

National Marine Safety Committee

Draft Regulatory Impact Statement

National Standard for

Competencies for Trainee Marine Pilots

November 2009

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1. BACKGROUND

1.1. National Marine Safety Committee

The NMSC was formalised by an Intergovernmental Agreement (IGA) signed in November 1997 by the Prime Minister, State Premiers and the Chief Minister of the Northern Territory.

The NMSC was established as part of a strategic response to a report on national marine safety undertaken for the Australian Transport Group by Thompson Clarke. This report identified a number of deficiencies in the administration of marine safety by States and the Northern Territory. The report highlighted the lack of consistency between the jurisdictions in the application and administration of standards for commercial vessels, and the lack of marine safety data.

In June 1996 the Australian Transport Council (ATC) endorsed a Draft National Marine Safety Strategy and agreed to the formation of the NMSC to implement the strategy. Implementation commenced in April 1997 with the establishment of the NMSC consisting of an independent chair and CEOs from the Commonwealth, States and the Northern Territory Marine Safety Authorities. It is supported by a secretariat with a CEO and 14 full time professional staff.

In March 1999 a project-based approach was adopted to facilitate and implement the National Marine Safety Strategy. This approach resulted in the formation of a number of separate projects addressing various policy issues and safety standards associated with commercial vessels.

The mission of the NMSC is:

“to improve marine safety in Australia, for the benefit of the community and the maritime industry by facilitating and supporting a co-operative and coordinated approach to the efficient and effective administration of marine safety within the Australian Federation, comprised of the Commonwealth, States and Territory Governments”.

ATC first endorsed the National Marine Safety Strategy in 1998. Subsequently, the Strategy was updated to ensure continued relevance and now forms the basis for the NMSC work program. The Strategy was developed as a strategic action plan against an agreed framework of goals and objectives for marine safety administration.

The Strategy introduced requirements for marine reform, in particular:

- Common and appropriate standards and arrangements that provide for consistent legislative and operational marine safety practices in all jurisdictions.
- Safe users, incorporation of OHS concepts and practices in marine training programs, encouraging vessel operators to recognise their duty of care to employees and passengers.
- Safety programs based on relative risk and best practice measures.

The Marine Safety Strategy contains a number of strategic actions for achieving the outcomes sought. Among these are the following:

- Develop and promulgate standards based on recognised and approved national and international standards for the design and construction of vessels.
- Encourage the development of professional competence in vessel design, construction and survey.

- Introduce and support performance based standards as an alternative to prescriptive standards.
- Establish practices for assessing new technologies or operations in a timely manner and facilitate rapid transfer into standards.
- Incorporate OH&S principles into design and construction standards.
- Encourage vessel operators to recognise their duty of care to employees and passengers.
- Develop a forward program of broad safety initiatives that reflects relative risk, based on an assessment of an incident and other safety data.

1.2. The RIS Process

State and territory marine safety authorities assist with the development of the RIS by providing written comments on the draft RIS. Any information regarding jurisdiction specific impacts of the proposed standard, especially impacts that are additional or significantly different to the identified impacts that they would like considered for inclusion in the national RIS, are provided.

In June 2004, the COAG Principles and Guidelines, in regard to the minimum assessment requirements, stated that:

“Where a Ministerial Council or standard-setting body proposes to agree to regulatory action or adopt a standard, it must first certify that the regulatory impact assessment process has been adequately completed. The assessment process does not necessarily have to be carried out by the Ministerial Council but the Council or body should provide a statement certifying that the assessment process has been adequately undertaken

and that the results justify the adoption of the regulatory measure. “

“Most governments have regulatory impact assessment processes in place. The completion of regulatory impact assessments by Ministerial Councils and standard-setting bodies should remove the need to duplicate this analysis.”

The Office of Best Practice Regulation approve RIS for both public consultation and decision making based on compliance with COAG policies. These policies have been updated by the document “COAG Best Practice Regulation - A Guide for Ministerial Councils and National Standard Setting Bodies, October 2007.”

2. STATEMENT OF THE PROBLEM

2.1. Pilotage Movements in Australian ports

Marine Pilotage involves directing and controlling the movement of a vessel/ship through near-shore and inshore waters unfamiliar to the ship's master or providing navigation advice to the master for this purpose. Pilotage service is a job that requires a high degree of proficiency, quick and independent thinking, and knowledge about the port, its waters and local conditions. A marine pilot is responsible for not only the safety of the ship being brought into the port but also the marine environment and the port infrastructure. The pilots employed by the port have to ensure safe passage, berthing and unberthing of ships of 500 Gross Registered Tonnage and above inside the harbour limit. The pilot is expected to integrate an in-depth knowledge of local geography, climate and traffic patterns with operational information for a safe passage.

While inside the congested port waters, the pilots navigate the ship on behalf of the owner and master of the vessel. If an accident occurs inside the port waters, the insurance company will cover the vessel only if a licensed pilot was on board at the time of the incident.

The primary need of the shipping industry is for trained pilots who can conduct the passage of a vessel safely through the designated pilotage area. These pilots must be adequately trained and certified to meet the highest safety standards. It is in the industry's best interests that pilots are properly trained and certified.

In Australia, pilotage is compulsory in most ports. Vessels may not enter, leave or move within a pilotage port before taking onboard a pilot provided by a designated pilotage service provider. Unless exemption is granted to a vessel/ship, it is an offence for a master or the owner of a vessel not to engage a pilot to bring the vessel to the port. Normally vessels below certain sizes, warships and government vessels are exempted from engaging pilots. As well, a small number of vessels that are regular visitors to a port seek a certificate of exemption under which the master demonstrates a level of local knowledge equivalent to that of a pilot. Masters of the vessels exempted from pilotage are not impacted by the proposed standard.

In 2008, there were 70, 067 pilotage movements (Containers, General Cargo and Other Types of Vessels) at 50 ports in Australia (Table 1). 55,278 of these movements were under pilotage and 15,789 movements were exempted from pilotage.

The marine pilot distribution within ports described in Table A 1 provides evidence which indicates that the majority of the marine pilots are employed in the major city ports whilst most of the remote ports employ very small numbers. Before the economic downturn, Australia experienced a shortage of about 15 marine pilots most of which were needed to satisfy the demands for pilotage works at remote ports (Australian Marine Pilots Institute (AMPI) Data Sources).

According to one industry source, the demand for pilotage movements in Australian ports is expected to increase by 12% by 2014 (AMPI Data Sources). This suggests that about 30 additional marine pilots are needed by 2014 in order to meet the demand of the pilotage industry in the country. In addition to the rise in demand for marine pilots. The industry source has predicted that about 60 marine pilots will be retiring in the next 4 years due to age alone.

Table 1: Commercial vessel piloted movements (Containers to General Cargo & Other Vessels) at Australian Ports in 2008

States/Territory	Piloted Movements A	Number of Exemptions B	Total Pilotage Movement (A+B)	Number of Pilots
New South Wales	9795	508	10303	47
Victoria	7977	7280	15257	47
Queensland	15060	4042	19102	97
South Australia	2616	600	3216	12
Western Australia	16651	274	16925	63
Tasmania	1672	2494	4166	10
Northern Territory	1507	591	2098	3
Australia Total	55278	15789	71067	279

Sources: Ports Australia and Individual Ports.

Note:

Some ports keep data in financial year and others in calendar year.

There are also around 65 Coastal Marine Pilots in Queensland

2.2. The Problem

There are prevailing concerns in the Australian maritime sector over a looming shortage of persons with prerequisite seagoing qualifications. The reduction in the number of young people being trained as seafarers in the Australian-controlled fleet has resulted in an ageing skills base for marine pilots. This has also led to a shortage in mariners and the maritime industry is currently faced with the many problems and challenges that occur in running day to day activities in Australian ports. Some of these problems are listed and discussed below:

1. Shortage of marine pilots in Australia
2. Ageing marine pilots in Australia
3. Fatigue often occurring in marine pilots as a result of long hours of work
4. Declining recruitment pool of marine pilots in Australia.
5. Length of time to become a marine pilot

2.2.1. Shortage of marine pilots in Australia

Australia is currently experiencing a shortage of qualified seafarers for all ranks and above all, marine pilots. The current economic downturn which has slowed down business and industry activities in many countries of the world has painted the picture as if there is no shortage of pilots. According to one industry source, there is currently a shortage of about 15 marine pilots in Australia. This shortage is mainly due to the fact that in the 1990s, Australian shipping was in decline and there was a need to reduce costs. Shipping companies in Australia and many other countries of the world considerably cut down the expenditure budget on training seafarers. The inability to train new seafarers in Australia is also attributed in recent years to the focus of the Australian maritime industry on the expansion of the offshore oil and gas industry with the resultant inability to finance the training of new seafarers in the 1990s.

There are currently about 338 marine pilots in Australia and 15 of these are hired from overseas. In 2008, there were 55,278 piloted movements in Australian ports which were serviced by only 279 pilots. There are also 65 coastal pilots operating in Queensland. In the major iron ore and coal exporting states of Queensland and Western Australia, the demand for port pilots is likely to increase by 15% per annum over the next couple of years. In other states and the Northern Territory, the demand for pilotage is also likely to increase in the future. In general, the demand for marine pilots is expected to increase on average by about 12% each year from 2014.

2.2.2. Ageing marine pilots in Australia

The lack of training of new seafarers almost a decade ago has increased the age profile of Australian seafarers to over 50 years. Marine pilots are part of the ageing maritime workforce in Australia, with the available recruitment pool diminishing. In Australia, there is no program currently in place which trains mariners directly for pilotage duties. Marine pilots are sourced from Master Mariners who have considerable years of sea time experience, especially those who hold Master Unlimited or Class 1 certificates. As a result, before a mariner is ready to be recruited as a pilot, the person is already in the older age bracket. In some cases, it is those mariners who are no longer interested in going to sea as a result of old age that apply for pilotage jobs. The average age of Australian marine pilots is 52 years (Table 2). Over half of Australian marine pilots are over 51 years of age with over one third of them expected to retire within the next 4 years. Ageing marine pilots are likely to be psychologically attuned to the increasing stresses of less experienced crews. One industry source has predicted that about 50 marine pilots will be retiring in the next 4 years as a result of their age (Table 2).

Table 2: Pilot ages in Australian ports as at 2005 grouped

State/Territory	Under 30	30-40	41-50	51-60	Over 60
WA (Excl DPI Ports)	-	11	7	20	10
SA	-	2	4	4	2
NT	-	1	1	4	-
TAS		6	1	3	3
VIC	-	3	8	13	10
NSW	-	2	14	17	4
QLD	-	9	33	14	3
Total	-	34	68	75	32

Source: AMPI 2005

2.2.3. Fatigue often occurring in marine pilots as a result of long hours of work

Fatigue which often occurs in marine pilots is recognised as a significant issue by the port and maritime industry in Australia. In 2007 there were at least 12 reported marine incidents and 5 in 2008 involving ships under pilotage in Australia. The ATSB Investigation Committee identified fatigue as one of the factors that contributed to the occurrences of these incidents. There are different types of fatigue which are caused by various reasons between and within different ports. Fatigue may be experienced by a marine pilot as a result of long hours of overtime work, a long pilotage job and a series of short duration jobs over different time spans, or ageing which reduces the marine pilot's ability to judge or assess risk. Fatigued marine pilots are also at very high risk in terms of incident occurrences. However, in the maritime industry fatigue is not limited to pilots alone.

2.2.4. Declining recruitment pool of marine pilots in Australia

In Australia, marine pilots are currently recruited from experienced Master Mariners with considerable years of sea time, especially those who hold Master Unlimited or Class 1 certificates or the former masters of Australian vessels who held a number of pilotage exemptions. The younger generation of seafarers are not willing to go to sea in order to become experienced Master Mariners who are the sole source of pilot recruiting worldwide. If Master Unlimited remains the essential threshold qualification for recruiting future marine pilots, then, as far as the Australian maritime industry is concerned, we will be recruiting from a declining pool. A study by the Australian Maritime Safety Authority (AMSA) concluded that Masters' tickets would increasingly be in short supply for the purpose of recruiting marine pilots in the near future. Another study conducted by McCoy in 2003 finds that even some of the pilots recruited from the present pool do not have the required skills and knowledge expected of a marine pilot. The fact

that there are fewer marine pilot applicants as a result of a declining recruitment pool means that the only option for employers of pilots is to make the existing marine pilots work over-time, inside or outside the roster periods. This increase in working hours usually leads to fatigue at the workplace which has a very high risk for workplace injury and marine accidents.

The marine pilot pool in Australia has halved in the last 6 years and is expected to get worse in the future years. From Table 3, for the period 2005 to 2008 alone, 60 marine pilots retired. 28 marine pilots are expected to retire in 2009-2010 and 26 from 2011 to 2014. Although the number of marine pilots continues to decline, pilotage movements are expected to increase during the next two to three years.

Marine pilots are expected to satisfy certain medical conditions before operating ships. Some marine pilots have deteriorating health conditions as they age and are not medically or physically fit to work as pilots. Some of the retired pilots have been taken back on a contract basis but this number is not high enough to meet the demand of pilotage movement in the country. For example, recently, a 70-year-old pilot who was retired was engaged in some of the regional ports to help ease the shortage crisis at the port. Older Pilots continue to work for many years and in WA several have worked in this vein until well into their 70's but this scenario depends heavily on continued good health, continued insurance cover.

Some coastal ports have to pay large sums of money to attract marine pilots which ultimately end up being borne by consumers. For example to ensure that iron ore exports are not delayed, Dampier Port is paying pilots \$AU400,000 a year, while Port Hedland offers a package up to \$530,000. Ships have been delayed off Sydney awaiting pilots. Although this is attractive to those with experience and qualifications, it is not sustainable. Eventually the lower paying shipping jobs will not be filled and some ships will not operate. The problem of marine pilot shortages has nothing to do with low salary remuneration packages or lack of incentives given to the pilots by port authorities or government but just that the marine pilots are not there. Marine pilots are highly paid so that by the time the pilot reaches the age of retirement, incentive payments are no longer a priority. The number of years used under the current system in training mariners before they acquire the skills and qualifications needed to become marine pilots make mariners under this pathway become pilots at an advanced age.

Table 3: Number of pilots who have retired or are due for retirement

State/Territory	2005-2006	2007-2008	2009-2010	2011-2012	2013-2014
WA (Excl DPI Ports)	5	7	6	10	-
SA	1	2	1	-	-
NT	-	1	2	1	-
TAS	2	1	1	1	-
VIC	4	11	8	-	2
NSW	10	5	4	1	4
QLD	8	3	6	6	1
Total	30	30	28	19	7

Source: AMPI 2005

2.2.5. Length of time to become a marine pilot

The requirement to become a marine pilot under the current pathway is that the mariner must obtain a Master Class 1 or Unlimited certificate. To be eligible for the award of a Master's Certificate of Competency, AMSA requires candidates to obtain Diploma and Advanced diploma in Maritime Operation and sea time experience.

AMSA requires a minimum of 78 months (6.5 years) sea time experience plus educational qualifications. The number of years required to complete the entire program for the award of Master Unlimited Certificate of Competency can be as long as 12 to 13 years since leaves from workplaces have to be added. The minimum period for the completion of a Diploma course is 1.5 years and that of the Advanced Diploma is an additional year. The length of time taken to become a marine pilot seems to be long under the current pathway as courses relevant to all maritime operations are included in the program.

2.3. The need for Government Intervention

Australia has an excellent record in marine safety on par with other developed nations. This achievement was possible because Australia's occupational health and safety legislation is amongst the most stringent in the world. Marine accidents can be extremely costly. This provides the context for a desire to maintain the existing high standards.

There is no standard in particular which defines the pathway to the pilotage profession in Australia. As a result, port authorities depend on experienced mariners who hold Master Unlimited Class as a source for marine pilot recruitment. These experienced mariners passed through all the stages, performed the range of mariners' tasks and served in different roles in the

maritime profession. This process usually takes 12 to 13 years. Each individual port uses its own criteria in the selection of marine pilots across Australia and there is no national consistency in training and recruiting marine pilots. It is very important that there is a national consistency in training and recruiting marine pilots in all Australian ports.

As already stated the Master Unlimited Class as a source of recruiting is declining and expected to diminish more in the future years. Although, the number of marine pilots is diminishing, pilotage work is increasing and expected to increase more in the future years because of increasing trade.

The reasons for this declining recruitment pool have been discussed earlier in this chapter. The new generations of seafarers are not willing to go to sea in order to get the level of experience needed to become Master Mariners who are the sources from which marine pilots are recruited in many countries including Australia. Instead, the mariners prefer to sacrifice their career development in place of family commitments. The ports and marine authorities made available incentives for pilots who may be willing to work in some of the regional ports across Australia but this has not had a significant impact on the shortage.

The request from industry to create an alternative pathway for educating and training marine pilots in Australia has necessitated Government intervention. Government intervention is required to create an alternative way of producing future marine pilots to meet the demand for pilotage movements in Australia. Government and the maritime industry need to develop a direct program for the pilotage career in Australia, a program in which mariners may not necessarily spend so many years at sea to be able to acquire the skills and knowledge required to carry out pilotage duties successfully and safely.

3. OBJECTIVE

The objective is to provide an alternative way of training and recruiting marine pilots and at the same time ensuring the safe operation of commercial vessels in Australia. This process will help remove impediments on the traditional pathway of training and recruiting marine pilots in Australia.

This objective aims at solving the following problems:

- The long periods of sea time training usually required to become a trainee marine pilot.
- Removing barriers preventing high school leavers and young mariners who have interests in marine piloting to become a trainee marine pilot.
- To reduce the shortage of marine pilots being experienced currently by the ports and maritime industry across Australia.
- To reduce the number of older aged pilots present in the current marine pilots in Australia.
- To reverse the declining recruitment pool of marine pilots in Australia.

4. OPTIONS FOR THE NATIONAL STANDARD

4.1. Introduction

A number of options were considered in this RIS for developing this national standard on Competencies for Trainee Marine Pilots. These were:

- Option 1 The status quo which depends solely on the present approach of recruiting trainee marine pilots mainly from the ranks of mariners holding Master Unlimited qualifications and does not develop any program that aims at training mariners solely for direct pilotage work
- Option 2 Depend on foreign migrants who have maritime skills as a source, by recruiting mariners from overseas to be trained as marine pilots
- Option 3 Train Trainee Marine Pilots in Foreign Countries
- Option 4 The Standard- a new pathway for trainee marine pilots

4.2. Option 1

Under option 1, nothing is done to the existing approach to training and recruiting marine pilots. Individual port authorities will continue to use their own approaches and discretions in the training and recruiting of marine pilots.

4.2.1. Marine pilot qualifications

The NMSC published a set of national guidelines for use by State and Territory Marine Authorities in the establishment of standards governing marine pilotage in Australian ports. The guidelines were updated and a second edition was published in 2008. The guidelines include the pre-qualifications to become a trainee marine pilot and list a number of options, as set out in Table 4.

It is important to note that each of these options is based on the applicant providing the Port Administrations or regulators with documentary evidence of his or her competence, issued by a government agency in Australia.

However, the outcomes from any such initiatives ultimately need to be acceptable to the Maritime Authorities, which collectively make up the NMSC. The NMSC organised a seminar involving stakeholders, industry and the maritime authorities of the states and the Northern Territory to discuss the need for an alternative approach to training future marine pilots.

Table 4: Requirements to Acquire a Marine Pilot's Licence

A pilot's licence should not be issued unless the applicant is certified as medically fit to perform the duties of a pilot and possesses either:

- a) a valid Certificate of Competency as an Australian Master Unlimited or a valid Australian Certificate of Competency for the size of vessel being piloted;
- b) a Certificate of Recognition issued by AMSA in relation to an international qualification equivalent to a);
- c) Royal Australian Navy qualifications and such additional competencies identified by AMSA as are required to achieve equivalence to an Australian Master Unlimited or an Australian Certificate of Competency for the size of vessel being piloted;
- d) a pilots licence issued by the relevant Authority of a flag State that is a party to the *International Convention of Training, Certification and Watchkeeping of Seafarers, 1995*;
- e) a valid pilots licence issued in another Australian jurisdiction; or
- f) evidence of competencies equivalent to a) to e) and acceptable to the Authority and port administration.

NOTES:

1. It is anticipated that there may, in future, be nationally agreed equivalent competency solutions; however, these are currently still under development.

There may be variations to the competencies listed or additional competencies that might be considered at the local level by users of these guidelines.

4.2.2. Master Certificate of Competency

The current requirement to become a marine pilot is that the mariner must obtain a Master Class 1 or Unlimited certificate. To be eligible for the award of a Master's Certificate of Competency, AMSA requires candidates to follow the path below:

- Prerequisite educational requirements (determined by college)
- Cadetship - 18 months sea service
- Diploma - 6 months sea service
- Deck Watch Keeper - 12 months sea service
- Advanced Diploma - 6 months sea service
- Chief Mate - 24 months sea service
- Master - 12 months sea service.

In all, AMSA requires a minimum of 78 months (6.5 years) sea time experience plus educational qualifications. The number of years required to complete the entire program for the award of Master Unlimited Certificate of Competency can be as long as 12 to 13 years since leaves from workplaces have to be added. The minimum period for the completion of a Diploma course is 1.5 years and that of the Advanced Diploma is an additional year.

The pathways for a Deck Officer, the route to obtain a Master Certificate at the Australian Maritime College is shown in Figure A1 in Appendix Two.

4.3. Option 2

Under option 2, the educational qualifications and training programs obtained by the majority of mariners have to be re-assessed by AMSA to determine eligibility for working as a marine pilot in Australia. Some foreign mariners may have to undergo basic language skill courses to gain the level of proficiency required in English to be able to work in Australia.

4.4. Option 3

Option 3 involves sending students and mariners to maritime colleges in overseas countries to be educated and trained as trainee marine pilots. Under this option, the educational qualifications obtained and the training programs completed by the trainee marine pilots have to be re-assessed by AMSA to determine eligibility to work as a marine pilot in Australia. Some of the trainee pilots have to do bridging courses in order to meet the requirement for Statement of Program Completion-Trainee Marine Pilots.

4.5. Option 4

4.5.1. Introduction

The proposed national standard is designed to develop a training program in response to the diminishing numbers of qualified Australian ships officers available to commence pilot training. This problem is generally recognised internationally and in particular in a report prepared by an industry group established by AMPA in 2003. The report published in AMPA (2005) indicated a significant loss of current marine pilots to retirement expected between 2005 and 2010. It is important to note that there is no system currently in place in Australia which trains mariners directly for pilotage activities.

The worldwide maritime skills shortage, including Australia, has made it necessary for an industry initiative on the need to develop alternative pathways to obtain the required skills, knowledge and training in order to become a trainee marine pilot. This initiative was supported by stakeholders who helped the NMSC in designing the program for the current proposed standard.

This new approach requires the development of a comprehensive training program to ensure that trainee marine pilots obtain the relevant skills and knowledge that one expects of professional pilots. Much work has been done on developing training programs, which will be at Diploma and Advanced Diploma level and a Bachelor degree in Applied Science (Maritime Operation) by two of Australia's maritime training colleges. The requirements for the new approach are made up of the current Master Unlimited Class qualifications and a Bachelor degree program as an additional course which focuses on pilotage duties. The requirements for the new program were put together a group of experienced mariners most of whom are current or retired marine pilots.

Option 4 will provide an alternative pathway of acquiring all the required skills, knowledge and training to become a trainee marine pilot in less than 5 years. A maximum of a 5 year study and training period was arrived at after consultation with marine pilots and related stakeholders after taking into consideration how many years of a full time study is needed in order to obtain the skills and knowledge required to perform pilotage duties successfully and safely. This option also

provides an opportunity for high school graduates and young mariners with an interest in a marine pilot career to join at any stage of the program depending on their level of academic qualification and sea training. Unlike option 1, where only mariners with Master Unlimited certificates who have significant number of years at sea can become marine pilots, this option has the ability to provide young and energetic marine pilots to match future demand for pilotage movements in Australian ports. Option 4 also provides employment opportunities and generates income for youth in Australian communities. This option will increase the market and bring an element of competition to the marine pilot profession, thus promoting a more competitive recruiting process in the ports.

Option 4 will encourage mariners to remain longer in the profession if not throughout their entire career life. In recent years, many Australian seafarers either resigned from sea going and changed their profession or retired. Some of the mariners thought their sea going career was at the expense of their family social life and decided that instead of going to sea for several months, leaving the family behind, it was better to divert to a career path which could keep the mariner together with his/her family. Marine pilotage is an alternative career path which addresses this problem. With the new national standard, all other mariners who have an interest in pilotage can join at any level of the program and remain in the marine industry. Option 4 will make it possible for marine pilots to accept offers from regional ports in Australia since all city ports are likely to employ at full capacity. For example at the beginning of the economic downturn, when some of the city ports were less busy, some pilots accepted postings to the regional ports. This option will also set a benchmark for a national consistency in training and recruiting marine pilots in all ports in Australia since it is the first standard which creates a direct pathway for a pilotage career.

4.5.2. Statement of Program Completion -Trainee Marine Pilots

4.5.2.1 Scope

The training program considers Recognition for Prior Learning (RPL) and exempts people who have completed other maritime courses which provide equivalent training to that which is detailed in the Pilot Training Program. If there is no prior learning then the candidate must complete the full training program. This will make it possible for a wide range of people to enrol in the course, including high school leavers who have attained suitable tertiary admission levels in their final year.

4.5.2.2 Prerequisite

High school leavers often referred to as “ab initio” candidates will need to have completed Mathematics, English Language and Science courses to specified tertiary admissions levels. It is preferable that the “ab initio” candidates have studied physics as a tertiary entrant examination to be eligible to apply for acceptance to the program. The candidates must therefore meet the minimum entrance scores required to be able to commence a Bachelor of Applied Science degree.

At the reference group meeting in Sydney, the industry raised concerns about the way “ab initio” students were being accepted to commence a Bachelor of Applied Science program. It was generally recognised that the responsibilities of a marine pilot require that the trainee pilots be able to make decisions on the safe berthing of a vessel which can result in very considerable damage to port infrastructure, the commercial viability and environmental safety of the port. Therefore the pilot training program candidates need to attain sufficient maturity to make decisions in time critical situations which have a very high level of certainty of outcome.

There are opportunities for many suitable candidates who hold Master Class 2, 3 and 4 Certificates and Navy Officers who have the knowledge and experience to undertake the pilot training program.

4.5.2.3 The Pilot Training Program (PTP)

The PTP consists of two main phases: Phase 1- Bachelor of Science (Pilotage), Phase 2 - Industry Experience and Short Courses.

4.5.2.3.1 Phase 1: Bachelor of Science (Pilotage)

The PTP is expected to take 3.5 years for someone with no RPL. This consists of completing the majority of units required for Deck Watch Keepers Certificate (Year 1), the Unlimited Master Certificate (MC1; Year 2) and the final year of the degree, which consists of pilotage specific units. The completion of the degree program completes Phase 1, the academic aspect of the pilot training program. The graduates of the academic program shall require significant on the job training to gain experience in the industry to the level which would enable them to commence the port specific pilot training.

4.5.2.3.2 Phase 2: Industry experience

The industry experience consists of understudy at sea and in port. Phases 1 and 2 can be attempted concurrently. For instance whilst on semester break students may consider completing a six week tour at sea. The industry component of the pilot training program is expected to take a year. During this period the students will also be expected to complete two essays (each 5000 words), one on port operations and the other on pilotage/ship board operations. The topic of the essay will be selected in consultation with the AMC lecturer.

4.5.2.3.2.1 Sea time

Students are required to complete a total of nine months sea time on ships of at least 3000 Gross Tonnage. Sea periods are to be of at least six weeks duration. It is preferable for the student to gain sea time on a variety of ship types.

During the time at sea the student must complete a Workbook of tasks similar to the Deck Officer Workbook. The sea time is expected to take 6 to 9 months. It is preferable that the sea time periods be taken in at least six week blocks and the candidate must serve on at least three ships. The aim of the sea time is to experience the ship's routine in port and at sea, to become part of the ship's team and to partake in the berthing and sailing operations in all areas of the ship, including the bridge, the mooring stations fore and aft as well as the engine room. It is essential that any person who intends to become a marine pilot, fully understands the risks and problems associated with a ship navigating in confined port waterways including berthing and unberthing manoeuvres, as well as the different risks and issues that may occur during the sea voyages.

4.5.2.3.2.2 Port time

The candidate will spend time working in at least three ports understudying the operations of the port in order to gain an understanding of the regulatory and commercial requirements of the port and in particular the risks and problems inherent in managing port shipping traffic, mooring (mooring gang and mooring boat operations), towage and pilot boat operations. Port time should be completed in periods of at least six weeks.

During the port time, the candidates will also understudy pilotage operations in order to become familiar with the variety of pilotage tasks and the regulatory requirements of pilotage. The aim of this period is not to understudy pilots in order to become a pilot, but rather the purpose is to develop an awareness of the pilot role in the logistics supply chain of moving cargo through the port and how this role is managed from a legal, regulatory and commercial perspective. The trainee will no doubt be keen to observe pilotage. However, it is suggested that the experience of understudying the pilot be delayed until the student has completed year three of the degree program and is familiar with ship dynamics.

4.5.2.3.3 Short courses

In addition to the courses detailed in Table A2, there are two short courses to be completed by the pilot training program students.

- Ten day manned model training program. The aim is to apply the ship dynamics theory studied in the bachelor program in the manned model facility. The course will review the ship theory and then show the students the theory in practice in the manned models. 50% of the time will be in lectures and 50% on the water (in the variety of roles required: Captain, Pilot, and Engineer).
- Five day simulation. This program will introduce the student to the management systems of the bridge and how to ensure the bridge team is properly managed; understanding the various roles so they are safely and efficiently completed. There is to be a strong human factors element included in the simulator training.

Both facilities can be required to complete an assessment on the students' competencies in manned model training and simulator training as part of the final assessment.

From stakeholders point of view, "Is the proposed education and training structure and time frame adequate enough to acquire all the skills and knowledge required to discharge the duties of a marine pilot successfully and safely?"

4.5.2.4 Final assessment

AMSA shall ensure that an adequate assessment of competency has been undertaken prior to the issue of SPC – TMP.

5. IMPACT ANALYSIS

5.1. Cost Benefit Analysis

Cost benefit analysis is used to measure the economic impact of any government action by reference to the net social benefits that action might produce. Benefits and costs are social rather than private or individual, in the sense that they are measured irrespective of the people to whom they accrue and are not necessarily confined to transactions that are captured in formal markets. Cost benefit analysis is a tool to determine the worth of a project, programme or policy. The effectiveness of the cost benefit analysis relies on two main features:

- benefits and costs are, where possible and appropriate, expressed in money terms to make options directly comparable with one another, and
- benefits and cost are valued in terms of the economy and society as a whole, so the perspective is Australian. This differs from for example a financial or an investment evaluation, which is generally conducted only from the vantage point of an individual, a firm, an organisation or agency.

The cost benefit analysis method considers the flow of real resource costs and benefits, and excludes for example taxes and subsidies, which are regarded as transfer payments from one part of the economy to another. Cost benefit analysis attempts to measure the value of all cost and benefits that are expected to result from the activity. It includes estimating costs and benefits which are unpriced and not subject of normal market transactions but which nevertheless entail the use of real resources. However, it is very difficult to assign dollar values to some benefits and costs, such as when the benefit or cost is not known or is 'intangible'.

This consultation RIS will be used to obtain comments and specific information from stakeholders and the public to identify, qualify, and quantify where possible the costs and benefits of the options.

5.2. Costs and Benefits of Option 2

The potential costs of option 2 are the cost of educating and training of trainee marine pilots from overseas, cost of any bridging and English Language courses that might be taken by the trainee marine pilot in Australia, the cost of assessing overseas qualifications by AMSA and cost of migrating to Australia. Migration costs include all immigration charges and the airfare of the trainee marine pilot and his/her family from overseas.

Option 2 has been operating jointly with the current path way for some time now but could not have any significant impact on the shortage of marine pilots in Australia as the shortage is a worldwide problem. This option may not address the pilot shortage problem across the whole of Australia if immigrants are not willing or ready to settle in regional areas. Although the Australian government immigration policy allows mariners to get temporary work visas and work in Australia, out of the current 328 marine pilots, only 15 have been recruited from overseas. Some of the foreign mariners are also likely not to meet AMSA's basic requirement for a marine pilot; that of a Master Unlimited Certificate of Competency, or recognised equivalent. Some of the trainee marine pilots may have to do additional studies in Australian institutes and colleges in order to meet AMSA's basic requirements since the contents of the courses of the programs in overseas countries are likely to differ.

This option will still make the age profile of marine pilots remain high since the approach to training and the process of recruiting marine pilots in most overseas countries is similar to that of Australia at the moment. This option may not provide the Australian industry with the number of marine pilots needed to meet the demand caused by predicted shipping growth and the number of marine pilots expected to retire in the next few years. The current Australian government policy with regard to skilled migration allows port authorities and coastal pilot providers to consider sponsoring suitable and experienced marine pilots for migration to Australia. A small number of overseas trained pilots have been so sponsored but the marine pilot shortage is a global issue and the supply of foreign marine pilots depends on the priority given to meeting the demands in their home countries. Although Australian salary levels and the possible lowering of entry standards may place upward pressure on supply, the question is whether this policy could satisfy Australian demand. Another reason for not being able to meet the demands of the Australian industry is the current age profile of the international mariners, which reflects that of Australia.

There may be some benefit to be derived from option 2 but not as high as those to be derived from options 3 and 4.

5.3. Costs and Benefits of Option 3

This option may be very costly to the community as foreign exchange and travel visa expenses are involved and for the fact that many of the colleges and universities charge higher fees than in Australia. For example consider the fees charged in the Glasgow College of Nautical Studies in 2008/2009 academic year to obtain a Bachelor of Science degree (Maritime Operation) in Table 5.

The potential costs of adopting option 3 are similar to that of option 2. These costs are the cost of educating and training of trainee marine pilots in foreign countries, cost of acquiring a student visa, airfare to and return from the foreign country of study, cost of living expenses (food and accommodation), cost of any bridging courses that might be taken by the trainee marine pilot after returning to Australia and cost of assessing overseas qualifications by AMSA. The quantitative analyses of these costs are not considered in the RIS since this option involves foreign currency transactions and fees charged for educating and training of mariners vary from country to country and even within the same country fees vary among universities/institutions. The exact cost of training and educating a student depends on the country of study and it would be unrealistic to assume that all students will be trained in the same country or college/university. The costs of training marine pilots in foreign countries are likely to be higher as foreign currency conventions and international travel is involved. It is also likely that AMSA may not recognise the certificates and degrees awarded by some of the foreign maritime colleges due to the accreditation status of these colleges and the costs involved in getting those certificates may not serve the purpose for which they were incurred.

Table 5: Fees Charge in 2008/2009 to complete Bachelor of Science Degree (Maritime Operation) in Australia and Glasgow College of Nautical Studies-School of Nautical Studies and Marine Operations

Courses/Programs	Country	
	Australia	Glasgow College
	Fees in \$AU	Fees in £ and \$AU
Pre Sea deck	9,400	-
Deck watch keeper	24,000	-
Chief Mate Master	17,400	-
Diploma & Advanced Diploma	50,800	-
Officer of the Watch (Reg II/1) Post HND	-	£3,880= \$AU 6,809
SVQ Level 2 & 3 Registrations	-	£1,000= \$AU 1,755
Bachelor Degree	16,000	£33,075= \$AU 58,039
Supplementary Fees & Charges (Additional Fees)	-	£6,002= \$AU 10,532
Ancillary Courses as required	-	£2,440= \$AU 4,282
Grand Total	\$AU 66,800	£46,397=\$AU 81,417

Note: 1 British Pound = 1.76476 AUD, and 1 AUD = 0.56988 British Pound (GBP)

There is a risk of the trainees under this option not returning to Australia after program completion due to the following reasons:

- The maritime skill shortage is a worldwide affair which may guarantee a job offer with better conditions of employment than in Australia.
- The trainee marine pilot already holds a temporary work visa as a student.
- The trainee marine pilot requires no assessment of his qualification by the maritime professional body before working in that country.

It is likely that the education and training of marine pilots in most foreign countries may take a longer period of time than designated in the proposed standard. This is because the proposed standard is designed purposely to meet the requirement for pilotage duties, thereby saving study periods which are spent on courses relevant to other maritime operations rather than pilotage. However, stakeholders' views are welcome on whether the proposed education and training program and time is adequate to obtain the skills and knowledge needed to discharge successfully and safely the duties of a marine pilot.

The trainee will still need to complete onsite training at the port in Australia where they intend to work as marine pilots in order to familiarise themselves with those ports. Trainee pilots will take

6 months to complete onsite training at the ports of their employment in order to familiarise themselves with the ports' navigation areas. Refer to Annex B in the proposed standard for what is involved in port training.

The potential benefits to be derived from this option are similar to those of option 4 which are discussed later. The difference is that the benefits to be derived from option 4 may be higher and the costs less.

5.4. Costs and Benefits of Option 4

Option 4 is an alternative pathway to obtain the skill and knowledge required in order to become a trainee marine pilot.

This draft RIS and the draft Standard focus on the minimum requirements for competencies for a trainee marine pilot rather than the usual mariners' training. The key benefits are avoidance of a continuous shortage of marine pilots and costs that are likely to be due to injuries, property damage, and investigations which may be due to fatigue occurring in marine pilots as a result of long hours of work. Another benefit is potentially producing a younger and energetic workforce for the pilotage industry and creating employment and income earning avenues to the Australian community. This option will help strengthen competition in the recruiting of marine pilots, making it possible for some pilots to accept job offers in remote regional ports.

However, it is very difficult to make accurate estimates of the various costs that may be avoided over the next ten years by the maritime industry, government, and all other stakeholders. It is not known how many future potential accidents may be avoided or their effects mitigated because of future increases in marine pilots as a result of compliance with this option, which may reduce or eliminate fatigue that is normally associated with longer hours of work due to the shortage of marine pilots.

The estimated costs and benefits over the 5 year period are discounted to present day values using a range of discount rates (5 and 7 per cent rates). Australian governments have traditionally favoured a discount rate of about 7 per cent because this is believed to be the approximate (marginal) rate of return available on alternative uses of capital. However, given current interest rates it is questionable whether the opportunity cost of capital is currently as high as 7 per cent.

The estimated net present value (NPV) is the sum of benefits less costs in present day terms, that is after all costs and benefits have been discounted to the present day. When the estimated NPV is positive the estimated benefits exceed the costs and the policy or project is described as efficient.

However, in determining whether a policy is desirable, the incidence of costs and benefits is generally taken into account. An efficient policy may have undesirable distributional implications. Conversely, a policy with a negative NPV may sometimes be favoured because of its desirable distributional implications.

This report provides estimates of the total benefits and costs of the proposed national standard for competencies for trainee marine pilots and the impacts on the Australian community.

5.4.1. Benefits of Option 4

This consultation information RIS seeks information from stakeholders on the impacts arising from the adoption of this standard as detailed in each option. The possible changes and impacts of option 4 on the pilotage industry are described in Table 6.

5.4.1.1 Expected number of trainee marine pilots

Option 4 will primarily impact on people seeking to obtain the skills and knowledge required to qualify for the award of a Certificate of Competency for a Trainee Marine Pilot.

Representatives of the Port Authorities in Australia, marine pilot organisations, Shipping Australia, AMSA, state regulatory bodies, the Australian Maritime Officers Union (AMOU) and AMPI, the 2 Maritime Colleges and stakeholders put forward at the Reference Group meeting (23 & 24 June 2009) that the pilotage industry had experienced about 50% reduction in marine pilots in the last 6 years. The reference group agreed that the proposed standard should be released for public comments.

Based on the information on retirement provided in Table 3, we expect about 28 marine pilots to retire by the end of 2009-2010 and 26 additional retirements by the end of 2014. As at the beginning of 2009, there was a shortage of 15 marine pilots in Australia. Based on the evidence from industry sources, we expect at least an additional 20 marine pilots per year will be required in future years. For the purpose of the analysis in this RIS, we assume the proposed standard will be complied with for at least a period of 5 years. We therefore expect the proposed standard to impact on at least 100 (20 multiply by 5) trainees since we will continue to recruit from the traditional source as well.

Table 6: The expected benefits of option 4

Expected benefits of Option 4 on the pilotage industry
It may reduce the practical training period (sea time service) and will take less time to become a trainee marine pilot by eliminating non essential elements such as cargo handling and basic watchkeeping.
It may increase employment and generate income for youth in Australian communities.
It may produce a young and energetic workforce for the pilotage industry.
It may enable marine pilots to stay in service for longer before retiring.
It may encourage competition in the recruiting process for marine pilots by making available the required number of marine pilots needed by the ports.
It is likely to increase the recruitment pool.
It may help meet the future demand for pilotage movements in all ports of Australia, including the regional ports.
It may enable mariners who are leaving the industry because they are unable to satisfy family commitments due to going to sea to remain in the industry since the new path gives them the opportunity to be trained as pilots and they can work and live together with their families.

5.4.1.2 Impacts on stakeholders

The main impacts of option 4 on stakeholders are:

1. changes in the program to become a trainee marine pilot and

2. changes in the cost and period of the program.

The draft RIS reflects the principles agreed by Commonwealth maritime agencies, states and Northern Territory that:

- The regulatory burden shall not increase overall as a result of change in existing practice;
- Legal and administrative costs of regulatory compliance should be minimised;

5.4.1.3 Changes in the program for a trainee marine pilot

For students interested in becoming a trainee marine pilot, a Bachelor of Applied Science degree programme is added as mandatory to the Diploma and Advanced Diploma in Nautical Science. Another change concerns the period of the practical training aspect of the program. With the proposed standard, it will take about 5 years to acquire the skills and knowledge required to be awarded a Statement of Program Completion-Trainee Marine Pilots and the required period for practical training is at most 12 months. Other mariners who have an interest in the pilotage industry can also join the program at any level, depending on their qualifications and practical experience.

5.4.1.4 Changes in the cost and period of the program

Under the proposed standard, an additional program, a bachelor degree has been included as a mandatory with an additional period of study time. The additional program has added cost implications. The time for academic studies has also been increased by a year, which has its consequences in terms of cost. Over all, the program under the proposed standard is considerably less time consuming than the program under the traditional approach. The most likely impact will be decreased costs associated with the minimum qualifying sea service time which was 6.5 years under the traditional system. Option 4 substantially reduces the minimum required time to between 12-15 months and these substantial decreases in the required minimum time will provide substantial cost savings.

The decreases in required sea time will enable students to finish the program at younger ages thereby creating energetic and dynamic marine pilots. These decreases are most likely to result in a timely increase in the supply of marine pilots because the extent of training and the time needed to obtain a Statement of Program Completion for a marine pilot is reduced. The costs associated with the practical training of students will be reduced to the community. However, the fact remains that the bachelor degree course added as an additional program for marine pilots has its cost implication to the community.

5.4.1.5 Indicative number of approved RTOs impacted

There are only 3 RTOs within Australia where individuals can obtain the required qualification in order to undertake a career as a marine pilot. These are:

- The Australian Maritime College (AMC) located in Launceston, Tasmania
- Challenger TAFE located in Fremantle, WA
- Hunter Institute of Technology located in Newcastle, NSW.

At present, only AMC is accredited to award a Bachelor of Applied Science Degree (Maritime operation) program. The Challenger TAFE and the Hunter Institute of Technology provide only Diploma and Advanced Diploma courses. However, the 3 institutes are most likely to be impacted to some extent by the proposed standard for competencies for trainee marine pilots.

The proposed standard will create employment and generate revenue for people at these institutions.

5.4.1.6 Impacts on operation of ships

The immediate impact of the proposed standard on the operation of ships is the ability to reduce freight costs. The proposed standard will help provide trainee marine pilots needed for day to day operations at all ports in Australia and by doing so will avoid delays of ships entering or leaving ports due to lack of marine pilots. For example if a ship is delayed in any port for various reasons for a day, depending on the types of ship, the sum of money lost ranges from \$US25,000 (\$AU31,200) to \$US37,000 (\$AU46,000). An average sum of \$US20,000 (\$AU25,000) is lost daily for ship delays into and out of port. If such delays are caused by lack of pilots at the port, with the proposed standard, these costs will be avoided and the freight cost will be reduced. If we can avoid such delays for at least 25 ships in a year, it means we are saving up to about \$AU625,000 to \$AU1,155,000 per year on freight cost. For a 5 year period we may be able to save up to about \$AU3,250,000 to \$AU5,775,000 for ship delays.

Pilot fatigue related incidents will be avoided under the proposed standard if there is evidence that such fatigue is a result of longer hours of work. In such cases, the cost of treatment of injury to people, damage to properties, investigation, search for incident victims and all other related costs will be avoided. This will result in reduction of operational costs. One estimate of the cost of marine related serious injuries is \$339,000 per hospital admission (based on road accident data). A serious injury is where a person involved in a marine incident suffers any injury requiring admission to hospital. The only difficulty is how to determine the extent to which fatigue might have contributed to the occurrence of an incident and whether the fatigue was the result of longer hours of work by the pilot. For example there were at least 12 reported marine incidents in Australia in 2007 and 5 in 2008 involving ships under pilotage. Fatigue was identified as one of the contributing factors responsible for the occurrences of some of these incidents. If we can avoid the occurrence of at least 3 serious injuries (\$AU1,197,000) in a year as a result of compliance with the proposed standard, then in 5 years time we will be able to save at least \$AU5,985,780,000 for the country. The cost of repairing ship damages that may occur during fatigue related marine incidents involving ships under pilotage will also be saved and the environment protected.

The total benefits from ship operations which can be quantified within the 5 year period will be from \$A 9,110,000 to \$AU11,760,000.

5.4.1.7 Competency structure

The expected impacts of the program under the proposed standard are shown in Table 11 (page 40). The proposed education and training is based on risk and complexity. Training time would be reduced to just less than 5 years. Some reference group members were concerned about reducing the current sea time from a minimum of 6.5 years to 6 months. In response to this concern, the reference group members increased the sea time from 6 months to between 12 to 15 months. It was also agreed that the program should be designed in such a way that the training focuses more on pilotage tasks. It was also argued that the current sea time of 6.5 years is being used to train mariners to obtain skills and knowledge for performing all varieties of tasks for different levels of positions, ranging from a Deck Officer to a Master Class 1. The pilot training program developed in this standard is a comprehensive one which has been designed to ensure that the students receive knowledge and training to be competent enough to commence training as a marine pilot in just under five years time. The program will be developed to focus on skills and knowledge which are relevant to pilotage movement, making it possible for those who complete the program to start training as marine pilots.

The costs for training trainee marine pilots are likely to reduce because it will not include courses and training which are not needed by a marine pilot. The costs of training the existing mariners who will join the program will be lower than stipulated as they have already gained some qualifications and may not be required to start the program from the beginning. A prominent benefit is a potential increase in the supply of marine pilots to meet the increased demand for pilotage movements. There could be relatively lower costs for training in certain operational areas because the level of technology of the equipment used in training students is very high. These potential reductions in costs are part of the potential benefits to be derived from the proposed standard.

The traditional pathway is unable to produce enough marine pilots to match the demand for pilotage movements in Australia. This failure has resulted in a large disparity in the distribution of marine pilots between the capital city ports and their regional counterparts. The majority of marine pilots prefer to accept job offers in the capital city ports.

Option 4 is most likely to be adopted by the Australian Maritime College, Challenger TAFE and Hunter Institute of Technology, ports and marine authorities which will lead to a uniform approach and consistency in the training and recruiting of marine pilots in all ports located in Australia.

Option 4 is an alternative pathway to become a marine pilot. This gives more open options to mariners who have an interest in becoming marine pilots to either go by the existing path or by the path envisaged in the proposed standard.

Present value of benefits (PVB) for the proposed standard for 5 year period with discount rates of 7% and 5%.

The total present value of benefits (PVB) for the proposed standard for 5 years after adjusting for discount in Table 7 ranges:

- 7% discount rate: \$AU 6.10 million to \$AU 7.87 million
- 5% discount rate: \$AU 6.81 million to \$AU 8.80 million

Table 7: Present Value of Benefits (PVB) of the Proposed Standard for 5 year Period after Adjusting for Discounts Rates

Year	Savings on Freight Cost		Savings from avoiding 3 Serious Injuries per year		Total Benefits from Ship Operations on yearly basis in \$AU Million	
	Discount Rate		Discount Rate		Discount Rate	
	5%	7%	5%	7%	5%	7%
	Range	Range	Range	Range	Range	Range
2012	514,189-950,221	476,810-881,144	984,775	913,186	1.99-1.94	1.39 -1.79
2013	489,704-904,973	445,616-823,499	937,881	853,444	1.43-1.84	1.30 -1.68
2014	466,385-861,879	416,464-769,625	893,220	797,612	1.36 -1.76	1.21-1.57
2015	444,176-820,837	389,219-719,276	850,686	745,431	1.30-1.67	1.14 -1.47
2016	423,025-781,749	363,756-672,221	810,177	696,665	1.23-1.59	1.06 -1.37
Total PVC	2,337,479-4,319,659	2,091,865-3,865,765	4,476,739	4,006,338	6.81-8.80	6.10-7.87

5.4.2. Costs of Option 4

The main costs to the community as a result of this proposed standard are the education and training costs to complete the program and the extra cost to be incurred by adding a Bachelor degree course to the program. The cost of the additional program to the community is the difference between the cost of a Bachelor Degree program and any costs saved under practical training as a result of a reduction in sea time.

5.4.2.1 Cost of education and training

The main costs to the community as a result of this proposed standard are the education and training costs to complete the program. Based on the fees charged by the Australian Maritime College in 2009, the cost of educating and training a trainee marine pilot was computed and shown in Table 8. The total cost for educating and training 100 students to obtain the skills and knowledge required to be awarded a Statement of Program Completion- Trainee Marine Pilot for 5 years ranges from \$8.06 million and \$8.31 million at 2009 current prices.

5.4.2.2 Cost of additional program

Costs are incurred by the community on the bachelor degree program which is included in the current trainee marine pilots' program. The fee for the bachelor degree program in 2009 is \$16,000 per student and there is going to be some cost savings from the reduced sea time for practical training. The total estimated cost for educating and training 100 trainee marine pilots under the traditional system (current pathway) is computed and shown in Table A3. The cost of training the 100 trainee marine pilots ranges from \$AU7 million to \$AU7.6 million under the existing pathway and from \$AU8.06 to \$8.31 under the proposed standard. This means the change in the course programme will result in an additional cost from \$AU705,000 to \$AU1,055,000 to be incurred by the community.

5.4.2.3 Cost of preparing the standard

There are no significant costs to be incurred on developing the standard as there are professionals from industry groups and jurisdictions who are voluntarily involved in developing the standard. The standard when completed will be electronically published and no significant printing cost will be associated with it. The only likely costs to be incurred are the costs involved in organising reference group meetings to discuss the queries from the public. These costs are very negligible when compared to the potential benefits of the proposed standard.

Table 8: Education and Training Costs of the Program under the Proposed Standard without taking into Account Discount

Year	Program Cost per Student under the Proposed Standard				Total cost in \$AU	
	Diploma & Advanced Diploma	Bachelor Degree	Practical Training for 15 months	Other Costs	1 Student per year	20 Students per year
					Cost Range	Cost Range
2012	50,800	16,000	3,750-6,250	10,000	80,550-83,050	1,611,000 - 1,661,000
2013	50,800	16,000	3,750-6,250	10,000	80,550-83,050	1,611,000 - 1,661,000
2014	50,800	16,000	3,750-6,250	10,000	80,550-83,050	1,611,000 - 1,661,000
2015	50,800	16,000	3,750-6,250	10,000	80,550-83,050	1,611,000 - 1,661,000
2016	50,800	16,000	3,750-6,250	10,000	80,550-83,050	1,611,000 - 1,661,000
Total Cost	254,000	80,000	18,750-31,250	50,000	402,750-415,250	8,055,000 – 8,305,000

Source: AMC Course Information and Fees Guide

Notes: Cost of Practical Training ranges from \$AU3,000-\$AU 5,000 per year per student.

Cost of Diploma consists of:

Pre sea Deck (\$AU 9400) and Deck Watchkeeper (\$AU24000)

Advanced Diploma consists of Chief Mate Master (\$AU17400)

Other costs include cost of Insurance, Uniforms, food and travel.

5.4.2.4 Cost of putting in place the new program

The new program requires a trained marine pilot to complete a Diploma and Advanced Diploma, a Bachelor of Science (Pilotage) Degree and Industry Experience. All these programs and their required units of studies already exist in the institutes. However, the Australian Maritime College needs to restructure the course offering to reflect the changes made to the traditional approach and to incorporate the degree courses. The costs associated with this are most likely not to have any significant impact because the maritime colleges regularly adjust course offerings to changes in industry circumstances. All training modules are well established in the Bachelor Science courses. Lecturers for the different units included in the program of study are already in place at the college and institutes and no new staff recruitment purposely for the new program is needed.

5.4.2.5 Cost of advertising the program to potential marine pilots

There are no significant costs to be incurred on advertising the program to potential pilots as all of the courses to be taken by students are already outlined in the course hand books of the college and the institutes. In addition, the college and the institutes normally organise information and orientation programs for potential students for all courses each year and therefore there is no advertisement solely for potential students for trainee marine pilots. There are also students who are already doing the Diploma and Advanced Diploma courses at these institutes. All that is needed is for the lecturers of the perspective units to inform the students during classes about the new program.

5.4.2.6. Transition

The transition costs associated with introducing the proposed standard are almost zero or considered to be relatively low because all the ports and pilotage organisations will continue to operate as before by managing the specific marine pilots at their disposal. The proposed standard is an alternative pathway and there are no approved plans for retrospective application of the standard to current marine pilots.

Stakeholders are very knowledgeable about the present requirements and the proposed standard because they have contributed to its development over a long period. Maritime Regulators, Port Authorities and marine pilot organisations are currently managing the traditional approach to becoming a marine pilot so transition to the proposed standard should be relatively easy and inexpensive.

There may be some additional costs incurred at the maritime college because of including a Bachelor degree course in the program. However, the time for the industry training has been reduced and this will save time and cost to compensate for the extra college costs in transitional time. Marine pilot employers will continue to incur some problems as a result of pilot shortage until the maritime colleges are in position to produce sufficient trainee marine pilots to meet the demand for pilotage movements. Marine pilot employers may also incur some administrative costs between the transition from when a mariner commences as a trainee until he or she becomes a full marine pilot.

It is possible there may be cost associated with an increased risk of accidents due to inexperienced marine pilots during the 6 month port training period. However, most of the pilot trainees are going to work under the supervision of experienced pilots till the port authorities are satisfied with their work before they can be allowed to undertake pilotage movements without supervision. This program is designed to teach trainees tasks which are needed purposely for pilotage movement and the practical training will focus mainly on the tasks involving pilotage movements.

Total Cost of the proposed standard for 100 Trainee Marine Pilots for 5 year period after adjusting for discount rates.

Education and training cost of 100 students and cost of additional programme after adjusting for discount in Table 9 ranges:

- 7% discount rate: \$AU5.86 million to \$AU6.27 million
- 5% discount rate: \$AU6.55 million to \$AU7.00 million

Table 9: Total Cost of the Proposed Standard for 5 Year Period after Adjusting for Discount Rates

Year	Cost per annum of educating and Training 30 Marine Pilots after adjusting for Discounts		Cost of additional programme		Total Cost in Million \$AU	
	Discount Rate		Discount Rate		Discount Rate	
	5%	7%	5%	7%	5%	7%
	Range	Range	Range	Range	Range	Range
2012	1.33 - 1.37	1.23 - 1.28	0.116 - 0.174	0.108 - 0.161	1.44 - 1.54	1.34 - 1.43
2013	1.26 - 1.30	1.15 - 1.85	0.111 - 0.165	0.101 - 0.150	1.37 - 1.47	1.25 - 1.35
2014	1.20 - 1.24	1.07 - 1.11	0.105 - 0.158	0.094 - 0.141	1.31 - 1.40	1.18 - 1.25
2015	1.15 - 1.80	1.00 - 1.04	0.100 - 0.150	0.088 - 0.131	1.25 - 1.33	1.09 - 1.66
2016	1.09 - 1.12	0.94 - 0.97	0.096 - 0.143	0.082 - 0.123	1.19 - 1.27	1.02 - 1.09
Total PVC	6.03 - 6.21	5.39 - 5.56	0.527 - 0.789	0.472 - 0.706	6.55 - 7.00	5.86 - 6.27

5.5. Net Present Benefits and Benefit-Cost Ratio

The regulatory impact assessment gives the view that the potential benefits of the proposed standard are greater than the potential costs. To date, the total benefits and costs of the proposed national standard are shown below:

Total Present Value of Benefits (PVB) range is:

\$A 6.10 million to \$AU7.87 million and \$AU6.81 million to \$AU8.80 million for 7% and 5% discount rates respectively.

Total Present Value of Cost (PVC) ranges are:

\$AU5.86 million to \$AU6.27 million and \$AU6.55 million to \$AU7.00 million for 7% and 5% discount rates respectively.

Net Present Benefits at:

7% discount rate is from **\$AU240,000 to \$AU1.6 million**

5% discount rate is from **\$AU260,000 to \$AU1.8 million**

The Benefit-Cost Ratio (BCR) is defined as:

BCR=PVB/PVC.

PVB (5%) = \$AU6.81 million to \$AU8.80 million, PVC (5%) = \$AU6.55 million to \$AU7.00 million.

This means that the Benefit / Cost Ratio (5%) will be calculated as:

BCR (5%) = 6.81/6.55 to 8.80/7.00= 1.04 to 1.26

PVB (7%) = \$AU 6.10 million to \$AU7.87 million, PVC (7%) = \$AU5.86 million to \$AU6.27 million.

This means that the Benefit / Cost Ratio (7%) will be calculated as:

BCR (7%) =6.10/5.86 to 7.87/6.27 = 1.04 to 1.26

The Benefit-Cost Ratio ranges from 1.04 to 1.26 for each of the discount rates, 7% and 5%. Whichever discount rate is used, the benefit-cost ratio is positive.

In addition, the overall benefits of the proposed standard are expected to be greater than those of the alternatives.

As a result, the conclusion is justified that the level of analysis of the proposed standard is commensurate with the impacts at this stage and the draft RIS is suitable for release for public comment and consultation.

5.6. Overall assessment of impacts

The options were considered in terms of their potential impact in terms of benefits, competition, net benefits and whether they could meet the objectives.

The expected impacts of all options on pilotage in Australia are outlined in Table 10. In overall, option 2 and 3 are expected to generate some benefits, but option 4 is likely to have greater benefits.

<i>Stakeholder comment is sought on which option is likely to generate greatest benefits and why?</i>

Table 10: The Expected Impacts of each Option on Pilotage in Australia

Expected Impacts on Pilotage	Options			
	Option 1	Option 2	Option 3	Option 4
Meet future demand for pilotage movements?	No	No	Possibly– all trainees may not return to Australia after program completion.	Possibly-some pilots may go to overseas and some may not be attracted to regional ports.
Recruitment pool	Declining	Declining	Potentially	Increasing
Average age of a pilot	Over 50	Over 50	Below 30	Below 30
Time taken to become a trainee marine pilot	15 yrs+	15 yrs+	5 yrs+	Below 5 yrs
Expected retirement of an average marine pilot	Next 15 yrs	Next 15 yrs	Next 30 yrs	Next 35 yrs
Is the recruiting process for marine pilots competitive?	No	No	Possible- It is likely that all trainees will not return to Australia after program completion and there will still be a shortage of pilots.	Possible
Does it create employment and income avenues for youth in Australian communities?	No	No	Potentially	Yes
Does it meet the demand of regional ports in Australia?	No	No	Possibly	Possibly

6. COMPETITIVE ASSESSMENT

6.1. COAG Principles

The COAG National Competition Principles Agreement states that regulations with significant net costs or benefits to the community should be assessed to determine that a proposal is the most effective form of government intervention to achieve a desired objective.

The impact of the standard on competition should be considered as part of an evaluation of the effectiveness of the proposal relative to the alternatives. The policy also requires that the benefits of any proposed legislation should outweigh implementation costs and that any restrictions on competition imposed by the legislation should be no more limiting than is necessary to achieve the objective.

The adoption of the national standard on competencies for trainee marine pilots will ensure competitive neutrality in the recruiting process of marine pilots as this standard provides an alternative path to become a pilot, thereby supplying the number of marine pilots to meet demand of pilotage movements at ports in Australia.

Although businesses will continue to incur the normal routine costs associated with training marine pilots, these ongoing costs will be paid back in terms of a sufficient and dynamic workforce when the pilots trained under the new system start work. Unlike the current situation where there is a shortage of marine pilots and the choice of who to employ is limited. This restricts competition in the recruitment process of marine pilots in ports. The standard will encourage competition among all ports in Australia including those located in regional areas by making available a larger pool of trainee marine pilots for recruitment.

The proposed standard will have little effect on the overall cost structure of individual organisations and port authorities involved in training of marine pilots. With this new standard, pilot employers will be able to maintain a much younger work force, unlike the present situation where the average age of a marine pilot is 52, with over two-thirds of pilots being over 60 years of age.

With regard to the training of marine pilots, there are only 3 institutions namely the Australian Maritime College, the Challenge TAFE and the Hunter Institute of Technology which are accredited by the Department of Education and Training to award maritime certificates and degrees in Australia. It is only the Australian Maritime College which is accredited to award Bachelor of Applied Science (Maritime Operation) Degrees, meaning the degree aspect of the program can only be undertaken at the Australian Maritime College. However, students can do the Diploma and Advanced Diploma courses in any of the 3 institutes.

The only costs the community will incur by complying with the proposed standard will be the college/university and training costs of the program. However, compliance costs to ports located in regional areas will be greater than the ports in the cities but not higher than costs being incurred presently through a shortage of marine pilots.

Innovation and the increased competition will result from the proposed standard as high school graduates and other mariners who have an interest in pilotage work will take advantage of the alternative pathway of becoming a trainee marine pilot. By doing so, the entry into the pilotage work is open to all and not to only mariners with Master Class 1 Certificates.

7. CONSULTATION

7.1. Reference Group

A Reference Group consisting of marine safety authorities of the states, the Northern Territory and AMSA was set up by the NMSC to assist with the development of the standard, including consideration of any public comment that may be received on the Issues Paper, draft Standard, and draft RIS.

The Reference Group first met on 23-24 June 2009 in Sydney to provide input into the National Standard on Competencies for Trainee Marine Pilots Issues Paper prior to its submission to the NMSC for approval and subsequent release for public comment.

The first draft Standard was emailed to all the members of the Reference Group who attended the two day meeting and they:

Confirmed that to the best of their recollection of memory they believed the draft standard presents a true reflection and interpretation of what transpired and was agreed upon at the meeting.

Raised no major issues that are likely to prevent the draft from being released for public comment in its current form; and

Made contributions to improve upon the quality of the standard and suggestions for questions to be raised within the draft standard for the release for public comment. Stakeholders will provide the answers.

The NMSC Project Manager had additional extensive consultation (via phone and email) with various members of the Reference Group while preparing the draft Standard. This process of consultation was used to resolve all issues and to revise the draft Standard which was approved by the NMSC on the 24 August 2009. The Reference Group agreed that the approved draft Standard should be released for public comment. The draft RIS was sent to all the jurisdictions on 4th August 2009 and each jurisdiction was given 2 weeks to advise on any jurisdiction issues which they think the RIS has not addressed. The public will be given up to a period of 2 months to comment on the draft Standard and the draft RIS.

After comments are received from the public about the draft Standard, the NMSC Project Manager will convene a meeting with the Reference Group Members to discuss the comments one by one and revise the draft Standard accordingly. The draft RIS will also be revised to reflect the changes made in the draft Standard. The Reference Group Members and the organisations they represent are shown in Table 11.

Table 11: Shows the Reference Group Representatives and organisations.

Representative	Organisation
John Watkinson (Chairman)	Maritime Safety Queensland
Chris Thompson	Maritime Safety Queensland
Roger Rusling	AMSA
Mark Eldon-Roberts	AMSA
Kushy Athureliya	Shipping Australia Limited
Rory Main	Australian Marine Pilots Association
David Hunter	NSW Maritime
John Lloyd	Australian Maritime College
Steven Pelecanos	Brisbane Marine Pilots Pty Ltd
Robin Gray	WA Maritime Training Centre
Ravi Nijjer	Marine Consulting Group Pty Ltd
Joe Rositano	Department of Transport, Energy and Infrastructure (SA)
David Heppingstone	WA Department of Planning and Infrastructure (Marine safety-EP)
David Anderson	Ports Australia
Michael Fleming	Australian Maritime Officers Union
Stuart Procton	Darwin Port Corporation
Ravi Kant, Benjamin Agbenyegah and John Henry	NMSC Secretariat

7.2. Office of Best Practice Regulation (OBPR) Clearance Letter

On 20 November 2009 the OBPR advised the NMSC in writing that it considers that the draft RIS meets the minimum requirements as set out in the Council of Australian Governments' (COAG's) Best Practice Regulation: A Guide for Ministerial Councils and National Standard Setting Bodies (October 2007) and it is suitable for release for public comment.

8. CONCLUSIONS

The issues discussed in this RIS and the results of the impact analysis suggest that option 4 is the preferred approach. This is because while option 2 and 3 may meet some of the objectives, option 4 appears to best meet the objective of this proposal.

Furthermore, it is an option which could address the current problems faced by the port authorities and pilotage movement in Australia. The conclusions reached by some stakeholders and industry representatives at the Reference Group Meeting in Sydney were also in support of the proposed standard.

Stakeholder comment is sought on which option is preferred and why?

The draft RIS at this stage of the analysis is deemed suitable for release for public comment and consultation on the preferred option.

9. IMPLEMENTATION AND REVIEW

9.1. Public consultation

The NMSC draft National Standard for Competencies for Trainee Marine Pilots is subject to public consultation. The draft standard and this draft RIS will be published on the NMSC web site. The public and other stakeholders will be notified and given the opportunity to add their input.

9.2. Approval

The draft standard will be amended as appropriate and submitted to the NMSC for approval. The standard will then be submitted to Ministers for approval in accordance with the National Framework for Marine Safety. This allows benefits to flow earlier than if the approval was delayed until the entire national standard and associated documents are completed.

9.3. Legislation

This RIS covers the regulatory proposal and the legal instrument which gives effect to it.

Jurisdictions may implement the standard through regulation or amendment to their present marine safety legislation. Alternatively, the Commonwealth may implement the standard via amendments to the Navigation Act. Refer to Table A4 for details.

The legislation in this section covers pilots under Commonwealth authority, and applying to the States and the Northern Territory. The Part 111A of the Act is Pilotage and includes

- allowing the regulations to make provision for the standards, licensing, and other conditions for pilots, including instruction, examination, suspension, and cancellation:
- the duties of a pilot and the professional relationship between a licensed pilot and the master or other officers of a ship, including provisions in relation to the professional liability of a licensed pilot and limitation of that liability:
- the penalties for being or using an unlicensed pilot: and
- the penalties for a licensed pilot being under the influence of alcohol or any other drug while on board a ship.

In Australia, the provisions of the Navigation Act paragraph 99 “Acts tending to endanger ship or life” do not apply to pilots.

However, The Navigation Act 1912 Part 111A – Pilotage 186A.(5) says

“This Part is not intended to affect the operation of any law of a State or Territory governing pilots or pilotage in relation to a port in the State or Territory.”

Marine Orders Part 54 makes the provisions provided for by the Navigation Act “for coastal pilots and, to promote the safe operation of ships under pilotage, the manner in which they are assigned or allocated to ships”. These apply to Hydrographers Passage, the inner route, and the Great North East Channel. There are no similar Marine Orders for local harbour pilots.

Neither the Uniform Shipping Laws Code (USL), nor the National Standards for Commercial Vessels (NSCV), which are the common State maritime standards, contain any reference to pilotage or pilots. However, the National Marine Safety Committee does produce the **National**

Marine Guidance Manual “Guidelines for Australian Marine Pilotage Standards”. These “have been endorsed by the Australian Transport Council (ATC) as a basis for the development of uniform Commonwealth, State and Northern Territory legislation relating to the pilotage of commercial vessels in Australia”.

9.3.1. State Legislation

New South Wales: The management of pilots is not within the Waterways portfolio but belongs to the Port Corporations of Sydney, Newcastle and Port Kembla.

Northern Territory: Pilotage regulations are under the NT Marine Act with three gazetted pilotage areas and authorities. These are Darwin Port Corporation, Alcan for the Port of Gore, and GEMCO for the Port of Alyangula.

Queensland: Pilotage regulations are under the Transport Operations (Marine Safety) Act 1994. Maritime Safety Queensland manages pilots and pilotage operations in all ports except Brisbane.

South Australia: Pilotage regulations are under the Harbours and Navigation Act. Apart from a few small ports, all the ports are under Flinders Ports which examines pilots and operates the pilotage service. Pilot licences are issued by Transport SA.

Tasmania: New Marine and Safety (Marine Operations) Regulations are under draft and include comprehensive provisions for pilots and pilotage.

Victoria: A Code of Licensing for Marine Pilots, with detailed requirements for specified ports, is used under the Marine Act 1988 and the Marine (Vessels) Regulation 1988.

Western Australia: The 8 Ports controlled by a port authority appoint their own pilots under the Port Authority Act. The Pilots for all the other 9 ports are appointed and gazetted by the marine authority, the Department for Planning and Infrastructure, under the Shipping and Pilotage Act. No pilots are actually employed by the department.

9.3.2. Review

The NMSC and jurisdictions will review the performance of the standard on an ongoing basis, along with the other sections of the NSCV. The NMSC may participate to some extent with the jurisdictions in the review of equivalent solutions to ensure that significant changes to the standard, if needed, are subject to appropriate regulatory review.

Stakeholders are welcome to bring out any issues which they think the draft RIS has not addressed and suggestions on how best to respond to the impacts the proposed standard on the community.

APPENDIXES

Appendix One

Table A1: Commercial Vessel Piloted Movements in Australian Ports for 2008

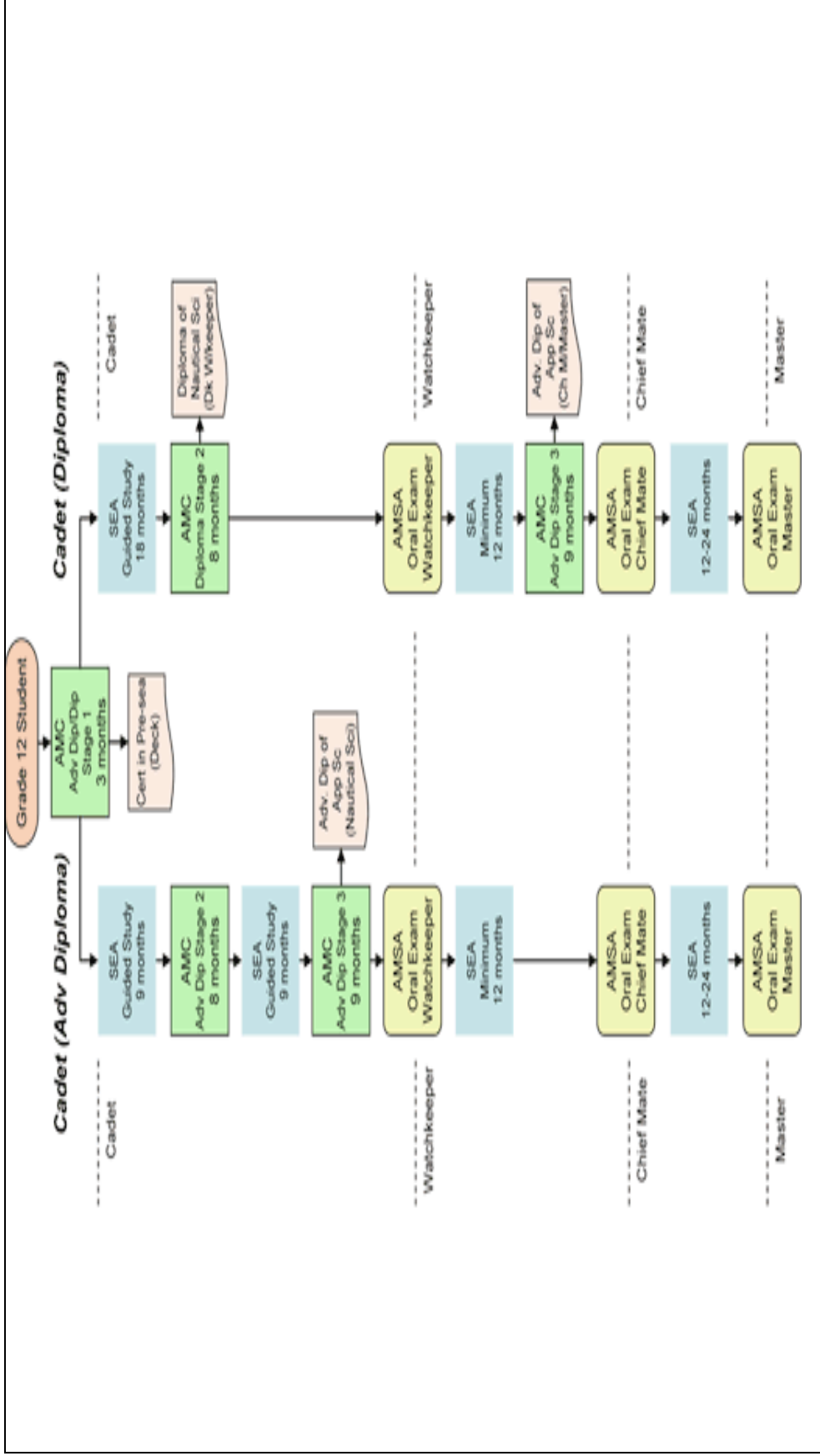
Ports	Pilotage Movements		Exemptions		Pilots	
Eden (NSW MA) (NSW)	128		6		2	
New Castle Port Corporation(NSW)	3316		95		14	
Port Kembla Port Corporation	1442		182		6	
Sydney Ports Corporation	4818		218		20	
Yamba (NSW MA)	91		7		5	
New South Wales total		9795		508		47
Geelong Port (VIC)	1185					
Port of Hastings (VIC)	290		226		8	
Melbourne Port Corporation (VIC)	5840		7266		36	
Port of Portland (VIC)	662		14		3	
Victoria total		7977		7280		47
Abbot Point (PCQ) (QLD)	354				3	
Bundaberg (QLD)	25				3	
Brisbane Port Corporation (QLD)	5704				39	
Cairns Port Authority (QLD)	637				13	
Cape Flattery (PCQ) (QLD)	81					
CQPA (Port of Gladstone) (QLD)	3220				23	
Hay Point (PCQ) (QLD)	2020					
Karumba (PCQ) (QLD)	54					
Lucinda (PCQ) (QLD)	33					

Ports	Pilotage Movements		Exemptions		Pilots	
Mackay Port Authority (QLD)	365				13	
Mourilyan (PCQ) (QLD)	59					
Port Alma (QLD)	155					
Quintell Beach (PCQ) (QLD)	0					
CQPA (Rockhampton Ports) (QLD)	0					
Townsville Port Authority (QLD)	1473				9	
Weipa (PCQ) (QLD)	783					
Thursday Island (PCQ) (QLD)	97					
Skardon River (PCQ) (QLD)	0					
Queensland total		15060		4042		97
Port Adelaide (Flinders) (SA)	1692				8	
Klein Point (SA)	-		600			
Port Giles (Flinders) (SA)	32					
Port Lincoln (Flinders) (SA)	168				4	
Port Pirie (Flinders) (SA)	134					
Thevenard (Flinders) (SA)	188					
Wallaroo (Flinders) (SA)	54					
Ardrossan (SA)	74					
Port Bonython (SA)	60					
Whyalla & Whyalla (SPN) (SA)	214					
South Australia total		2616		600		12
Albany Port Authority (WA)	328				1	
Broome Port Authority (WA)	515		62		6	
Bunbury Port Authority (WA)	756		26		3	

Ports	Pilotage Movements		Exemptions		Pilots	
Dampier Port Authority (WA)	8068		180		12	
Esperance Port Authority (WA)	384				3	
Fremantle Port Authority (WA)	3668				14	
Geraldton Port Authority (WA)	636				4	
Port Hedland Port Authority (WA)	2296		6		11	
Western Australia total		16651		274	9	63
Burnie (TasPorts Pty Ltd) (TAS)	382		714			
Devonport (TasPorts Pty Ltd) (TAS)	222		1482			
Hobart (TasPorts Pty Ltd) (TAS)	486		32			
Bell Bay (TasPorts Pty Ltd) (TAS)	582		266			
Tasmania total		1672		2494		10
Darwin Port Corporation (NT)	1507		591		3	
Northern Territory total		1507		591		3
Australia Total		55278		15789		279

APPENDIX TWO

Figure A1: Deck Officer Pathways



APPENDIX THREE

Table A2: Short Courses

Program Part	Short Course	Required / Not Required
Part 1-1	Fire Prevention and Fire Fighting – Basic Fire STCW Table A-VI/1-2	Required (For seagoing purposes)
Pre Sea	Personal Survival Techniques - STCW Table A-VI/1-1	Required (For seagoing purposes)
	Elementary 1 st Aid – Similar to Senior 1 st Aid ashore STCW Table A-VI/1-3	Required (For seagoing purposes)
	Personal Safety and Social Responsibility – STCW Table A-VI/1-4	Required (For seagoing purposes)
	Tanker Familiarisation STCW Table A-V/1 paras 1-7	Required
	Marine Radio Operator Certificate of Proficiency - MROCP	Licensing requirement for personnel operating marine HF and VHF radio – recommend VHF version
	VHF Marine Radio Operator Certificate of Proficiency - VROCP	Licensing requirement for personnel operating marine VHF radio
Part 1 – 2	Advanced Fire Fighting - STCW Table A-VI/3	Not required (Command and Control)
Complete Diploma to Deck Watchkeeper	Proficiency in Survival Craft STCW Table A-VI/2-1	Not required (PST sufficient)
	GMDSS	Not required – VHF Radio Cert should be sufficient
	Medical 1 st Aid	Not required – EFA sufficient

	ARPA	Required
	Bridge Watchkeeping simulation program	Required part of the diploma
	Command Navigation – Master <500GT (Includes Mate <3000GT) simulation program	Recommend option
Part 2	Medical Care for Shipmasters	Not required
Advanced Diploma	BRM	Required
Shipmaster	Command Navigation (Unlimited)	Required
Other Programs	Petroleum Tanker Safety	Optional
	Gas Tanker Safety	Optional
	Ship Security Officer	Optional
	Port Security Officer	Optional – ISPS Security Familiarisation in Part 1-1

(Information on short courses was supplied by R Gray, Challenger TAFE-WA).

APPENDIX FOUR

Table A3: Educational and Training Costs of the Programme under the Traditional (Existing) Pathway without taking into Account Discount Rates

Year	Cost of Education and Training per Student under the Traditional (Existing) Pathway					Total Cost in Australian Dollars(\$AU)	
	Diploma	Advanced Diploma	Practical Costs for 48 months	Training Costs	Other Costs	1 Student	30 Students
						Cost Range	Cost Range
2014	33,400	17400	12,000-18,000	7,200	7,200	70,000-76,000	1,400,000 - 1,520,000
2015	33,400	17400	12,000-18,000	7,200	7,200	70,000-76,000	1,400,000 - 1,520,000
2016	33,400	17400	12,000-18,000	7,200	7,200	70,000-76,000	1,400,000 - 1,520,000
2017	33,400	17400	12,000-18,000	7,200	7,200	70,000-76,000	1,400,000 - 1,520,000
2018	33,400	17400	12,000-18,000	7,200	7,200	70,000-76,000	1,400,000 - 1,520,000
Total	167,000	87,000	60,000-90,000	36,000	36,000	350,000-380,000	7,000,000 – 7,600,000

Source: AMC Course Information and Fees Guide

NB: Cost of Diploma consists of Pre sea Deck (\$AU 9,400) and Deck Watchkeeper (\$AU24,000)

Advanced Diploma consists of Chief Mate Master (\$AU17,400)

Other costs include cost of Insurance, Uniforms, food and travel.

Practical Training cost is from \$3,000 to \$5,000 per year.

APPENDIX FIVE

Table A4: Pilot and Harbourmaster Licence and Legislation

	Northern Territory
Formal Name of Licence	Pilotage licence
Common Name of Licence	In NT there are 3 pilotage authorities - Darwin port, Groote and Gove - who are authorised to appoint and manage pilots.
Legislation	<i>Marine Act</i> <i>Marine (Pilotage) Regulations</i>
Licence Scope	<p>"Pilot", in relation to a ship, means a person not belonging to the ship who as lawful conduct of the ship.</p> <p>SECT 170</p> <p>Application for pilotage licence or exemption certificate</p> <p>170. Application for pilotage licence or exemption certificate</p> <p>(1) A person may apply in writing to a pilotage authority for a pilotage licence or pilotage exemption certificate in respect of an area for which it is the pilotage authority.</p> <p>(2) An application for renewal of a pilotage licence or pilotage exemption certificate may be made in the same manner as the original application was made.</p> <p>SECT 7</p> <p>7. Application for pilotage licence</p> <p>(1) A person may apply to a pilotage authority for the issue of a pilotage licence in respect of the pilotage area for which it is the authority.</p> <p>(2) An application for a pilotage licence shall -</p> <p>(a) contain -</p> <p>(i) the name and address of the applicant;</p> <p>(ii) particulars of any certificate held by the applicant;</p> <p>(iii) particulars of any relevant qualifications held by the applicant; and</p> <p>(iv) details of the relevant service of the applicant; and</p> <p>(b) be accompanied by evidence as to the age, competency, experience, skill, character and medical fitness of the applicant.</p> <p><i>(Marine (Pilotage) Regulations)</i></p>

Skill Based Eligibility Requirements	<p>8. Issue and renewal of licence</p> <p>(1) Where a pilotage authority is satisfied as to the suitability, competency, fitness and skill of an applicant for a pilotage licence, it must, upon payment of the prescribed fee, issue to the applicant a pilotage licence.</p>
Non Skill Based Eligibility Requirements	
Number on issue	Unknown
	Tasmania
No. of mutual recognition applications	Unknown
Formal Name of Licence	Pilot's Licence
Common Name of Licence	Pilot Licence
Legislation	<p>Marine and Safety Authority Act 1997</p> <p>Marine and Safety (Pilotage and Navigation) Regulations 2007</p>
Licence Scope	<p>3. Interpretation (extract)</p> <p>"Pilot" means a person who holds a pilot's licence</p> <p>(4) In this regulation –</p> <p>"pilotage act" means the passage by a vessel under the direction of a pilot</p>
Skill Based Eligibility Requirements	<p>(1) An applicant for a pilot's licence –</p> <p>(a) must –</p> <p>(i) hold a valid certificate of competency as an Australian Master Class I issued by AMSA; or</p> <p>(ii) hold a valid certificate, equivalent to the one specified in subparagraph (i) issued by an approved competent authority that is party to the International Convention on Standards of Training, Certification and Watchkeeping of Seafarers 1995; or</p> <p>(iii) have other approved experience and qualifications; and</p> <p>(b) must –</p> <p>(i) for at least 12 months immediately before lodging the application, have served in a capacity of not less than first mate on a vessel required to carry at</p>

	<p>least 2 mates; or</p> <p>(ii) hold a pilot's licence issued by an approved competent authority that is party to the International Convention on Standards of Training, Certification and Watchkeeping of Seafarers 1995 and, for at least 12 months immediately before lodging the application, have been actively engaged in piloting; and</p> <p>(c) must demonstrate an ability to speak English to a standard that would allow the applicant to safely discharge the duties and responsibilities of a pilot; and</p> <p>(2) Before MAST grants an application for a pilot's licence, the applicant must undertake any voyages and training and pass any examinations MAST, in consultation with the relevant port operator, requires.</p>
Non Skill Based Eligibility Requirements	<p>(1) An applicant for a pilot's licence</p> <p>.....</p> <p>(d) must produce a medical certificate that meets the standards specified in the Medical Health and Fitness Order.</p> <p>.....</p>
Number on issue	12
No. of mutual recognition applications	<p>Nil – a pilot licence is a licence attesting that a person has local knowledge in a particular pilotage area. They are not mutually recognised by the nature of their local knowledge content – ie, the scope of work is location specific – hence no prospect of Mutual Recognition applying.</p>
Formal Name of Licence	Pilot's Licence
Common Name of Licence	Pilot Licence
Legislation	<i>Harbors and Navigation Act 1993</i>
Licence Scope	<p>4—Interpretation</p> <p>In this Act, unless the contrary intention appears—</p> <p>...</p> <p>Pilot means a person, who although not a member of a vessel's crew, temporarily takes control (subject however to the master's overriding authority) of the vessel's navigation;</p>
Skill Based Eligibility Requirements	<p>46—Licensing of pilots: section 33</p> <p>To be licensed as a pilot a person must.</p> <p>a) hold a Master Class 1 certificate of competency issued by the marine authority of the Commonwealth or a qualification under the law of some other place recognised under the Commonwealth Act as equivalent to such a certificate of competency; and</p>

	<p>b) have had extensive experience in operating vessels in the harbor in respect of which the application is made of a nature that demonstrates, in the opinion of the CEO, that the applicant has developed a sound practical knowledge of the harbor and traffic in the harbor; and</p> <p>c).....</p> <p>d) satisfactorily pass an examination set by the CEO that examines whether the applicant.</p> <p style="padding-left: 40px;">(i) has a sound knowledge of the harbor in respect of which the application is made, and, in particular, of the soundings, minimum keel clearances, tides and currents, buoys, beacons, lights and signals of or within the harbor and the approaches to the harbor; and</p> <p style="padding-left: 40px;">(ii) has a sound knowledge of the law applying generally to harbors and of the law applying to the particular harbor in respect of which the application is made; and</p> <p style="padding-left: 40px;">(iii) has a sound knowledge of the traffic control practices, traffic patterns, and signals, rules and communications, applying in the harbor;</p> <p>e).....</p> <p><i>(Harbors and Navigation Regulation 1994)</i></p>
<p>Non Skill Based Eligibility Requirements</p>	<p>46—Licensing of pilots: section 33</p> <p>.....</p> <p>(c) be a fit and proper person to hold a licence;</p> <p>.....</p> <p>(e) comply with the following eyesight standards:</p> <p style="padding-left: 40px;">(i) in the case of an applicant who does not use corrective lenses. the applicant must be able to read without the aid of corrective lenses all letters on the fifth line of a letter card based on Snellen’s principle;</p> <p style="padding-left: 40px;">and</p> <p style="padding-left: 40px;">(ii) in the case of an applicant who uses corrective lenses.</p> <p style="padding-left: 80px;">(A) the applicant must be able to read with the aid of corrective lenses all letters on the sixth line of the letter card based on Snellen’s principle and read without the aid of corrective lenses all letters on the fourth line of the card; and</p> <p style="padding-left: 80px;">(B) the sight in the applicant’s better eye must not be worse than 6/6 on the basis of Snellen’s principle; and</p> <p style="padding-left: 40px;">(iii) in the case of all applicants. the applicant must not suffer from a progressive eye disorder; and</p> <p>(f) if the CEO so requires satisfactorily pass an examination set by the CEO to examine whether the applicant can easily distinguish variously coloured lanterns; and</p> <p>(g) comply with the following medical standards: the applicant must not suffer</p>

	<p>any mental or physical impairment that may affect his or her ability to perform the duties of a pilot</p> <p>(Harbors and Navigation Regulation 1994)</p>
Number on issue	0
No. of mutual recognition applications	0
Formal Name of Licence	Pilot Licence
Common Name of Licence	
Legislation	<p><i>Shipping and Pilotage Act 1967</i></p> <p><i>Ports and Harbours Regulations 1966</i></p>
Licence Scope	<p>Pilots provide pilotage services within prescribed pilotage areas. Unless the master of a vessel is exempt, they must use the services of a pilot to navigate within a prescribed pilotage area.</p>
Skill Based Eligibility Requirements	<p>Pilots are currently appointed by the Governor under section of the Act. Accordingly, there is no pilots licence as such. Accordingly, the appointment of pilots under the current Act is not considered to be subject to the <i>Mutual Recognition Act 1992</i>.</p> <p>However, the <i>Shipping and Pilotage Act 1967</i> has been amended (by the <i>Shipping and Pilotage Amendment Act 2006</i>) and the amending Act only needs to be proclaimed before it becomes law. The subsidiary legislation to the S & P Act (Regulations) that are required to support the amendments are currently being developed.</p> <p>The amendments, when proclaimed, will allow the Director General to issue Pilot licences for specified pilotage areas. The regulations will contain the eligibility requirements for the issue of pilot licences.</p>
Non Skill Based Eligibility Requirements	<p>See above – it is anticipated that the medical fitness eligibility requirements for pilot licences will reflect the requirements in AMSA Marine Order 9.</p>
Number on issue	N/A.
No. of mutual recognition applications	<p>N/A</p> <p>DPI is NOT able to recognise any other Pilots from other Ports or States as the Pilot role is an appointment not a licence or Certificate of Competency. The experience gained as a Pilot in other Ports or States will go towards the evaluation of whether an applicant can be appointed. Due to the particulars of</p>

	a Pilots and the port in which they operate a pilot CANNOT change from port to port without undertaking comprehensive in-house training.
Formal Name of Licence	Harbour Master
Common Name of Licence	Harbour Master
Legislation	<i>Shipping and Pilotage Act 1967</i> <i>Ports and Harbours Regulations 1966</i>
Licence Scope	“harbour master” means a harbour master appointed under section 4 of the Act for any port and includes a person for the time being carrying out the duties of that harbour master during any absence, illness or incapacity of that harbour master;
Skill Based Eligibility Requirements	<p>Harbour masters are currently appointed by the Governor under section of the Act - there is no harbour master’s licence as such. Accordingly, the appointment of harbour master under the current Act is not considered to be subject to the <i>Mutual Recognition Act 1992</i>.</p> <p>The <i>Shipping and Pilotage Act 1967</i> has been amended (by the <i>Shipping and Pilotage Amendment Act 2006</i>) and the amending Act only needs to be proclaimed before it becomes law. The subsidiary legislation to the S & P Act (Regulations) that are required to support the amendments are currently being developed.</p> <p>The amendments, when proclaimed, will allow the Minister to appoint a Harbour masters on their merit and experience. The appointment of Harbour master under the amended Act is not considered to be subject to the <i>Mutual Recognition Act 1992</i>.</p> <p>It is anticipated that the regulations will specify the eligibility criteria as requiring a Master Class 1 or equivalent and experience operating a Port or as a Harbour master.</p>
Non Skill Based Eligibility Requirements	See above – it is anticipated that the medical fitness eligibility requirements for Harbour master licences will reflect the requirements in AMSA Marine Order 9.
Number on issue	N/A
No. of mutual recognition applications	<p>N/A</p> <p>DPI is NOT able to mutually recognise any other Harbour masters from other Ports or States as the Harbour master role is an appointment not a licence or Certificate of Competency.</p> <p>The experience gained as Harbour master in other Ports or States will go towards the evaluation of whether an applicant can be appointed.</p>

Formal Name of Licence	Pilot Licence	
Common Name of Licence	Pilot	
Legislation	<i>Transport Operations (Marine Safety) Act 1994</i>	<i>Transport Operations (Marine Safety) Regulation 2004</i>
Licence Scope		
Skill Based Eligibility Requirements	<p>101 Qualifications for licence as ship's pilot</p> <p>The general manager may grant an application for a licence to have the conduct of a ship as its pilot in a pilotage area, or part of a pilotage area, only if the applicant satisfies the general manager—</p> <p>(a) the applicant has either—</p> <p style="padding-left: 40px;">(i) a licence to operate a ship as its master of a class appropriate for the ships (piloted ships) the person would have the conduct of as pilot in the pilotage area; or</p> <p style="padding-left: 40px;">(ii) skills and experience that in the opinion of the general manager are equivalent to the skills and experience of a person holding a licence mentioned in subparagraph (i); and</p> <p>(b) the applicant has—</p> <p style="padding-left: 40px;">(i) appropriate ship handling ability to have the conduct of the piloted ships as its pilot; and</p> <p style="padding-left: 40px;">(ii) a detailed knowledge of the pilotage area, or the part of the pilotage area, for which the licence is sought.</p>	
Non Skill Based Eligibility Requirements	Nil	
Number on issue	230	
No. of mutual recognition applications	Statistics are not available.	
Formal Name of Licence	Harbour Master	
Common Name of Licence		
Legislation	<i>Transport Operations (Marine Safety) Act 1994</i>	

	<i>Transport Operations (Marine Safety) Regulation 2004</i>
Licence Scope	
Skill Based Eligibility Requirements	<p>75 Only qualified persons may be appointed as harbour masters</p> <p>The chief executive may appoint a person to be a harbour master only if—</p> <ul style="list-style-type: none"> a) in the chief executive’s opinion, the person has the necessary expertise or experience to be a harbour master and shipping inspector; or b) the person has satisfactorily finished training approved by the chief executive.
Non Skill Based Eligibility Requirements	Nil
Number on issue	
No. of mutual recognition applications	
Formal Name of Licence	Pilot Licence
Common Name of Licence	Pilot Licence
Legislation	<p><i>Marine Act 1988</i></p> <p><i>Marine Regulation 1999</i></p>
Licence Scope	<p>Pilot means a person who is licensed as a pilot under the regulations;</p> <p>Pilotage services means—</p> <ul style="list-style-type: none"> (a) the service of providing a pilot to navigate a vessel within, or into or out of, port waters; or (b) the service of providing transport and transfer of a pilot to and from a vessel for which services under paragraph (a) are required; or (c) both of the services referred to in paragraphs (a) and (b); <p>Pilotage services provider means a person registered by the Director under Part 3B to provide pilotage services;</p> <p>26K Registration as a pilotage service provider</p> <p>The Director, on receiving a notice from a person under section 26J and the fee specified in that section, must register the person as a pilotage services provider.</p>

	(Marine Act 1988)
Skill Based Eligibility Requirements	<p>312. Pilot licence or pilot exemption</p> <ol style="list-style-type: none"> 1) An application for a pilot licence or pilot exemption may be made to the Director. 2) An application must be— <ol style="list-style-type: none"> (a) in the form determined by the Director; and (b) accompanied by— <ol style="list-style-type: none"> i. evidence of the qualifications which the applicant claims entitle him or her to a pilot licence or pilot exemption; and <p>.....</p> <p>(Marine Regulations 1999)</p>
Non Skill Based Eligibility Requirements	<p>312. Pilot licence or pilot exemption</p> <p>.....</p> <p>(ii) the prescribed fee.</p>
Number on issue	31
No. of mutual recognition applications	N/A
Formal Name of Licence	Harbour Master Licence
Common Name of Licence	
Legislation	<p><i>Marine Act 1988</i></p> <p><i>Marine Regulation 1999</i></p>
Licence Scope	<p>Harbour master includes any person authorised under section 26B to exercise any of the functions of the harbour master, if the person so authorised is acting in accordance with the authorisation;</p> <p>Harbour master licence means a licence issued by the Director under section 26HD;</p> <p>Licensed harbour master means a person who is the holder of a harbour master licence;</p> <p>26HD Issue of harbour master licences</p> <p>The Director may issue a licence to a person that authorises that the person is a person who is capable of performing those functions of a</p>

	<p>harbour master that are specified in the licence in the State waters that are specified in the licence.</p> <p>26HE Imposition or variation of conditions on harbour master licences;</p> <p>(1) The Director may, after first consulting with the person or body who has engaged a harbour master, impose a condition on the licence of that harbour master at any time during the course of the licence.</p> <p>(2) The Director may, after first consulting with the person or body who engaged a harbour master, vary a condition on the licence of that harbour master that has been imposed under subsection (1).</p> <p>(Marine Act 1988)</p>
<p>Skill Based Eligibility Requirements</p>	<p>319. Harbour master licence</p> <p>1) A person may apply to the Director for the issue, variation or renewal of a harbour master licence.</p> <p>2) he application must—</p> <p>...</p> <p>(a) specify the area of State waters for which the licence is required; and</p> <p>(b) be accompanied by evidence that the applicant has a valid current certificate of competence as a Master Class 1 or equivalent as the Director may direct; and</p> <p>(c) be accompanied by evidence of sufficient qualifying service and experience appropriate to the State or port waters to which the harbour master licence will apply;</p> <p>4.1 Qualification</p> <p>4.1.1 The qualification required provides evidence as to the applicant's competency, ability and experience to make such decisions in respect of the port waters or State waters for which the licence is issued, under both normal operational and emergency conditions.</p> <p>4.1.2 The applicant shall possess appropriate certification as Master Class 1 or a similar qualification acceptable to the Director, or such other qualification or experience as the Director may direct.</p> <p>4.1.3 Any person to whom all the powers and functions of a harbour master are delegated must meet the same qualification requirements as those for the harbour master.</p> <p>4.1.4 Limited powers and functions may be delegated by a licensed harbour master to persons holding lesser qualifications after approval of the Director has been sought and granted.</p> <p>4.2 Fitness and Character</p> <p>4.2.1 Harbour masters are accountable to the Director for the exercise of statutory functions, and to his or her employer for the exercise of port operations. In view of the associated responsibility of the employer to provide a licensed harbour master, and that the Director is clearly</p>

	<p>responding to licensing a person chosen by the channel operator, local port manager or waterway manager (as applicable), the Director sees application for licensing as a joint responsibility of applicant and employer. Supporting documentation is accordingly required from the channel operator, local port manager or waterway manager (as applicable), to attest to the fitness and character of the applicant.</p> <p>4.2.2 In order to be granted a licence, the applicant will be required to be a fit and proper person, having regard to the functions to be exercised and the powers prescribed by the Act.</p> <p>4.3 Training</p> <p>4.3.1 It is a condition of licensing that the channel operator, local port manager or waterway manager (as applicable) provides suitable training to the applicant from time to time, in a form required by the Director, to ensure that functions of the harbour master conferred by the Act or the Director may be performed adequately, and powers can be exercised properly.</p> <p>4.3.2 The Director requires a proposal from the channel operator, local port manager or waterway manager (as applicable) as to the most appropriate form of training to ensure that the harbour master is kept abreast of new technology, environmental issues, legislative changes and requirements, and any other matter relating to the performance of the role of a harbour master.</p> <p><i>(Marine Regulation 1999)</i></p>
Non Skill Based Eligibility Requirements	N/A
Number on issue	1
No. of mutual recognition applications	N/A
	NSW
Formal Name of Licence	Pilot Licence
Common Name of Licence	Marine Pilot Licence
Legislation	<p><i>Maritime Safety Act 1988</i></p> <p><i>Marine Pilotage Licensing Act 1971 No 56</i></p> <p><i>Marine Pilotage Licensing Regulations</i></p> <p><i>Marine Safety Regulation 2003</i></p>

<p>Licence Scope</p>	<p>71 Definitions</p> <p>(1) In this Part:</p> <p>Pilotage means the conduct of a vessel by a pilot as follows:</p> <ul style="list-style-type: none"> (a) inward pilotage, that is, the pilotage of a vessel entering into a pilotage port, (b) outward pilotage, that is, the pilotage of a vessel leaving a pilotage port, (c) harbour pilotage, that is, the pilotage of a vessel being moved within a pilotage port. <p>Pilotage port means (subject to subsection (2)) any of the following ports:</p> <ul style="list-style-type: none"> (a) Sydney Harbour, (b) Botany Bay, (c) Newcastle, (d) Port Kembla, (e) Yamba, (f) Eden. <p>Pilotage service provider means:</p> <ul style="list-style-type: none"> (a) in relation to pilotage services provided by a Port Corporation under an operating licence under Division 3 of Part 2 of the <u>Ports and Maritime Administration Act 1995</u>—the Port Corporation (and, if those services are provided by way of a subsidiary, includes the subsidiary), or (b) in relation to pilotage services provided by a contractor under a contract under section 26A of the <u>Ports and Maritime Administration Act 1995</u>—the contractor, or in relation to any other pilotage services—the Minister. <p>Pilot means a person licensed under section 7 to conduct ships to which the person does not belong.</p> <p>Pilot’s licence means a licence issued under the Act to a person to conduct ships to which he does not belong.</p>
<p>Skill Based Eligibility Requirements</p>	<p><i>Fourth Schedule Service requirements for a first-class pilot’s licence (Regulation 21 (2) (b))</i></p> <p>1 An applicant for a first-class pilot’s licence must, during the 4 years immediately preceding the application, have served as either:</p> <ul style="list-style-type: none"> (a) master of a sea-going trading vessel (required to carry at least 1 mate) for a total period of at least 12 months, or (b) master of a sea-going trading vessel (required to carry at least 1 mate) for a total of at least 6 months and chief mate of a sea-going trading vessel (required to carry at least 3 mates) for a total of at least 12 months. <p>2 If the applicant has served as master for more than 6 months but less than 12 months, the balance of the service required under clause 1 (b) may be</p>

rendered as chief mate accruable at half the rate of time served as master.

Fifth Schedule Service requirements for a second-class pilot's licence

(Regulation 21 (3) (b))

Service during either:

- (a) a period of not more than three years immediately preceding the granting of such licence, or
- (b) in the case of an applicant who is in the service of the Director-General, a period of not more than three years immediately preceding his entering the service of the Director-General,

as master of a vessel which is required by law to be under the command of a master holding a certificate not lower than that prescribed by regulation 21 (3)(a).

(2) Every applicant for a **first-class pilot's licence** is required to satisfy the requirements of clause (1) and in addition must produce evidence satisfactory to the Director-General:

- (a) that the applicant has held a certificate as Master Class 1 (Unlimited) for a period of at least 5 years, and
- (b) that the applicant has fulfilled the requirements prescribed in the Fourth Schedule.

(3) Every applicant for a **second-class pilot's licence** shall, in addition to the requirements of clause (1):

- (a) hold and produce a certificate as master which authorises him to take charge of a seagoing ship registered in Australia,
- (b) produce satisfactory evidence of having fulfilled the service requirements set out in the Fifth Schedule, and
- (c) (Repealed)

(4) Every applicant for a pilot's licence who has satisfied the requirements of clause (1) and also, as the case may require, the requirements of clause (2) or clause (3) shall, in respect of each port for which he has applied for such licence, attend as the Director-General may require before an Examining Authority consisting of one or more officers appointed by the Director-General and shall in respect of each such port obtain the certificate of such Authority that it has been satisfied, by:

- (a) the production of such evidence,
- (b) the undergoing of such practical tests,
- (c) the accompanying of an experienced pilot during the pilotage of ships for such period, and
- (d) the answering of such questions relating to local knowledge of the port concerned and the handling of ships in a port,

as it has considered appropriate that the applicant is, subject to such restrictions as it may state in its certificate, capable of performing the functions of a pilot in respect of such port.

<p>Non Skill Based Eligibility Requirements</p>	<p>21 Issue of licences</p> <p>(1) Every applicant for a pilot's licence must:</p> <ul style="list-style-type: none"> (a) either hold a pilotage exemption certificate for an Australian port approved by the Director-General or have been issued with a certificate of capacity referred to in Regulation 35 (7) for the port in respect of which the application is made, and (b) produce evidence satisfactory to the Director-General that the applicant is, having regard to the matters prescribed in the Eighth Schedule, in good health and is physically capable of the navigation of a ship in the port in respect of which the application is made, and (c) produce evidence satisfactory to the Director-General that the applicant has passed the eyesight test prescribed in the Sixth Schedule and indicating whether the test was undertaken with any artificial aid, and (d) pay a fee of \$400. <p>25 Physical fitness of pilots</p> <p>(1)</p> <p>(a) In this clause:</p> <ul style="list-style-type: none"> - tested aid means an artificial aid used by a pilot in successfully undergoing an eyesight test prescribed by regulation 21 or by this regulation, and - substitute aid means an artificial aid prescribed for a pilot by a medical practitioner in substitution for a tested aid, with the use of which the pilot has familiarised himself to the satisfaction of a medical practitioner.
<p>Number on issue</p>	<p>Regulator to advise.</p>
<p>No. of mutual recognition applications</p>	<p>Regulator to advise.</p>
<p>Formal Name of Licence</p>	<p>Harbour Master</p>
<p>Common Name of Licence</p>	
<p>Legislation</p>	<p><i>Maritime Safety Act 1988</i></p> <p><i>Marine Safety Regulation 2003</i></p>
<p>Licence Scope</p>	<p>Harbour master means a person appointed as harbour master under Part 7 and, in relation to a function of a harbour master under the marine legislation, includes a person appointed under Part 7 to exercise that function.</p> <p><i>84 Definition of "port"</i></p> <p>In this Part, port includes any particular area of navigable waters that the</p>

	<p>Minister considers requires a harbour master for the purposes of marine safety.</p> <p><i>85 Appointment of harbour masters</i></p> <ul style="list-style-type: none"> (b) The Minister may appoint a Departmental officer to be the harbour master for any port. (c) The Minister may appoint a member of the staff of a Port Corporation to be the harbour master for any port. (d) Two or more persons cannot be appointed as harbour masters for the same port. (e) The Minister may revoke the appointment of a harbour master at any time. (f) A person ceases to be a harbour master on ceasing to be a Departmental officer or a member of the staff of a Port Corporation, as the case requires. (g) In this section, Departmental officer means: <ul style="list-style-type: none"> (a) a member of the staff of any Department administered by the Minister, or (b) a member of the staff of the Maritime Authority. <p><i>87 General functions of harbour master</i></p> <ul style="list-style-type: none"> 1) A harbour master has, in relation to the port for which he or she is the harbour master, such functions as are conferred by the marine legislation. 2) The functions of a harbour master may be limited by regulation or by the Minister (in and by the instrument of appointment or by a subsequent instrument given to the harbour master). 3) The exercise of the functions of a harbour master are subject to any directions given from time to time to the harbour master by the Minister.
<p>Skill Based Eligibility Requirements</p>	
<p>Non Skill Based Eligibility Requirements</p>	<p>30 Grant of licences</p> <ul style="list-style-type: none"> 1) Marine safety licences are to be granted by the Minister. 2) The Minister may approve or refuse applications for marine safety licences in accordance with this Act and the regulations. <p>85 Appointment of harbour masters</p> <ul style="list-style-type: none"> 1) The Minister may appoint a Departmental officer to be the harbour master for any port. 2) The Minister may appoint a member of the staff of a Port Corporation to be the harbour master for any port.

	<p>3) Two or more persons cannot be appointed as harbour masters for the same port.</p> <p>4) The Minister may revoke the appointment of a harbour master at any time.</p> <p>5) A person ceases to be a harbour master on ceasing to be a Departmental officer or a member of the staff of a Port Corporation, as the case requires.</p> <p>6) In this section, Departmental officer means:</p> <p style="padding-left: 40px;">(a) a member of the staff of any Department administered by the Minister, or</p> <p style="padding-left: 40px;">(b) a member of the staff of the Maritime Authority.</p> <p>86 Appointment of persons to exercise functions of harbour masters</p> <p>1) A harbour master may appoint any person to exercise, in relation to the port for which he or she is the harbour master, the harbour master's functions under the marine legislation. The power to make an appointment under this section is subject to any directions given to the harbour master by the Minister.</p> <p>2) An appointment under this section may be general or may apply only to the exercise of such functions as are specified in the instrument of appointment.</p> <p>3) A person appointed under this section has all the functions specified in the instrument of appointment.</p> <p>4) The appointment under this section of a person to exercise any of the functions of a harbour master does not prevent that harbour master from exercising those functions.</p> <p>5) The Minister may also appoint a person to exercise the functions of a harbour master under the marine legislation in relation to a port (whether or not a harbour master has been appointed for the port).</p>
Number on issue	Regulator to advise.
No. of mutual recognition applications	Regulator to advise.