |
| r. 35 | The marine licence may be issued and renewed for 1 year or 5 years. |
| **Vessel Operations** |  |
| r. 56 | Regulation expanded: new offence to prohibit the master of a vessel from refuelling that vessel at locations other than wharfs, jetties or piers. Clarified that fuelling of a vessel should only be undertaken with passengers on board where it is not possible for passengers to disembark safely. Similarly, the restarting of a vessel should only be undertaken with passengers where those passengers are unable to disembark safely. |
| R. 57 | Regulation expanded: regulation updated so that the vessel loading requirements are consistent with the maximum number of persons and the maximum total mass of persons specified on an Australian Builders Plate. |
| **Safety Equipment** |  |
| r. 63 | Regulation expanded: a fixed firefighting system may be used as an alternative to a portable fire extinguishing system if it complies with the relevant Australian Standard or ISO standard. |
| r. 65/66 | New regulation: a new subregulation to prescribe that a lifejacket must be worn and in accordance with the manufacturer’s instructions. |
| r. 66 | Regulation expanded: new requirement to clarify if there is a master on board a vessel with only children (i.e., under 12 years old) then that is a circumstance of heightened risk, and the adult must wear the lifejacket. |
| r. 67 | Regulation expanded: increasing the age limit to 12 years of age for children that must wear a lifejacket. |
| Schedule 1 | The prescribed technical standards that are recognised for lifejackets in use on recreational vessels so that only Australian standards are the only recognised standard for lifejackets in Victoria. |
| Schedule 3 | Regulation expanded: boaters operating on enclosed waters will be given the choice to carry a GPS enabled Emergency Position Indicating Beacon or Personal Locater Beacon or a sound signal such as a compressed air horn or marine radio with 25W output as an alternative to the carriage of flares. |
| Other | Regulation expanded: update the term ‘PFD’ to the common term ‘lifejacket’. |
| **Australian Builders Plate (ABP) Standard** |  |
| r. 100 | Regulation expanded: it is proposed to exempt an aeroplane that is designed for, and capable of being, waterborne, from the requirement to comply with the ABP Standard. |
| **Pilotage Service Providers** |  |
| Part 7 and Schedule 10 | Regulation expanded: PSPs will be required to prepare, maintain, and comply with a safety management system and keep records of that system. |

## Summary of competition and small business impacts

The Department considers that any impacts to competition or small business will be insignificant.

The proposed Regulations primarily regulate recreational boaters and not businesses, and so the regulations which relate to the registration of vessels, the licensing of masters and operational safety requirements will not have any small business impacts.

While pilotage service providers are the subject of regulation under the proposed Regulations, these organisations are not small businesses given the size of their revenues. It would not be feasible for a small business to run pilotage services. Therefore, the proposed Regulations in relation to the provision of pilotage services do not have small business impacts.

Other commercial boating is not the subject of the proposed Regulations and instead are regulated under the Domestic Commercial Vessel National Law.

Furthermore, the proposed Regulations do not impose any barriers to entry or enforce a change to the conduct, structure or performance of businesses. The proposed Regulations will not limit the number or range of suppliers or limit their ability to compete. Therefore, the proposed Regulations do not have competition impacts.

The proposed change to phase out non-Australian standards for PFDs will not impact on competition or small business. This process will be gradual, and importers and suppliers will sell boaters new PFDs as they replace their existing equipment.

Additionally, as the proposal for PFDs includes increasing the minimum age from 10 to 12 it will mean that there is a potential increase in demand for PFDs.

Marine safety equipment proposed changes will generate an increase in the demand for VHF Marine Radios by boaters but will not have a significant impact on competition or small businesses that supply fire extinguishers or flares for example. The proposed regulatory change relating to Marine radio is not intended to be implemented immediately and so boaters will have a period of time to make the transition to marine radio. Suppliers of this type of equipment will still supply 27 MHZ radios as the frequency is still operable and compatible hand-held devices are still popular with outdoor adventure enthusiasts.

# Implementation and Enforcement

## Implementation

The proposed Marine Safety Regulations remake the existing Marine Safety Regulations 2012, with amendments as considered in this RIS. Based on the analysis in this RIS, the Department is recommending substantively remaking the Marine Safety Regulations with a number of minor improvements.

### Making of the proposed Regulations

Following the public consultation period, the Department will consider all submissions and comments made by stakeholders on the proposed Regulations. The Department will make changes to the draft Regulations. After this, the Department will submit its final recommendations to the Minister for Fishing and Boating for approval. The Minister will publish a notice of decision in the Government Gazette and in newspapers. This notice will outline the changes from the exposure draft of the proposed Regulations.

The current Regulations have been extended for a period of 12 months (with new expiry on 12 June 2023), so that there is sufficient time for consultation on the draft Regulations and the Department to consider submissions. The proposed Regulations would be made before the new expiry date of the current Regulations, 12 June 2023.

The Department will communicate the outcomes of consultation and its recommendations to stakeholders following the Minister’s decision.

### Changes to processes and systems

The proposed changes will not impose substantial changes in requirements but will impact vessel masters, operators, owners, service providers, industry and community interest groups. The implementation of these changes will include a series of activities that involve direct engagement of the impacted groups and/or their representatives, as well as communication to the broader community for awareness. TSV will be the primary agency to implement any changes arising from the new Regulations and undertake communication and consultation with the industry and the public to implement the new regulations.

The broad existing regulatory approach to marine safety is not proposed to change. TSV will develop a detailed implementation plan in relation to the changes to be included in the final version of the proposed Regulations.

The proposed Regulations may require updates to be made to letters, forms, notices, website information and publications produced by VicRoads, TSV and other Victorian Government agencies such as Victoria Police. Staff training is likely to be required.

A number of stakeholders will be impacted in various ways. These implementation impacts will range from State Government departments, who will need to be aware of the new regulations and make some minor amendments to references in their documentation and public-facing information, through to industry and operator groups, who will have to make changes to their work practices and documentation, and peak bodies and sailing clubs, who will need to update website information, publications or advice provided to the public and their members.

Differences between the existing Marine Safety Regulations 2012 and the final version of the proposed Regulations may require minor changes to computer systems. Marine licensing and vessel registration records are currently maintained by VicRoads on behalf of TSV, in most cases as part of driver licensing and motor vehicle registration records.

The Department notes that the State Government is currently undergoing a process to commence a joint venture partnership in relation to motor vehicle registration and driver licensing functions currently undertaken by VicRoads. Under the proposed joint venture partnership between the Department and a third party, the State Government will retain responsibility for key regulatory and policy functions, pricing, privacy, road access and safety. The Government will retain ownership of data and maintain safeguards to protect privacy.

Expressions of interest to be a joint venture partner opened in September 2021. Determination of the successful candidate and the framework for the joint venture and computer systems are still under consideration. The proposed partnership may affect the delivery of marine licensing and vessel registration services currently provided by VicRoads. The Department will monitor the implementation of the joint venture partnership and how it may affect the implementation of the new Marine Safety Regulations.

Table 8‑1 below describes, at a high level, the proposed implementation activities that will take place for various types of changes.

Table 8‑1: Proposed high level implementation activities

|  |  |
| --- | --- |
| Type of change | Proposed implementation activities |
| All changes | Standard regulation making and gazetting process applies.  TSV will publish changes on their websites.  VicRoads, TSV and enforcement agencies will revise existing business processes and rules and propagate these changes via existing staff training and change management processes. |
| Changes that affect the broader boating community | TSV will publish changes on its website, update publications/communication materials and work with industry bodies and community clubs to promote these changes more widely. Relevant information on VicRoads website and any other public-facing communication materials to be updated. |
| Changes that affect particular sections of the community | TSV will develop and implement a joint communications plan with the relevant community representative groups. |
| Changes that affect particular industry groups or types of businesses (e.g. training providers) | TSV will develop and implement a joint communications plan with the relevant industry representatives and peak bodies. |

## Enforcement

The Department has consulted with agencies including TSV, Victoria Police, to ensure that any new or amended regulations can be enforced in a practical and effective manner.

VicRoads provides these agencies with access to its registration and licensing computer systems to enable the identification of offenders, checking of marine licensing and registration records and to support enforcement action.

## Evaluation

Under the *Subordinate Legislation Act*, all regulations expire after ten years. The Department will review the operation of the proposed Regulations before their expiry. The review will evaluate the effectiveness of the proposed Regulations and inform whether the proposed Regulations should be remade in part or in full. A thorough review of the proposed Regulations, as amended during the next ten years, will take place in preparation for their sunsetting in 2032. This review would commence approximately 18 to 24 months before the expiry of the proposed Regulations in 2032.

The success of the proposed Regulations will be evaluated on an ongoing basis until they sunset in ten years’ time. The evaluation will be conducted by the Department of Transport.

The Department will seek to establish an intradepartmental committee with its key stakeholder partners, providing an ongoing forum where any issues with marine safety regulations can be brought to the Department’s attention as they arise. The range of partners include Transport Safety Victoria, the water Police and VicRoads. The Department will also liaise with external parties such as the Victoria Police and key marine stakeholders as necessary.

The Department also intends to undertake a mid-term review of the proposed Regulations to assess how these are operating, approximately five years after the commencement of the proposed Regulations. This mid-term review is planned to commence in 2027/28. As part of the mid-term review, the Department of Transport may seek to commission additional research to supplement existing studies and understand keep emerging trends and information to ensure that the regulations remain fit for purpose in an era of rapid development of both technology and, also, practice in other jurisdictions.

The Department provides advice to the Minister for Fishing and Boating on strategy and regulatory policy in relation to marine safety matters and the operation of the proposed Regulations.

### Evaluation approach

The evaluation approach, outlined below, will be used as the basis for both the mid-term and end term reviews of the Regulations. The Department of Transport will undertake the evaluation drawing on information and input from various relevant sources. The Department of Transport will primarily draw on data and information collected by TSV, Victoria Police and studies commissioned by the Department. This includes marine licensing and vessel registration data, infringement data, penalties imposed by the Courts for marine safety offences, data and information relating to fatalities and serious injuries and information and data kept by the Department as records (as required by the proposed Regulations).

The evaluation of the proposed Regulations would be structured around the objectives identified in Section 4 of this RIS. The proposed approach to this evaluation includes:

* identifying the proposed Regulations or provisions in primary legislation, or changes in such law, that are relevant to the specific objective,
* identifying indicators — the changes in outputs or outcomes providing an indication that the objectives of the intervention are being achieved,
* identifying the baseline data — the data that will be collected prior to the commencement of the intervention, that will be used as the basis of the analysis,
* identifying the data to be collected — the data that will be collected after the commencement of the intervention. This data will be assessed against the baseline data, and
* comparing the outputs and outcomes post-implementation against the baseline data.

The evaluation strategy specified here is provided as a high-level methodology. the Department will develop a more detailed strategy once the proposed Regulations are made and prior to the commencement of the proposed Regulations. This will be undertaken as part of the task of implementing the proposed Regulations. The systems and processes for data collection can be designed with the evaluation in mind.

# Appendix A – Does the data support the Victorian model for licensing?

Noting that a number of other Australian jurisdictions have adopted more stringent requirements for marine licensing, the Department has conducted some analysis as to whether Victoria should also adopt these requirements. This analysis has been undertaken by comparing the rates of fatalities and serious injuries with corresponding rates in other states.

In order to properly compare data across different jurisdictions, there needs to be normalisation of the data. This important because there may be variations across jurisdictions that should be controlled for before making observations on difference between the outcome variable of interest (i.e. fatalities or serious injuries). The Department has chosen the number of registered recreational vessels as the normalising factors. The reason is that this information is available to the Department and is a simple metric that allows comparison between the jurisdictions and controlling for size and the number of users. Other metrics, such as hours spent on recreational boating may be a more suitable normalising factor, but this information for other jurisdictions was not available to the Department at the time of the preparation of this RIS.

Further, the Department is analysing Victorian recreational boating safety outcomes with that of New South Wales and Queensland. Comparing these states allows the Department to compare a range of different licensing approaches.

Figure 6 and Figure 7 show the trends in fatalities and serious injuries (per 100,000 registered recreational vessels) for Victoria, New South Wales and Queensland for the period between 2014-15 to 2018-19.

Figure 6: Rate of fatal incidents per 100,000 vessels between VIC, NSW and QLD from 2014-15 to 2018-19

Source: Department of Transport analysis of Transport Safety Victoria data and publicly available data from New South Wales and Queensland

The Department observes that there are similar levels of fatalities and serious injuries per 100,000 vessels. Despite having on-water practical testing in New South Wales and Queensland, there does not appear to be lower rates of fatalities and serious injuries in those jurisdictions compared to

This may suggest that more stricter licensing regimes do not necessarily lead to better safety outcomes. There are limitations to this analysis, namely that:

* As discussed above, there may be more appropriate normalising factors which better captured recreational boating use or exposure in jurisdictions.
* There may be environmental factors that cannot be controlled for (i.e. Victorian waters are generally colder than those in Queensland increasing the risk of heart attack if unexpectedly thrown into the water).
* It does not take into account other measures (e.g. regulatory or non-regulatory) to improve safety which have an effect on observed fatality rates or rates of serious injuries.

Notwithstanding these limitations, the Department observes that there is no conclusive evidence that on-water practical testing results in increased safety outcomes (i.e. lower fatalities or serious injuries).

Figure 7: Rate of serious injury incidents per 100,000 vessels between VIC, NSW and QLD from 2014-2015 to 2018-2019

Source: Department of Transport analysis of Transport Safety Victoria data and publicly available data from New South Wales and Queensland

Authorised by the Hon Melissa Horne MP

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1. The Hon. Melissa Horne MP is the Minister for Ports and Freight and the Minister for Fishing and Boating. [↑](#footnote-ref-2)
2. This is also the definition of incident given by the *National Marine Safety Data Collection Reference Manual: Data Standards and Definitions for Marine Incidents 18 December 2007 (*Reference Manual). [↑](#footnote-ref-3)
3. A vessel disablement is a failure of a major system of function such as propulsion, steering or other component or control mechanism that reduces the vessels maneuverability. As these systems and components are not operable the vessel cannot be started, or safety operated. [↑](#footnote-ref-4)
4. Note that there were no minor injuries recorded by this database until the period 2018-19, due to changes in reporting protocol in August 2018, when TSV transitioned to a new database system. So based on total injuries over the period, there was no decline in injuries from 2014-15 to 2018-19. Also note that there were no missing persons recorded until the period 2018-19. [↑](#footnote-ref-5)
5. There were 119 incidents recorded in 2018-19 with an unknown severity. This is most likely due to TSV adopting a new database in August 2018 for recording and reporting information. Prior to the transition to a new database in 2018, TSV operated two major IT systems – one system supported maritime safety and the other system supported bus safety. The transition to a new database system enabled a single platform to be used to support both maritime and bus safety. However, at the time of the roll-out of the new system in 2018, there was a period of user familiarisation with the navigating the new system in order to enter data in all fields. This had a flow on effect on Victoria Police not populating incident severity fields correctly in all cases. [↑](#footnote-ref-6)
6. Human factors are used to study incident causation. The methodology was pioneered as a field of research and risk management following a major explosion in the North Sea in 1976. See Reason, J., Human Error, Cambridge University Press, 1990 [↑](#footnote-ref-7)
7. Anderson, M., Human Factors 101; An introduction to Human Factors, 2022 at https://humanfactors101.com/about/what-is-human-factors/ accessed 6/07/2021 [↑](#footnote-ref-8)
8. See Figure 2 [↑](#footnote-ref-9)
9. *Regional Population Growth*, ABS, 24 April 2018. Before being impacted by the Pandemic (2020 – 2021) Victoria in Future forecasted Melbourne would continue to grow at similar levels, reaching eight million by 2051. Regional Victoria had been forecast to reach 2.1 million, up from 1.2 million in 2017, however, the Covid19 pandemic commencing March 2020 has had a significant impact on immigration rates in Victoria and nationally. There are no updated forecasts available at this stage. [↑](#footnote-ref-10)
10. TSV has reported this observation based on anecdotal observation. [↑](#footnote-ref-11)
11. The model Conscious competence theory of learning a new skill” is credited to Gordon Training International, invented by its employee Noel Burch in the 1970s at https://expertprogrammanagement.com/2012/08/the-conscious-competence-learning-model/ accessed 1/12/2021. [↑](#footnote-ref-12)
12. There are four providers have been approved by TSV to facilitate marine licence and PWC endorsement courses online and a number of approved providers offering face to face courses around the state. [↑](#footnote-ref-13)
13. *Marine Safety Act 2010*, sections 53(2)(a)(i), 54(2)(a)(i) and 55(5)(a)(i) [↑](#footnote-ref-14)
14. The knowledge test is prescribed also for granting a restricted licence or licence endorsement. Alternatively evidence is acceptable that the applicant holds a valid certificate of competency (i.e. a commercial qualification) issued by the Safety Director or a corresponding authority. [↑](#footnote-ref-15)
15. *Guidelines for Recreational Boat Operator Competencies*, Edition 1 – November 2000, National Marine Safety Committee. [↑](#footnote-ref-16)
16. Transport Safety Victoria, *Recreational Boating Safety Handbook, 2020* [↑](#footnote-ref-17)
17. Based on the style of the *National Powerboat Workbook* [↑](#footnote-ref-18)
18. *Regulatory Impact Statement – For Marine Safety Regulations 2011* pp 84-85 [↑](#footnote-ref-19)
19. https://www.victorianboattraining.com.au/all/#toggle-id-2 [↑](#footnote-ref-20)
20. The Department understands that the majority of new entrants complete a course before taking the knowledge test. [↑](#footnote-ref-21)
21. There are approximately 26,000 new applicants for marine licences each year. [↑](#footnote-ref-22)
22. https://www.seaschool.com.au/recreational-boat-licence/wa-course-info [↑](#footnote-ref-23)
23. https://roads-waterways.transport.nsw.gov.au/maritime/fees/index.html [↑](#footnote-ref-24)
24. https://www.transport.wa.gov.au/imarine/boatcode-and-hin.asp [↑](#footnote-ref-25)
25. https://roads-waterways.transport.nsw.gov.au/maritime/fees/index.html [↑](#footnote-ref-26)
26. https://www.transport.wa.gov.au/imarine/boatcode-and-hin.asp [↑](#footnote-ref-27)
27. https://www.sa.gov.au/topics/boating-and-marine/boat-registration/boat-code-identification-system [↑](#footnote-ref-28)