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Between the red and yellow flags

The social and economic value of Surf Life Saving Australia

August 2020

Deloitte Access Economics


SURF RESCUE
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Social and economic value of **Surf Life Saving Australia**

Patrolling Australian beaches

43,092
volunteer surf lifesavers patrolling beaches around the country in 2018-19

1.3 million+
total volunteer **patrol hours**

SLSA training and emp

924
jobs for SLSA members

11,0
average
who **cor**
the first

SLSA training provides skills that are rele
For members who completed an award, 25
assisted them to gain empl

Actions performed by lifesavers and lifeguards

10,176
rescues performed during beach patrols

1.5 million+
preventative actions were performed in 2018-19

The impact of lifesaving skills in the community

96,000+
SLSA members and members of the Australian community receive **CPR training** for the first time each year

294,855
hours of **life saved**

The

The total net benefit of Surf Life Saving Australia to the Australian community is $97 billion over 15 years

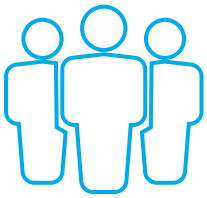
ployment

000+

number of SLSA members
mpleted an award for
time each year

evant to employment.
% believed their training
oyment.

Supporting a culture of volunteering



170,000+
members and **314 affiliated Surf Life Saving clubs** across Australia in 2018-19

14 million+
hours of **volunteering** each year, in addition to patrols and delivering training

health benefits

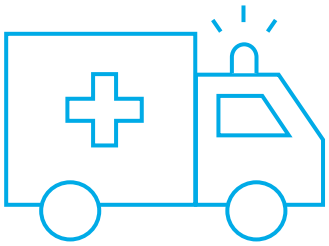
67%
of members meeting the **Australian guidelines** compared to 45% of the population because being involved with SLS encourages high levels of physical activity

The value of lives saved on patrols

The actions performed by Surf Life Saving Australia are expected to prevent 1,363 coastal deaths and 818 critical injuries each year.

1363
lives will be saved

818
critical injuries will be prevented



$6.1 billion
in **lives saved** and **injuries prevented**

For every **$1.00** invested into Surf Life Saving Australia, a return of **$20.20** is achieved for the Australian community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Executive summary

About Surf Life Saving Australia

Surf Life Saving Australia (SLSA) is Australia's peak coastal water safety, drowning prevention and rescue authority. With over 176,000 members and 314 affiliated Surf Life Saving (SLS) clubs, SLSA is a unique organisation; it is the nation's largest volunteer organisation and one of the largest volunteer movements of its kind in the world.[1]

SLSA has a proud heritage with over 110 years of history and tradition. Since 1907, the organisation has grown significantly, and knowledge gained has been passed on from one generation to the next. This growth has been fundamental to SLSA's success in managing some of the most dangerous and unpredictable beaches in the world. Over the years, more than 685,000 people have been rescued by a surf lifesaver.

Estimating the social and economic value of Surf Life Saving Australia

SLSA exists to save lives, create great Australians and build better communities. Through its coastal safety, lifesaving, education, sport and recreation programs and services, SLSA generates significant social and economic benefits for the Australian community each year.

In generating these benefits, the organisation receives a significant proportion of its funding from external sources. These include government grants, fundraising, corporate sponsorships and community donations.

To promote understanding about the outcomes achieved with the support of these funding sources, SLSA has periodically undertaken and commissioned work to estimate the contribution, or value, generated by its activities for the Australian community.

Deloitte Access Economics was engaged to estimate the social and economic value of SLSA to the Australian community. This study involved identifying the various ways in which SLSA generates benefits for both its members and the wider Australian community, and developing suitable approaches to estimate the value of these benefits.

The social and economic value of SLSA has been estimated using a cost-benefit analysis (CBA) approach. For a given policy or investment, a CBA compares the total estimated costs to the community and economy with the total estimated benefits. In this way, a CBA determines whether the benefits outweigh the costs, and if so, to what extent.

This CBA compares the incremental costs and benefits associated with the services and operations of SLSA over a 15-year period, from 2014-15 to 2028-29.

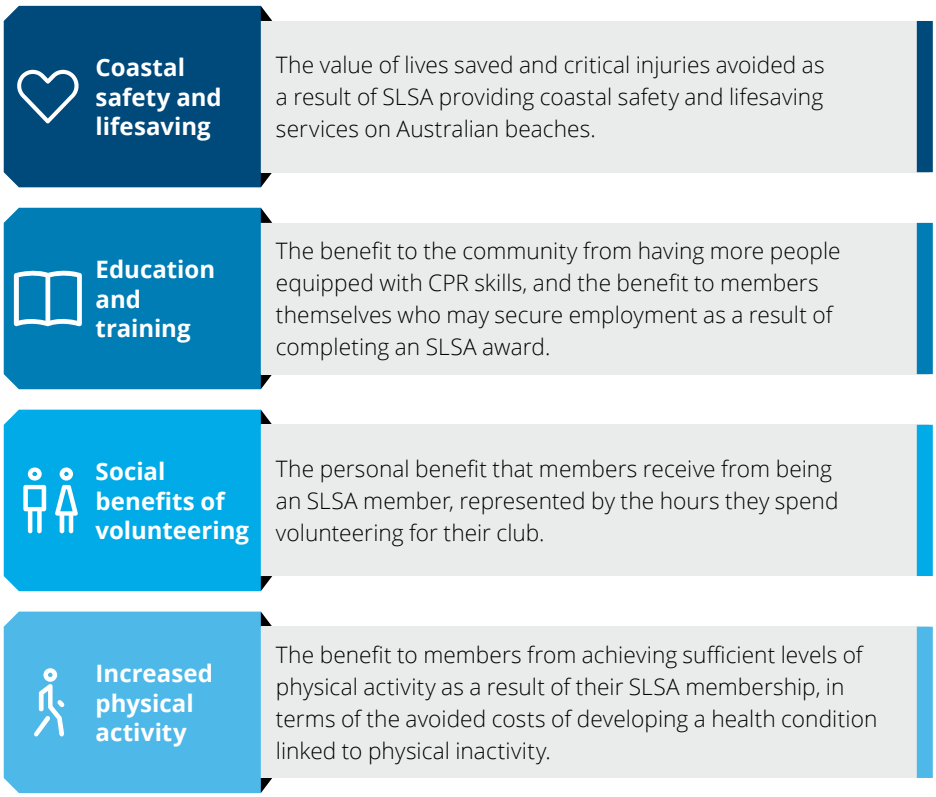
This period reflects five years of historic operations and 10 years of forecast activities and outcomes. The forecasts over the period of analysis have been established by drawing on data and evidence available from the historic five-year period.

Four sources of benefits generated by SLSA have been identified as measurable and are estimated in the CBA. These include:

- Coastal safety and lifesaving
- Education and training
- Social benefits of volunteering
- Increased physical activity.

A brief description of each of the benefits is presented in Figure 1.

Figure 1: Summary of measurable social and economic benefits



In delivering its coastal safety, lifesaving and education services, SLSA incurs a variety of costs. Three main sources of costs are estimated, which include:

- Operating expenditure
- Capital expenditure
- Value of volunteering time.

A brief description of each of the costs is presented in Figure 2. In undertaking the CBA, the estimated benefits and costs of SLSA's services and operations are compared to calculate a net benefit and benefit-cost ratio (BCR).

The total net benefit of Surf Life Saving Australia to the Australian community is $97 billion over 15 years, including the last 5 years and the future 10-year period.

Figure 2: Summary of estimated costs

Operating expenditure	The ongoing operating expenditure associated with the delivery of SLSA services and operations. These expenses are incurred by SLSA, state and territory entities, regional branches and affiliated clubs.
Capital expenditure	The capital expenditure associated with supporting SLSA services and operations. This expenditure is mostly incurred by SLSA, state and territory entities and regional branches, with clubs incurring minimal capital expenditure.
Value of volunteering time	The opportunity cost of members' time spent volunteering on beach patrols and performing a trainer or assessor role.

Total social and economic value of Surf Life Saving Australia

The social and economic value of SLSA is expressed primarily through two main metrics: the net benefit (total benefits less total costs) and the BCR (total benefits divided by total costs). Over the 15-year period of analysis, it is estimated that SLSA will generate a total net benefit to the Australian community of $96.9 billion. In addition, the services and operations of SLSA around the country – both now and in the future – yield a BCR of 20.2. This means that for every $1.00 invested into SLSA, a return of $20.20 is achieved (see Table 1).

The net benefit and the high BCR is largely driven by the value of SLSA's coastal safety and lifesaving services. This benefit accounts for 90% of total benefits – a value of $91.6 billion in present value terms, or an average of $6.1 billion each year. This significant value reflects the value of lives saved and critical injuries avoided as a result of the actions of SLSA's volunteer surf lifesavers and paid lifeguards.
The remaining benefits estimated over the period of analysis are related to SLSA's education and training programs ($2.1 billion, or $140.0 million each year), the social benefits of volunteering for members themselves ($8.1 billion, or $538.5 million each year), and the health benefits of increased physical activity for members resulting from their involvement with SLS ($101 million, or $6.8 million each year).

Overall, this analysis demonstrates the substantial social and economic value SLSA generates for the Australian community. However, in estimating the value of the organisation it is important to note that there are other benefits that reach far beyond those which can be quantified. As the lead organisation for the SLS movement, SLSA represents a unique tradition of community service that holds a special place in the fabric of Australian culture. Its value includes the knowledge and experience accumulated over more than a century of lifesaving and support operations on the Australian coastline, which benefits the Australian community now and will continue to do so in generations to come.

> For every $1.00 invested into Surf Life Saving Australia, a return of $20.20 is achieved.

Table 1: Summary of cost-benefit analysis outcomes, present value terms

Cost-benefit analysis outcome	
Benefits	**$ million**
Coastal safety and lifesaving	$91,630
Education and training	$2,101
Social benefits of volunteering	$8,078
Increased physical activity	$101
Total benefits	**$101,910**
Costs	**$ million**
Operating expenditure	$3,731
Capital expenditure	$140
Value of volunteering time	$1,178
Total costs	**$5,049**
Net benefits	**$96,861**
BCR	**20.2**

Source: Deloitte Access Economics. Note: The numbers in this table may not add due to rounding.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1 Introduction

There are few things more iconic to the Australian lifestyle than spending a day at the beach. Millions of people visit beaches across the country every year to enjoy the natural environment, whether that be laying on the sand, surfing or simply having fun in the water.

1.1 A special place in Australian culture

That Australians love the beach is revealed in where they live; 85% of the population lives within 50 km of the coast.[2] In addition, there were more than 300 million visitors to Australian beaches in the last year alone, including both locals and tourists from all over the world.[3] The beach holds a special place in the hearts of Australians, and is a place where people can come together, have fun and celebrate the natural beauty of this country.

The vast Australian coastline is also a place where three of the world's oceans meet – the Pacific, Indian and Southern oceans – with each presenting a unique set of conditions and experiences to locals and visitors. A visit to the beach should be one of fun, excitement or relaxation. However, the Australian surf can at times be dangerous and unpredictable. Many beachgoers identify as beginner or intermediate swimmers, with 46% reporting they are unable to swim 50 metres in the ocean without touching the bottom.[4] In addition, rip currents pose a major risk and are unidentifiable to untrained eyes. Despite significant advancements in technology, techniques and knowledge, many people still drown on the Australian coastline, with 122 coastal and ocean drowning deaths occurring across the country in 2018-19.[5]

1.2 About Surf Life Saving Australia

Surf Life Saving Australia (SLSA) is the peak coastal water safety, drowning prevention and rescue authority in Australia. SLSA is a not-for-profit, member-based organisation that provides crucial services in lifesaving and education to mitigate the risks posed by the nation's varied coastline. With over 176,000 members and 314 affiliated Surf Life Saving (SLS) clubs, it is also Australia's largest volunteer organisation and one of the largest volunteer movements of its kind in the world.[6]

SLSA can trace its origins back to October 1907, when representatives of the first SLS clubs that emerged on Sydney's ocean beaches formed the Surf Bathing Association of New South Wales. Since this time, more than 685,000 people have been rescued by a surf lifesaver.

In 2018-19, active patrolling members of SLSA performed over 10,000 rescues, responded to almost 90,000 incidents requiring first aid treatment, and carried out more than 1.5 million preventative actions. In generating these results, the organisation's volunteers performed more than 1.3 million patrol hours.[7]

A key feature of SLSA's coastal safety and surveillance system is the organisation's red and yellow flags. The area between the flags indicates the area which is patrolled by surf lifesavers and lifeguards. So effective and prevalent are the red and yellow flags on the beach that they have long been recognised as a nationally significant icon.

Surf Life Saving Australia is Australia's largest volunteer organisation and one of the largest volunteer movements of its kind in the world.

1.3 Services provided by Surf Life Saving Australia

SLSA carries out its services through its network of 314 affiliated SLS clubs, which are located at the busiest and most popular beaches across Australia. To assist with the governance of SLS clubs across the country, state-level bodies exist in all coastal states and the Northern Territory. In fact, the SLS movement in Australia is a federated structure made up of 493 separate legal entities, including state-level bodies, clubs, branches and support operations.

As the lead policy and decision-making body for the SLS movement, SLSA delivers a range of activities and programs including coastal safety, national sport events, fundraising campaigns, education, participation and other community programs.

1.3.1 Coastal safety

As Australia's peak coastal water safety, drowning prevention and rescue authority, SLSA provides a risk management and evidence-based approach to coastal safety. In doing so, it addresses coastal safety issues by delivering a variety of public education programs, mitigation strategies and lifesaving services.

1.3.1.1 Beach safety

The Beachsafe website is a resource developed and maintained by SLSA, which provides a range of information to the public about local beach conditions and safety advice.[8] Visitors to the website can search for any beach and retrieve up-to-date information about patrol status, facilities and hazards to weather, swell and tide; much of this information is also available via the Beachsafe mobile app.

The website is also designed to help people learn about the beach more generally, including the science of the surf and how to identify and escape from rip currents, how to stay safe at the beach, the meaning of the various safety signs, Australia's marine animals, surf skills and first aid.

1.3.1.2 Lifesaving services

SLSA coordinates an integrated national coastal lifesaving service, which includes both volunteer surf lifesavers and paid lifeguards. Through its network of affiliated clubs, volunteer surf lifesavers are assigned to patrol designated beaches and protect beachgoers by rendering assistance when required; this includes performing rescues, preventative actions and administering first aid.[9]

As part of the SLS movement, the Australian Lifeguard Service (ALS) provides paid lifeguard services to over 65 local government authorities and land managers across Australia. The ALS is the sole provider of lifeguard services to coastal local government areas in Victoria, South Australia, Tasmania, Northern Territory and the main provider of services in Queensland, Western Australia and New South Wales. In addition, the ALS is one of the largest providers of paid lifeguards in the world and the largest in the southern hemisphere; it employs over 700 lifeguards and provides services at over 200 beaches across the country.

1.3.1.3 Research and campaigns

SLSA undertakes research initiatives and campaigns focused on coastal drowning deaths, other coastal fatalities and risk factors, rip current safety and community perceptions relating to coastal hazards. The national *Think Line* campaign aims to increase awareness of the rip current hazard and influence risky behaviours, particularly in young men between the ages of 15 and 39 years, who are highly represented in drowning statistics.

The annual *National Coastal Safety Report* provides a detailed analysis of coastal drowning deaths in Australia, including an identification of the circumstances under which these deaths occur. The report also includes research into first aid treatments and preventative actions, as well as visitation and community perceptions relating to coastal hazards. The analysis provides SLSA with evidence-based insights that are used to inform water safety and education initiatives for the community.

SLSA also develops *Coastal Safety Briefs* to explore specific coastal issues, including ways to prevent and address incidents in the future. Topics considered in recent *Coastal Safety Briefs* have included boating, rock fishing, surfing and watercraft, rip currents, and snorkelling and scuba diving.

SLSA also undertakes a range of other projects in collaboration with research institutions, which are designed to inform specific water safety and drowning prevention issues. For example, previous research projects have focused on the characteristics of rescues undertaken by bystanders (i.e. individuals who are not either a volunteer surf lifesaver or paid lifeguard) and strategies to mitigate the risks encountered by people who participate in rock fishing.

1.3.2 Education and training

SLSA offers a wide variety of education and training programs to both members and non-members. Although the content of these programs vary, they are primarily designed to equip participants with the knowledge and skills required to carry out their role as surf lifesavers.

The Bronze Medallion is SLSA's core operational award. It is available to all members over the age of 15 years, and is the minimum educational requirement for members to be involved in beach patrols. In addition to a highly physical component (see section 2.4.1), it includes a range of transferable skills such as first aid and cardiopulmonary resuscitation (CPR), rescue techniques, radio communications and teamwork. The Bronze Medallion is recognised by the International Life Saving Federation and meets the requirements of the Public Safety Training Package.[10]

In addition to awards that focus on developing the fundamental skills required for beach patrols, other awards allow members to expand their skills so they can take on greater responsibilities for their club and on patrol. For example, some awards relate to inflatable rescue boat (IRB) operation, facilitating training and assessments, and becoming qualified as a coach or competition official for surf sports.

1.3.3 Sport events

SLS sports – or surf sports – are a way for lifesavers to apply the skills and physical abilities required to save a life in a fun, competitive environment. The competitive sporting environment encourages patrolling members to expand and maximise their lifesaving skills, while also promoting increased physical activity among members. Each year, thousands of members use their lifesaving skills to compete in carnivals at club, branch, state and national levels across a range of disciplines.

SLSA hosts a variety of national sporting events, many of which are open to both members and the general public. For example, SLSA hosts the annual *Australian Surf Life Saving Championships* – commonly known as *The Aussies* – in which members from all 314 affiliated clubs are invited to compete in more than 480 beach and ocean events, making it one of the largest events of its kind in the world.

In addition to hosting national surf sport events, SLSA also provides opportunities for international competition. Supported by the Australian Sports Commission and in partnership with Royal Life Saving Society Australia (RLSSA), an Australian team is selected to compete in the biennial World Lifesaving Championships and other national team competitions.

1.4 Estimating the social and economic value of Surf Life Saving Australia

Through its coastal safety, lifesaving and education programs and services – along with the range of other activities coordinated by its affiliated clubs – SLSA generates significant social and economic benefits for the Australian community each year. Over the years, SLSA has periodically undertaken and commissioned work which has sought to estimate the contribution, or value, generated by its activities for the Australian community.

While previous studies undertaken in 2005[11] and 2011[12] resulted in different outcomes (a BCR between 10.4 and 16.5 in 2005 and a BCR of between 21.7 and 29.3 in 2011), one thing remained consistent – the benefits of SLSA were found to far outweigh the costs. Each of these studies unquestionably confirmed the unique, significant and ongoing value that SLSA brings to the Australian community and economy.

The different outcomes in these studies can be attributed to the refinement of the modelling approach over time. Further explanation of these differences is outlined in Appendix B.

Deloitte Access Economics was engaged to estimate the social and economic value of SLSA to the Australian community. This study involved identifying the various ways in which SLSA generates benefits for both its members and the wider Australian community, and developing suitable approaches to estimate the value of these benefits. A cost-benefit analysis (CBA) approach was used for this purpose. Appendix A provides further details about the approach used in undertaking this study.


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2 Measuring the benefits

Through its coastal safety, lifesaving and education programs and services, the wide range of activities coordinated by affiliated clubs and the positive impacts of SLS involvement for members themselves, SLSA generates significant social and economic benefits for the Australian community each year.

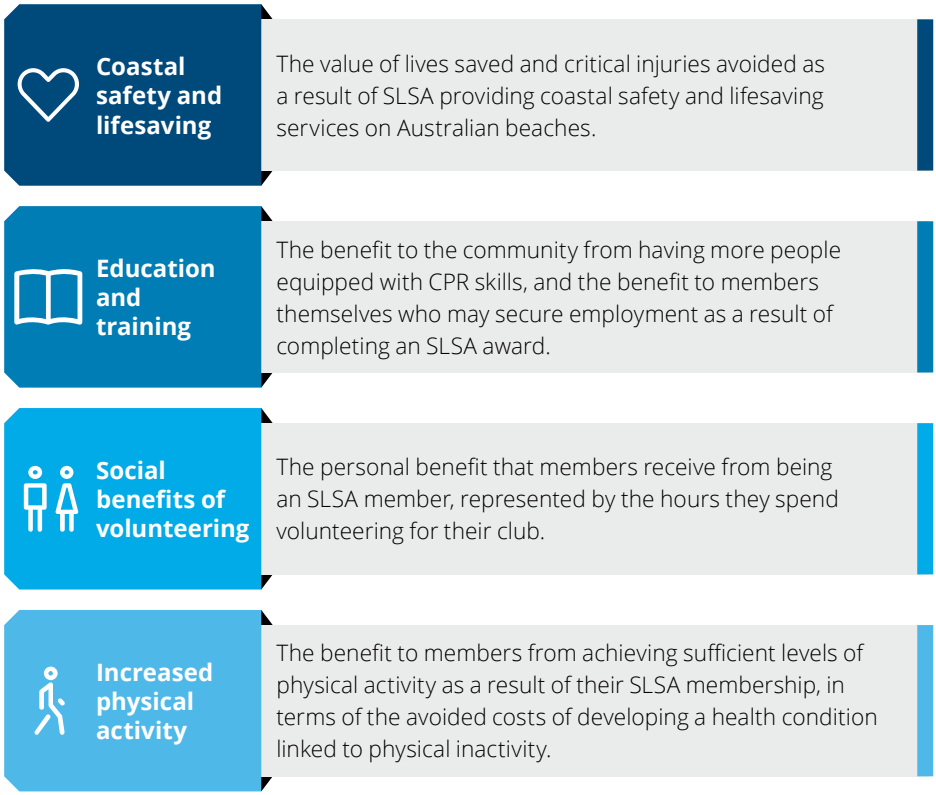
Four sources of benefits have been identified as measurable and are estimated in the CBA. These include:

1. Coastal safety and lifesaving
2. Education and training
3. Social benefits of volunteering
4. Increased physical activity.

A brief description of each of the benefits is presented in Figure 2.1.

The following sections discuss each of the benefits, along with the key data inputs and assumptions that have been used in estimating their value.

Figure 2.1: Summary of measurable social and economic benefits



2.1 Benefit 1: Coastal safety and lifesaving

2.1.1 Summary

The red and yellow flags are recognised across the nation for marking the area which has been assessed by surf lifesavers or lifeguards as suitable for swimming, and which is being supervised. This lifesaving service is fundamental to SLSA's coastal safety and surveillance system, enabling the organisation to provide immediate assistance to swimmers and other beachgoers who encounter danger while at the beach. In performing this role, the most significant contribution made by SLSA to the Australian community is when a surf lifesaver or ALS lifeguard rescues a beachgoer who would have either died or been seriously injured if they were not rescued.

The national coastal lifesaving service coordinated by SLSA includes both volunteer surf lifesavers and paid lifeguards. At the club level, beach patrols are coordinated by assigning volunteer surf lifesavers to patrol specific beaches during the nominated patrol hours, which vary across beaches. These volunteers are then available to immediately assist beachgoers when the need arises. The interventions they perform usually take the form of either rescues, preventative actions or administering first aid.

Reflecting its standing as Australia's largest volunteer organisation and one of the largest volunteer movements of its kind in the world, in 2018-19 a total of 43,092 volunteer surf lifesavers spent more than 1.3 million hours on patrol at beaches around the country. This reflects an average of 32.0 hours for each volunteer surf lifesaver. As a result of these efforts, volunteers performed 6,357 rescues, carried out 372,195 preventative actions, and responded to 34,383 incidents requiring first aid treatment (see Table 2.1).[13] These volunteer surf lifesavers are highly qualified, holding either a Bronze Medallion or a Surf Rescue Certificate (if under the age of 15 years) and engaging in regular requalification processes to ensure that fundamental lifesaving skills are maintained.

In addition to volunteer surf lifesavers, paid lifeguard services are provided through the Australian Lifeguard Service (ALS) to over 65 coastal local government areas and land managers in all coastal Australian states. The ALS is one of the largest providers of paid lifeguards in the world and the largest in the southern hemisphere, employing over 700 lifeguards and servicing over 200 beaches across Australia. In 2018-19, ALS lifeguards collectively spent 426,580 hours on patrol at Australian beaches. These lifeguards performed 3,819 rescues, issued almost 1.2 million preventative actions, and responded to 55,312 incidents requiring first aid treatment (see Table 2.1).

In total, the combined impact of SLSA's services in 2018-19 is a significant 10,176 rescues, more than 1.5 million preventative actions, and 89,695 first aid treatments. These actions are a critical part of SLSA's efforts to protect beachgoers from coastal dangers; without them, many beachgoers may be seriously injured, and others may have lost their lives. Therefore, the value of SLSA's coastal safety and lifesaving services is estimated by measuring the value of fatalities and critical injuries avoided as a result of the intervening actions of surf lifesavers and ALS lifeguards.

In 2018-19, 43,092 volunteers spent more than 1.3 million hours on patrol at Australian beaches.

Table 2.1: Actions performed by SLS clubs, support operations and lifeguards, 2018-19

Source of action	Rescues	Preventative actions	First aid treatments	Patrol hours
SLS clubs (volunteers)	5,561	354,458	34,300	1,346,454
SLS support operations (volunteers)	796	17,737	83	32,602
ALS lifeguards	3,819	1,194,254	55,312	426,580
Total	**10,176**	**1,566,449**	**89,695**	**1,805,636**

Source: Surf Life Saving Australia, *Annual Report 2018-19.*

2.1.2 Key inputs and assumptions

2.1.2.1 Number of rescues and preventative actions

Historic data on the number of rescues and preventative actions performed between 2014-15 and 2018-19 was sourced from annual reports published by SLSA and state entities. Over the five-year period, the number of rescues and preventative actions each year have not moved in a consistent direction. Rescues have actually decreased in each successive each year since a peak of 13,034 in 2015-16, while preventative actions have changed from year to year, reaching a peak of over 1.5 million in 2018-19 (see Chart 2.1). These changes likely reflect the impact of a range of factors, which may include climate, the perception of risk related to marine life activity, or simply the number of people entering the water. The number of active patrolling surf lifesavers and ALS lifeguards may also impact the number of interventions performed. As a result, it is difficult to predict the number of future rescues and preventative actions.

Although the number of future rescues and preventative actions is difficult to accurately forecast, it is reasonable to assume that the number of interventions will increase over time. As the Australian population grows and more coastal areas become accessible, so will the number of people visiting Australian beaches.

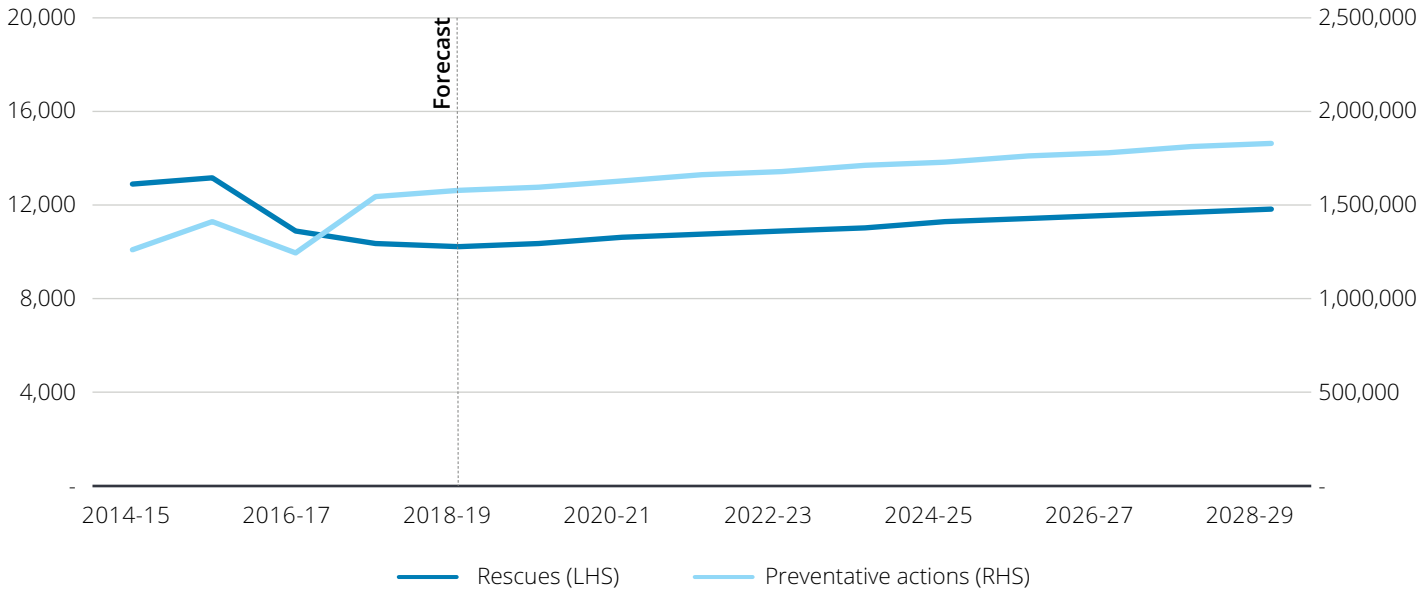
Therefore, it has been assumed that the number of rescues and preventative actions will increase over time in line with Australian population growth forecasts. The Australian Bureau of Statistics (ABS) population growth forecasts indicate expected annual population growth of 1.7% in 2019-20 and 2020-21, decreasing to 1.6% in 2021-22 and 1.5% by 2023-24.[14] Forecast annual population growth continues to decrease every few years until it reaches 1.3% in 2028-29, the final year of the forecast period.

Over the period of analysis, it is estimated that a total of 168,128 rescues and more than 24.0 million preventative actions will be performed by surf lifesavers and ALS lifeguards. This reflects an average of 11,209 rescues each year, and over 1.6 million preventative actions each year.

2.1.2.2 Avoided fatalities and critical injuries

Each time a surf lifesaver or ALS lifeguard performs a rescue or a preventative action, the risk of a fatality or critical injury is significantly reduced – or avoided entirely. However, not all of these actions can be expected to have resulted in a fatality or critical injury in the absence of an intervention. In some cases, it is possible that the beachgoer may have eventually gotten themselves out of danger, or that someone else on the beach may have rendered assistance.

Chart 2.1: Number of rescues and preventative actions, 2014-15 to 2028-29



Source: Surf Life Saving Australia, Deloitte Access Economics.

Reflecting these possibilities, a 2005 study commissioned by SLSA found that in the absence of action by surf lifesavers and lifeguards, 5% of all rescues would have resulted in a fatality and 3% of all rescues would have resulted in a critical injury.[15] The remaining rescues are expected to have required only minor first aid treatment, or have resulted in no injury at all.

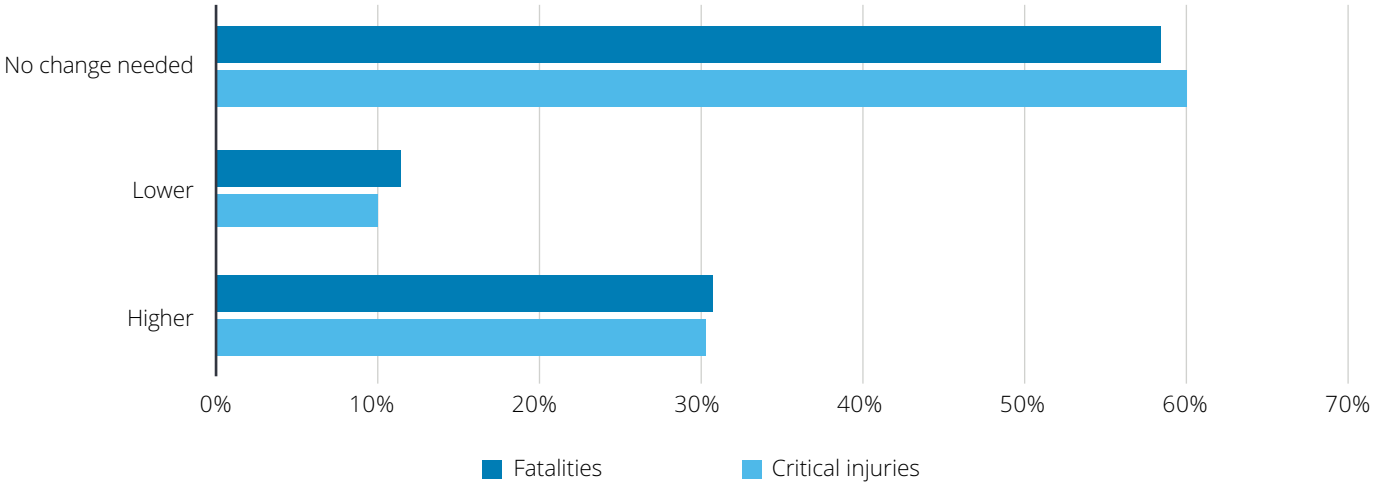
In addition to rescues, it is reasonable to expect that preventative actions also prevent fatalities and critical injuries from occurring. The same 2005 study estimated that in the absence of an intervention, 1% of all preventative actions would have resulted in a beachgoer needing to be rescued. A small proportion of these avoided rescues would then be expected to have resulted in a fatality or critical injury; again, 5% and 3% for fatalities and critical injuries respectively. These assumptions were also applied in a 2011 study commissioned by SLSA.

In undertaking this study, Deloitte Access Economics sought to revisit these assumptions as part of the survey. Patrolling members were first asked whether they considered the rescues assumptions used in the 2005 study to be reasonable. The majority of patrolling members indicated that they felt the rescues assumptions were reasonable, with 71% and 72% indicating this for the fatalities and critical injuries assumptions respectively.

Patrolling members were also asked whether they felt the rescues assumptions used in the 2005 study should be higher or lower. The majority of patrolling members indicated that no change was needed for either the fatalities (58%) or critical injuries (60%) assumptions. For those who did indicate that a change in the assumptions was required, most suggested that the proportion of rescues that would have resulted in either a fatality or a critical injury should be higher (see Chart 2.2).

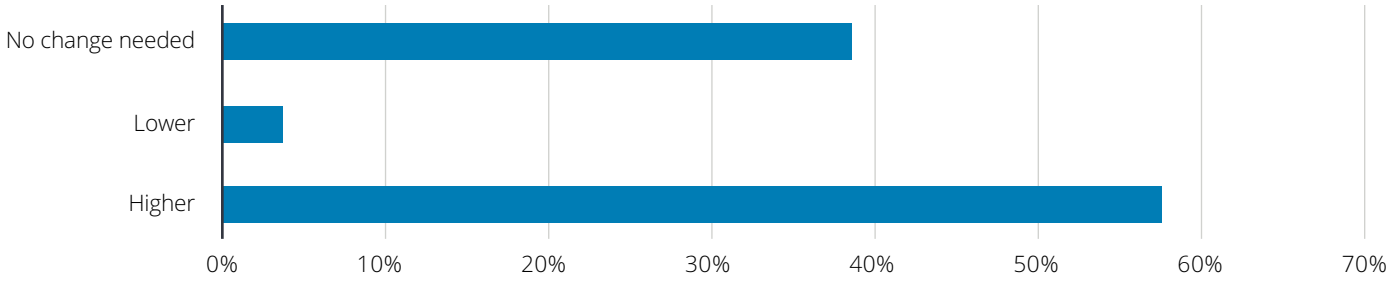
In addition, patrolling members were asked whether they considered the preventative actions assumption used in the 2005 study to be reasonable. The majority of patrolling members (51%) indicated that they felt the assumption was reasonable. However, when asked whether they felt the preventative actions assumption used in the 2005 study should be higher or lower, most (58%) suggested that the proportion of preventative actions that would have resulted in a rescue should be higher than 1% (see Chart 2.3).

Chart 2.2: Response to 'Based on your patrolling experience, should these estimates be higher or lower?' (Proportion of rescues that would have resulted in a fatality or critical injury)



Source: Deloitte Access Economics' national survey of SLS members.

Chart 2.3: Response to 'Based on your patrolling experience, should this estimate be higher or lower?' (Proportion of preventative actions that would have resulted in a rescue)



Source: Deloitte Access Economics' national survey of SLS members.

These survey findings were used to inform discussions with SLSA about what assumptions relating to the outcomes of its lifesaving services should be used in the analysis. The survey responses were also considered according to a range of member characteristics, including by years of active involvement in patrols, number of rescues, age and location or state. Although some minor variations were identified in responses across these member groups, there was a high level of consistency with the findings identified across all patrolling member groups.

Based on the broad support established from the recent survey for the assumptions used in the 2005 study, the current analysis retains these assumptions to estimate the incidence of fatalities and critical injuries in the base case. This reflects the expected outcomes in a scenario where the lifesaving services provided by SLSA do not exist. This approach promotes consistency and comparability with the results of the 2005 and 2011 studies.

It also can be viewed as a conservative approach, given that the survey findings showed many patrolling members felt the proportions of rescues, and preventative actions in particular, would be higher than those reflected in the earlier assumptions. However, the findings from the current survey have been used to inform sensitivity testing of the analysis results (see sections 5.2.2 and 5.2.3).

Using the assumptions from the 2005 study, Chart 2.4 illustrates the relationship between the estimated number of rescues, avoided rescues (which are avoided as a result of preventative actions), and avoided fatalities and critical injuries. Over the period of analysis, it is estimated that the actions performed by SLSA will prevent 1,363 coastal deaths and 818 critical injuries from occurring each year.

2.1.2.3 Value of lives saved and critical injuries avoided

To estimate the value of the lives saved as a result of the actions performed by surf lifesavers and ALS lifeguards, the value of an individual life must be defined. Guidance published by the Department of the Prime Minister and Cabinet suggests that a credible estimate of the value of a statistical life is $4.9 million in 2019 dollars;[16] this reflects a value of $4.98 million in 2020 dollars. In line with this guidance, each life that is saved as a result of an action performed by SLSA is valued at $4.98 million in the analysis.

For critical injuries, a study by Royal Life Saving Society Australia found that the average cost of a non-fatal drowning incident is approximately $400,000 in 2016 dollars.[17] This reflects a cost of $429,466 in 2020 dollars, which has been used in the analysis to estimate the value of each critical injury avoided as a result of SLSA actions. The cost of a non-fatal drowning takes into account the costs of medical care, burden of disability and ongoing healthcare needs, as well as short and long-term impacts on productivity.

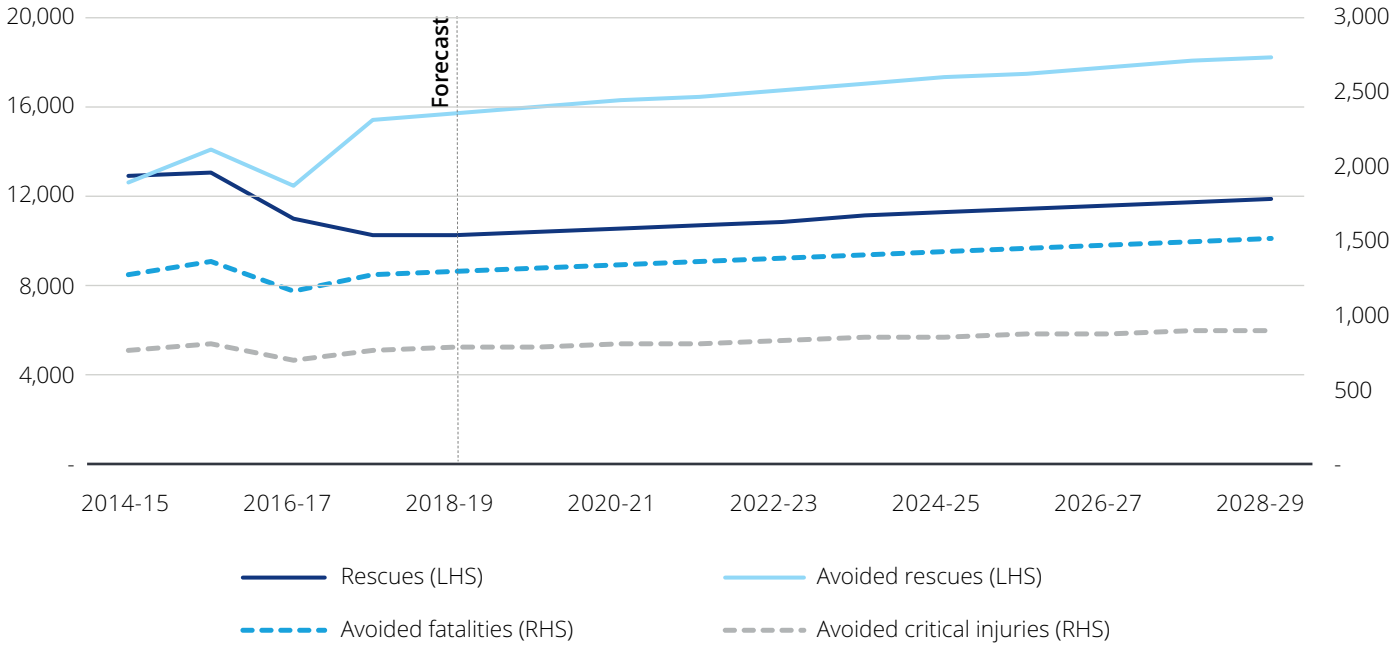
2.1.3 Estimated value

Over the period of analysis, it is estimated that the interventions performed by surf lifesavers and ALS lifeguards will result in 20,450 avoided fatalities and 12,270 avoided critical injuries. This reflects an average of 1,363 avoided fatalities each year, and 818 avoided critical injuries each year.

The value of these avoided fatalities and critical injuries is estimated at $91.6 billion in present value terms, or an average of $6.1 billion each year.

> The actions performed by Surf Life Saving Australia are expected to prevent 1,363 coastal deaths and 818 critical injuries each year.

Chart 2.4: Estimated number of rescues, avoided rescues, avoided fatalities and critical injuries, 2014-15 to 2028-29



Source: Surf Life Saving Australia, Deloitte Access Economics.

2.2 Benefit 2: Education and training

2.2.1 Summary

Through its network of affiliated clubs, SLSA offers both members and non-members the opportunity to complete a wide variety of education and training programs, known as 'awards'. The content of these programs vary, giving participants the opportunity to attain proficiency in skills that are relevant not only to lifesaving, but also across a range of other disciplines.

Some awards are considered fundamental in developing the skills required for beach patrols. For example, all adult patrolling members must hold a current Bronze Medallion – and those under the age of 15 must hold a Surf Rescue Certificate – before they can be involved in patrols on the beach.

Other awards are more voluntary in nature, allowing members to broaden their skills so they can assist their club to a greater extent in lifesaving and other activities. For example, some awards are related to radio operation, inflatable rescue boat (IRB) operation (as a driver or crew member), assisting as a member of an aquatic search team, facilitating training and assessments, and becoming qualified as a coach or competition official for surf sports.

With each additional qualification that a member completes, they are able to take on greater responsibilities for their club and on beach patrols. However, many of these awards also have application outside the SLS setting. For example, courses in first aid and CPR enable participants to assist not only with an emergency on the beach, but also to render assistance in a non-patrolling medical emergency.

In addition, it can reasonably be expected that completing an SLSA award will assist some members to find employment. For example, completing a Bronze Medallion – which also qualifies members for a Certificate II in Public Safety (Aquatic Rescue) – may lead to a participant becoming a paid lifeguard. First aid qualifications are often relevant for roles in the education, hospitality, sport and recreation and medical industries , and award holders may receive a higher wage because of this.

For some roles within these industries, it may be either a requirement or a recommendation for workers to hold a first aid qualification, or there may be a requirement for one member of staff on premises to hold a qualification. Finally, training and assessment qualifications also have application in a variety of professional settings.

Given the wide potential application of SLSA awards, the value of SLSA's education and training programs is estimated from two sources:

- The benefit to the Australian community from having more members of the population (including members and non-members) equipped with CPR skills, in terms of lives saved
- The benefit to members themselves from completing an SLSA award, which may assist them to secure paid employment.

2.2.2 Key inputs and assumptions

2.2.2.1 Number of awards completed

The first source of benefit is related to the lives saved by both SLSA members and members of the community that complete a first aid award. Many of the awards offered by SLS clubs contain some element of first aid training; however, in this analysis, it is assumed that only awards that contain a CPR component will equip participants to save a person's life in an emergency situation. A list of SLSA awards that contain a CPR component is provided in Appendix C.

In addition, only the first instance of an individual completing an award with a CPR component is considered. That is, if an individual completes a number of CPR awards, only completion of the first award is considered. This reflects the fact that successive completions of a CPR award likely result in a person maintaining their competency or level of skill in this area, rather than acquiring new skills that allow them to assist in a wider variety of emergencies.

From 2014-15 to 2018-19, it is estimated that an average of 10,582 SLSA members and 86,285 members of the Australian community completed a CPR award for the first time with SLSA each year.[18] It is assumed that the number of CPR awards to be completed for the first time by SLSA members will remain constant over the period of analysis. That is, the number of members to complete a CPR award for the first time is expected to remain constant at 7,148 per year, which is consistent with the last year of available data, 2018-19.

The number of community members who complete a CPR award for the first time is forecast to increase over time in line with Australian population growth forecasts (see section 2.1.2.1). This growth is applied to the estimated 99,217 community members who completed a CPR award for the first time in 2018-19.

The second source of benefit is related to the ability of members to secure paid employment as a result of the qualifications and skills they have acquired from their SLSA training.[19] All awards, whether they contain a CPR component or not, have the potential to contribute to a member securing paid employment. Again, only the first award that an individual completes is considered.

From 2014-15 to 2018-19, it is estimated that an average of 11,107 SLSA members completed an award for the first time each year. Similar to the number of members to complete a CPR award for the first time, it has been assumed that the number of awards to be completed for the first time by SLSA members will remain constant over the period of analysis. That is, the number of members to complete any award for the first time is expected to remain constant at the 2018-19 level, with 8,110 first-time award completions per year.

Over the period of analysis, 124,392 SLSA members and more than 1.5 million members of the Australian community are expected to complete a CPR award for the first time. Further to this, 136,633 SLSA members are expected to complete any award for the first time.

2.2.2.2 CPR and rate of survival

A study by Groeneveld et al (2005) considered the costs and health benefits of alternative resuscitation training strategies for adult laypersons; that is, those without professional first-responder occupations. The study found that each CPR qualification may be associated with 2.7 quality-adjusted hours of life saved.[20] In other words, for each additional person who completes CPR training, an average of 2.7 hours of life is expected to be saved in the future.

This estimate reflects the fact that many people who complete CPR training may never be required to perform it. However, some people will encounter a life-threatening emergency in which their CPR training enables them to render care that saves a person's life. Therefore, this study applies an assumption that for each person that completes a CPR award for the first time with SLSA – including both members and non-members – 2.7 hours of life is saved in the future.

The findings from the survey support the assumption that some people who complete a CPR award with SLSA will encounter a life-threatening emergency in the community, in which their training enables them to provide care. Across patrolling and non-patrolling members, 88% indicated that they had completed CPR training with either SLSA or an external organisation, or both. For CPR-trained members, almost one in five (19%) indicated that they had encountered a non-patrolling medical emergency in which they had been able to use their skills to administer CPR.

In addition to formal CPR training, SLSA also provides members with opportunities to practice their skills during beach patrols in the form of scenario training, which may assist to improve CPR performance. For example, one study found that frequent, short-duration CPR training was effective in improving CPR performance, with monthly training more effective than training every three, six or 12 months.[21]

2.2.2.3 Value of lives saved

In estimating the value of the lives saved as a result of the actions of surf lifesavers and ALS lifeguards, this study aligns with guidance published by the Department of the Prime Minister and Cabinet. The guidance suggests that a credible estimate of the value of a statistical life is $4.9 million in 2019 dollars (see section 2.1.2.3).[22] The same guidance note suggests that a value of $213,000 should be used as an estimate for the value of a statistical life year. This reflects a value of $216,340 in 2020 dollars.

Based on an average year of 365.25 days (or 8,766 hours), an estimate of $24.68 is derived for the value of an hour of life. This value is used in the analysis to estimate the value of the hours of life saved by members and non-members who complete CPR training with SLSA.

2.2.2.4 Contribution of awards to securing paid employment

While it is unlikely to be a primary reason that members undertake training with SLSA, the findings from the survey indicate that some members who complete awards find that their qualifications and skills assist them to secure paid employment. The survey found that 77% of members had completed an award through their SLS club. Among those that had completed an award, 25% believed their training had assisted them at least to some extent to secure paid employment.

The analysis weighted responses to estimate the extent to which the award had contributed to a member securing employment, depending on whether a member had indicated their training assisted them 'to some extent', 'to a large extent' or 'to a very large extent'. Using this approach, the analysis derived an assumption that 10.1% of members who complete an award with SLSA will secure paid employment as a result of the new qualifications and skills they have acquired.

> One in five members who completed CPR training encountered a non-patrolling medical emergency and administered CPR.

> For members who completed an award, 25% believed their training assisted them to gain employment.

2.2.2.5 Average tenure of employment

For members that do secure employment as a result of their SLSA award, it is reasonable to assume that they would remain in their role for a period of time until either their employment ends or they decide to pursue other opportunities. Analysis by McCrindle (2019) suggests that the average tenure of employment for Australian employees is 2.9 years.[23] The analysis therefore assumes that members who secure employment as a result of their award will remain in their role for 2.9 years.

It is also unlikely that a member would secure employment immediately following the completion of their award. To account for this, the analysis assumes that a member commences their employment in the financial year following the year in which they complete their award.

2.2.2.6 Average income

SLSA awards equip participants with a broad range of employment-related skills, including first aid and CPR, water safety, leadership, as well as coaching, teamwork, communication, facilitation and training skills. As a result, members who complete SLSA awards may find employment across a variety of industries (see section 2.2.1).

Given the variety of roles for which an SLSA award may be relevant, average weekly earnings across all industries is used to estimate the value of this source of benefit. The average income of an individual is estimated at $1,256.20 per week, which reflects average weekly earnings for all employees, including full-time, part-time and casual workers.[24]

2.2.3 Estimated value

Over the period of analysis, it is estimated that more than 4.4 million hours of life will be saved by members and non-members who complete CPR training with SLSA; this reflects an average of 294,855 hours of life saved each year.

In addition, 13,853 members are expected to secure employment as a result of SLSA awards, or an average of 924 per year.

The value of SLSA's education and training programs is estimated at $2.1 billion in present value terms, or an average of $140.0 million each year.

Each year, 294,855 hours of life is expected to be saved as a result of CPR training provided by Surf Life Saving Australia.

2.3 Benefit 3: Social benefits of volunteering

2.3.1 Summary

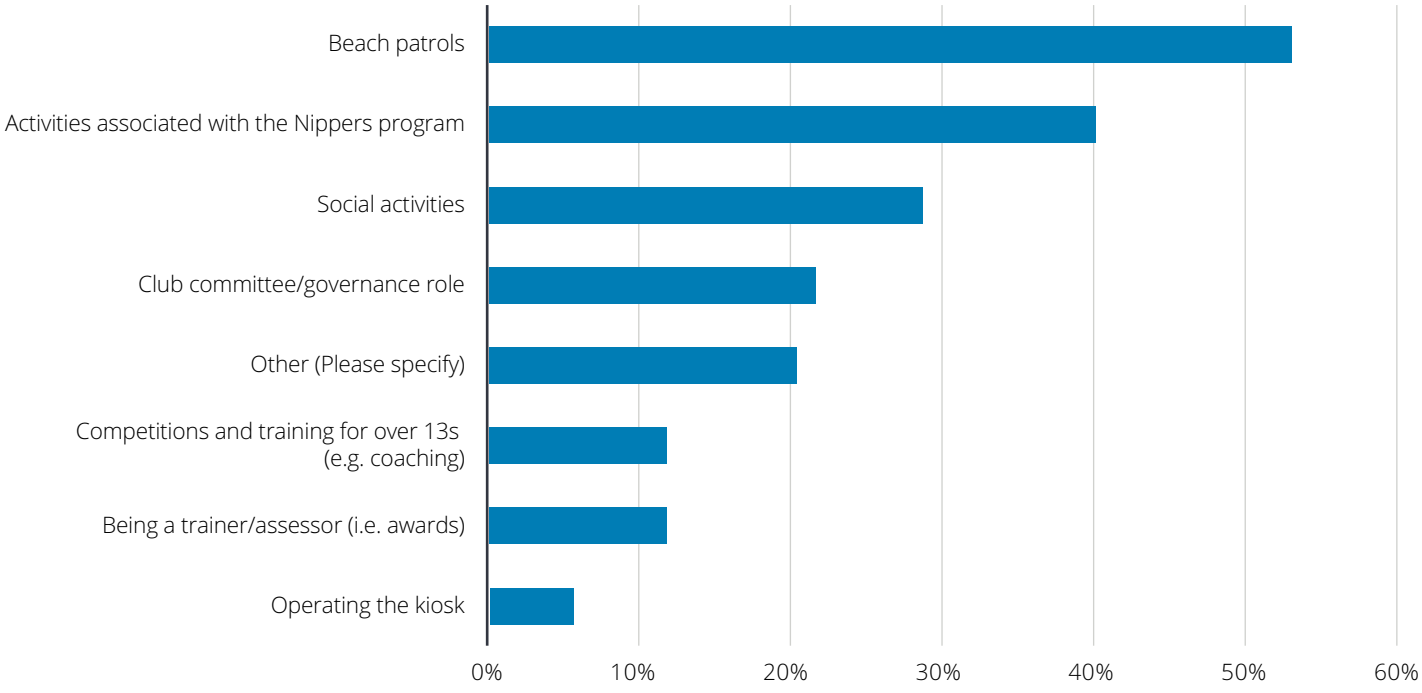
SLSA members volunteer in a variety of ways for their club. The findings from the survey indicate that 90% of members volunteer for their club in some way. Members are most commonly involved in volunteer beach patrols, with 53% of all respondents selecting this option (see Chart 2.5), broadly reflecting the proportion of respondents who indicated they were patrolling members who were actively involved in patrols (51%). In addition to beach patrols, a substantial proportion of respondents (40%) volunteer by supporting activities associated with the Nippers program. These may include parents of children who assist with water safety during the program, or age group managers who facilitate the activities.

Other members volunteer for their club by supporting social activities (29%), by fulfilling a club committee or governance role (22%), officiating and coaching for surf sport competitions (12%) and delivering training courses (12%).

Each member receives a personal benefit from the hours they spend volunteering. This can be assumed because volunteer commitments represent an opportunity cost on members' time. The time spent by a member to volunteer for their club comes at the cost of the next best use of that member's time. It follows that the benefit that a member receives from volunteering must exceed the opportunity cost of doing so, otherwise a member would spend their time on other activities.

This analysis assumes that working in paid employment represents the next best use of an individual's time. That is, if a member chooses to spend their time volunteering for their club, then they must receive at least as much benefit, if not more, from volunteering as they would from a wage that could be earned. Using this assumption, the benefit that SLSA members receive from their membership is estimated by valuing the hours that they spend volunteering, based on a relevant hourly wage rate.

Chart 2.5: Response to 'In what ways do you volunteer for your club? Please select all that apply.'



Source: Deloitte Access Economics' national survey of SLS members.

2.3.2 Key inputs and assumptions

2.3.2.1 Volunteer hours

The value of the personal benefit that SLSA members receive from their membership is primarily driven by the number of hours that members – both patrolling and non-patrolling – spend engaged in volunteer activities for their club. However, it should be noted that this benefit does not consider the number of hours that members spend patrolling beaches and delivering training courses as a trainer or assessor. The exclusion of these hours avoids double counting the benefits, since Benefit 1 and Benefit 2 already capture the outcomes generated by volunteer time spent patrolling beaches and delivering training courses. Therefore, the value of this benefit is intended to capture only the benefits of additional volunteer time, such as time spent officiating competitions, coaching surf sports, undertaking a club committee or governance role, or assisting with running the Nippers program.

The number of patrolling and non-patrolling members across Australia was sourced from SLSA annual reports from 2014-15 to 2018-19. Average annual growth in the number of members (excluding Nippers) over this period was 1.8%; however, this growth was inconsistent from year to year, with only 0.2% growth in the number of members between 2015-16 and 2016-17, compared to 2.6% growth from 2016-17 to 2017-18. Therefore, the number of patrolling and non-patrolling members is forecast to increase over time in line with Australian population growth forecasts (see section 2.1.2.1). This growth is applied to the total of 114,268 patrolling and non-patrolling members in 2018-19.

The findings from the survey indicate that in addition to the time spent on beach patrols and delivering training courses, patrolling members spend an average of 2.8 hours volunteering for their club each week. Similarly, in addition to the time spent delivering training courses, non-patrolling members spend an average of 2.0 hours each week volunteering for their club. Both of these estimates reflect a seasonal adjustment, as both patrolling and non-patrolling members spend more time volunteering each week during the surf season than during the off season. Over the period of analysis, it is estimated that SLSA members will collectively spend over 14.4 million hours each year volunteering for their clubs, in addition to beach patrols and delivering training courses.

2.3.2.2 Wage rate

An average hourly wage of $43.65 is used in this analysis. This reflects an average full-time wage for employees across all industries of $1,658.70 per week,[25] and a full-time working week of 38 hours.[26]

2.3.3 Estimated value

Over the period of analysis, SLSA members are expected to spend more than 216.3 million hours volunteering for their clubs (over 14.4 million hours each year) in addition to hours spent on beach patrols and delivering training courses. The value of the social benefits received by members is estimated at $8.1 billion in present value terms, or an average of $538.5 million each year.

Members are expected to spend over 14 million hours volunteering each year, in addition to patrols and delivering training.

2.4 Benefit 4: Increased physical activity

2.4.1 Summary

Being a member of an SLS club provides access to a range of volunteering and other recreational opportunities, many of which involve various forms of physical activity. For example, the process of qualifying to become a volunteer surf lifesaver requires completion of the Bronze Medallion. To complete this qualification, participants must have a high level of fitness; as a prerequisite, each participant must be able to swim 400 metres in nine minutes or less prior to undertaking any water training or assessment activities. Obtaining the qualification itself requires participants to demonstrate their surf skills through intense physical activities, including a 200 metre run followed by a 200 metre swim and another 200 metre run within eight minutes, patient lifts and carries without any equipment, and board and tube rescues.[27]

Once qualified, continuing in a volunteer surf lifesaver role requires members to maintain a high level of fitness, which is consistent with the level required to gain the Bronze Medallion. This is assured through the skills maintenance requirements of the award, which require members to complete an annual requalification activity under the supervision of an SLSA assessor to demonstrate their ongoing proficiency as a surf lifesaver.

In addition to the requirements to qualify as a surf lifesaver, patrolling members who meet their minimum patrol hour requirement are eligible to compete in surf sport competitions. A variety of members-only national competitions are hosted by SLSA, and state competitions are also hosted by each state or territory entity. These competitions allow patrolling members to apply their lifesaving skills in a competitive environment, which encourages members to maximise their capabilities through preparation and physical training so they can perform at their best at competitions.

For non-patrolling members, many clubs offer other opportunities that both support and encourage members to engage in physical activities. For example, many clubs offer gym facilities, which are increasingly available to those who may want to join the gym but prefer not to become involved with other club activities.

The health and wellbeing benefits of regular physical activity are well documented in research, and include:

- Reduced risk of cardiovascular disease
- Reduced risk of type 2 diabetes
- Improved blood pressure, cholesterol and blood sugar levels
- Reduced risk of some cancers
- Reduced risk of and improved management of mental health issues
- Assistance with weight loss
- Increased muscle and bone strength.[28]

The Australian Department of Health publishes guidelines on physical activity, which are designed to help Australians achieve sufficient physical activity to realise the benefits for their health. For adults aged 18 to 64 years, the guidelines recommend accumulating minimum of 150 minutes of moderate intensity physical activity or 75 minutes of vigorous intensity physical activity each week, or an equivalent combination of both moderate and vigorous activities. The guidelines also recommend that people should be active most days of the week, and do muscle strengthening activities on at least two days each week.

The Australian Institute of Health and Welfare (AIHW) defines physical inactivity as an adult who did not participate in sufficient regular physical activity to gain a health benefit. Similar to the Department of Health guidelines, the AIHW indicator of insufficient physical activity for adults aged 18 to 64 years old is measured as those completing less than 150 minutes of moderate intensity physical activity, or 75 minutes of vigorous intensity physical activity, across five sessions per week. For adults aged 65 years and older, the AIHW indicator of insufficient physical activity is measured as those completing less than 30 minutes of moderate or vigorous intensity physical activity on at least five days per week. In 2017-18, more than half of all adults (55%) across Australia did not participate in sufficient physical activity for their age group.[29]

In contrast, the findings from the survey indicate that the majority of SLS members (67%) are currently sufficiently physically active based on the Department of Health guidelines on physical activity. For many members, being a part of SLS encourages them to live a more active and healthier lifestyle, which ultimately benefits their physical and mental health. As a result of achieving the national standards of sufficient physical activity, these members are at a reduced risk of developing a range of serious chronic health conditions and diseases, which reduce a person's quality of life and may result in early mortality. Therefore, the value of increased physical activity for members as a result of their involvement with SLS is estimated by measuring the avoided costs of developing a health condition linked to physical inactivity.

2.4.2 Key inputs and assumptions

2.4.2.1 The cost of physical inactivity

Physical inactivity is associated with an increased risk of several chronic health conditions and diseases. In 2015, physical inactivity was associated with over 121,000 disability-adjusted life years (DALY).[30] The DALY is a measure of disease burden and reflects the number of years lost due to ill health, disability or early death. In other words, across Australia, insufficient physical activity resulted in the premature loss of over 121,000 years of life, either due to people dying prematurely or suffering from conditions which decreased their quality of life.

It may seem extreme to suggest that insufficient physical activity results in some people dying prematurely. However, the analysis considers that insufficient physical activity leads to an increased risk of several diseases identified by the AIHW, including bowel cancer, breast cancer, coronary heart disease, stroke, type 2 diabetes and uterine cancer. Each of these diseases may, in time, lead to premature death or a lower quality of life.

The total burden of diseases linked to physical inactivity in 2015 is estimated at $26.2 billion in 2020 dollars. This is based on the estimated value of a statistical life year used in this analysis of $216,340 (see section 2.2.2.3). This burden is largely accounted for by the older population, with 67% of the total burden associated with Australians aged 65 years and older.

The *National Health Survey 2014-15* found that more than 9.6 million Australian adults were insufficiently physically active.[31] The proportion of the population that were insufficiently physically active increased with each age group, ranging from 48% of those aged 18-24 years to 65% of those aged 65 years and older.

Using the estimated total cost of physical inactivity in Australia, and the number of people who were insufficiently physically active, an estimate of the average cost per insufficiently physically active person was derived. The average cost of physical inactivity per person is estimated at $2,709.99. The estimated cost per person varies greatly with age, with a cost of $57.97 for each person aged between 15 and 24 years, and $22,200.10 per person for those aged over 85 years.

2.4.2.2 Number of members who would be insufficiently physically active without SLS

As part of the survey, members were asked to indicate the number of minutes of moderate and vigorous intensity exercise they performed in the past week and how much exercise they normally do in the off season compared to the surf season. Moderate intensity exercise was defined as when a person's breathing quickens but they are not out of breath; it includes activities such as brisk walking, swimming, yoga and light cycling. Vigorous intensity exercise was defined as when a person's breathing is deep and rapid and includes activities such as running, interval training, hill hiking and rapid or uphill cycling. Members were also asked to indicate the days of the past week on which they performed their exercise sessions.

The findings from the survey indicate that patrolling members perform an average of 221 minutes of moderate intensity exercise and 122 minutes of vigorous intensity exercise each week. Non-patrolling members were found to have performed a similar amount of exercise, with an average of 220 minutes of moderate intensity exercise and 119 minutes of vigorous intensity exercise per week. On average, both patrolling and non-patrolling members performed exercise on 5.4 days per week.

Based on the survey findings and the Department of Health guidelines on physical activity, it is estimated that 67% of SLS members are sufficiently physically active. This proportion is significantly higher than the 45% of Australian adults that were sufficiently physically active in 2017-18, as reported by the AIHW (see section 2.4.1).

To credibly estimate the value of increased physical activity for members as a result of their involvement with SLS, it must be established whether members who are currently sufficiently physically active would remain so if they were not involved with SLS. This concept is difficult to ascertain. A potential approach is to assume that in the absence of SLS, the proportion of members who would remain sufficiently physically active would match the proportion of the Australian population (45%). However, this approach ignores the possibility that many SLS members are people who intrinsically value a healthy and active lifestyle; therefore, in the absence of SLS, it is entirely possible that most members would still maintain a high level of physical activity in other forms of recreation.

To account for this possibility, members were asked as part of the survey how they expect their level of exercise would change if they were no longer a member of their SLS club. The majority of members (74%) indicated that they didn't expect the amount of exercise they do would change. Members were also asked to provide a reason for their response, with many respondents using the free-text response field to state that their level of exercise would not change because they would simply participate more in another sport or fitness activity. This includes those who indicated that they would take up an entirely new activity and those who already participate to a large extent in another activity outside of SLS. Only 4% of members indicated that they would perform more exercise each week if they were no longer a member of SLS, with 37% of these members suggesting this was because they would have more time to exercise.

Almost a quarter of members (23%) indicated that they would do less exercise each week if they were no longer a member of their SLS club. The main reasons given for this were that members do much of their exercise in order to remain fit for their role with SLS (33%) and because they do much of their exercise as part of their membership, including participating in beach patrols and surf sports (33%).

However, for many members who indicated that they would do less exercise if they were no longer a member of SLS, the analysis found that they would still be considered sufficiently physically active according to the Department of Health guidelines on physical activity. This finding was derived by weighting responses for minutes of exercise per week, depending on whether a member had indicated that they would do 'less than half' of what they currently do or 'a half or more' of what they currently do if they were no longer a member of SLS.

Using this approach, the analysis estimates that of the members who are currently sufficiently physically active, 4.8% of them would no longer be sufficiently active if they were not a member of SLS. This reflects about 5,485 people when applied to all patrolling and non-patrolling members in 2018-19. Due to their involvement with SLS, these members are at a reduced risk of developing a range of serious chronic health conditions and diseases linked to physical inactivity. Therefore, these members experience positive health benefits that are directly attributable to their involvement with SLS.

2.4.3 Estimated value

Over the period of analysis, it is estimated that more than 548.1 disability-adjusted life years (DALYs) will be avoided as a result of increased levels of physical activity among members due to their involvement with SLS; this reflects an average of 36.5 avoided DALYs each year.

The value of these avoided DALYs is estimated at $101.4 million in present value terms, or an average of $6.8 million each year.


SURF
LIFE SAVING

3 Counting the costs

In delivering its coastal safety, lifesaving and education services, SLSA and its related entities incur a variety of costs, which are considered in the analysis.

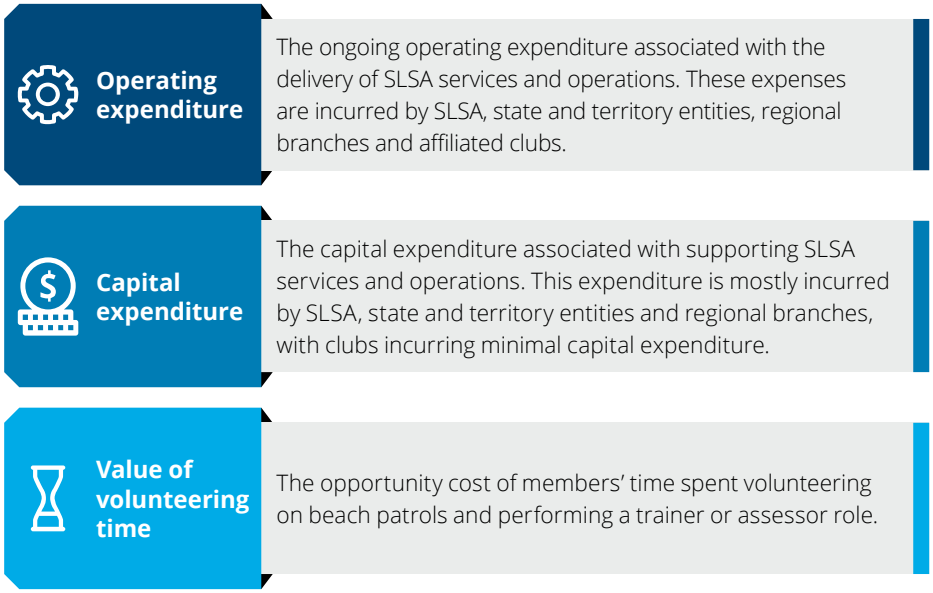
Three main sources of costs are estimated, which include:

1. Operating expenditure
2. Capital expenditure
3. Value of volunteering time.

A brief description of each of the costs is presented in Figure 3.1.

These costs are discussed in the following sections, along with the approach that has been used in estimating their value.

Figure 3.1: Summary of estimated costs



3.1 Cost 1: Operating expenditure

SLSA, state and territory entities, branches and affiliated clubs incur operating expenditure associated with the delivery of their services and operations. To estimate total operating expenses for SLSA and its related entities, financial data was collected from a combination of publicly available financial statements and club-level financial data held by the various state and territory entities. In total, financial data was collected for 354 individual SLS entities.[32]
The operating expenses represent the largest proportion (73%) of total costs incurred from 2014-15 to 2018-19, with a total value of $1.3 billion in 2020 dollars.[33] This excludes any expenses that relate to distributions between SLS entities.

Total operating costs averaged $257.4 million per year between 2014-15 and 2018-19. Across all entities (SLSA, state centres, branches and clubs), the main expense items relate to the delivery and servicing of member programs and services associated with lifesaving, education, training, member development, helicopter and support operations, insurance and building expenses.

Between 2014-15 and 2018-19, total operating costs increased by an average annual growth rate of 2.4% in real terms. Therefore, the analysis assumes that operating costs for SLSA entities will continue to increase beyond 2018-19 at a rate of 2.4% per year. This suggests that over time, as the SLS movement continues to grow both in terms of the number of members and its core services and operations, it is expected that the ongoing operating expenses associated with the running of the organisation will also continue to increase. Over the period of analysis, total operating expenses for all entities is estimated at $3.7 billion in present value terms, or an average of $248.8 million each year.

3.2 Cost 2: Capital expenditure

Compared to operating expenses, total capital expenditure incurred by SLSA and its related entities is relatively small, accounting for only 3% of total costs incurred from 2014-15 to 2018-19 with a total value of $53.8 million in 2020 dollars.[34] One reason for this is that the majority of club facilities are leased, with few clubs holding ownership of their land and facilities. Therefore, most clubs do not incur significant capital expenditure. Instead, capital expenditure is mostly incurred by SLSA and the state and territory entities, and so data was collected from publicly available financial statements for these entities.[35]

Total capital expenditure averaged $10.8 million per year between 2014-15 and 2018-19. For SLSA, state and territory entities and the branches, capital expenditure generally relates to the purchase of equipment on behalf of clubs to support them in carrying out their patrolling duties. This may include motor vehicles, helicopters, inflatable rescue boats (IRBs) and jet skis. It may also relate to the purchase or refurbishment of buildings, land and leasehold improvements.

From 2014-15 to 2018-19, total capital expenditure decreased by an average of 13.1% each year in real terms. However, capital costs are not expected to continue to decrease for an extended period of time. Instead, capital expenditure is likely to fluctuate from year to year, with the timing of those fluctuations difficult to predict.

Therefore, the analysis assumes that capital costs for SLSA entities will remain constant during the forecast period. Beyond 2018-19, the annual average of total capital expenditure incurred between 2014-15 and 2018-19 ($10.8 million) is used for this purpose. Over the period of analysis, total capital expenditure for all entities is estimated at $139.6 million in present value terms, or an average of $9.3 million each year.

3.3 Cost 3: Value of volunteering time

As discussed in section 2.3.1, the time spent volunteering represents an opportunity cost to members. In 2018-19, a total of 43,092 volunteer surf lifesavers spent more than 1.3 million hours of their own time patrolling beaches across Australia.[36] This reflects an average of 32.0 hours for each patrolling member. The time spent by volunteer surf lifesavers on beach patrols is a major factor that underpins the benefits generated from avoided fatalities and critical injuries (see section 2.1), and therefore the opportunity cost of this time is included as a cost in the analysis.

It is assumed that each patrolling member will continue to complete a comparable number of patrol hours over the period of analysis, and so the 5-year average of 31.9 hours is used to forecast the total number of patrol hours in the future. Consistent with the approach used in estimating the value of the personal benefits that SLSA members receive from their membership, the number of patrolling members is forecast to increase over time in line with Australian population growth forecasts (see section 2.3.2.1). This growth is applied to the total of 43,092 patrolling members in 2018-19. Over the period of analysis, it is estimated that volunteer surf lifesavers will collectively spend over 21.8 million hours on patrol at Australian beaches, or an average of over 1.4 million hours each year.

Both patrolling and non-patrolling members also volunteer their time to assist with the delivery of training courses. As estimated as part of Benefit 2 (see section 2.2), these training programs generate benefits both for the members who undertake the training as well as for the Australian community from having more members of the population equipped with CPR skills. The time spent by volunteers in providing this training also represents an opportunity cost to members.

The findings from the survey indicate that 19% of patrolling members and 3% of non-patrolling members volunteer as either a trainer or assessor. In addition, it was found that on average, patrolling members who volunteer as trainers or assessors commit an average of 1.4 hours each week, while non-patrolling trainers and assessors commit an average of 0.2 hours per week. These estimates of average weekly hours reflect that members spend more time delivering training courses during the surf season compared to the off season. Using these survey findings, it is estimated that in 2018-19, patrolling and non-patrolling members committed a total of 612,759 hours to volunteering as trainers and assessors.

It is assumed that the proportions of patrolling and non-patrolling members who volunteer as either a trainer or assessor will remain unchanged in the future.

Therefore, the number of trainers and assessors in the future is based on the forecasts of the total number of patrolling and non-patrolling members over time, which were established in estimating the value of the personal benefits that SLSA members receive from their membership (see section 2.3.2.1). Using this approach, it is estimated that members will collectively spend over 9.7 million hours in delivering training courses over the period of analysis. This reflects an average of 647,034 hours each year.

Consistent with the approach used to estimate the value of the personal benefits that SLSA members receive from their membership, an average hourly wage of $43.65 is used to capture the opportunity cost of each hour of volunteering (see section 2.3.2.2). This reflects the opportunity cost of members' time by estimating the income that may have been earned if they spent their time working in paid employment, rather than volunteering on beach patrols or delivering training courses.

Over the period of analysis, it is estimated that the volunteer hours spent by members on beach patrols and delivering training courses represents an opportunity cost of $1.2 billion in present value terms, or an average of $78.5 million each year.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4 Qualitative benefits

The social and economic benefits generated by SLSA for the Australian community are wide ranging. Although this analysis presents an estimate of the value of SLSA's services in economic terms, not all of the benefits can be measured in this way. For some benefits, it is difficult to attribute a meaningful measure of economic value.

This section identifies three benefits that could not be reliably quantified as part of the analysis. The following benefits are discussed:

1. Improved mental health
2. Positive pathways for young people
3. Improved water safety for children.

4.1 Improved mental health

This study presents an estimate of the value of increased physical activity for members as a result of their involvement with SLS, which leads to benefits for their physical health in terms of a reduced risk of developing a serious chronic health condition or disease (see section 2.4).

However, evidence suggests that being a part of SLS may also lead to benefits for members' mental health, which is more difficult to measure in economic terms.

First, the increased physical activity of members also contributes to improved mental wellbeing. Exercise promotes the release of feel-good chemicals in the brain – like endorphins and serotonin – and supports improved sleep by allowing one to rest more fully at night, leading to increased energy levels during the day.[37] As a result, regular physical activity is associated with better mental health and emotional wellbeing and a reduced risk of developing a mental illness.

Studies have also revealed that physical activity may be beneficial as a complementary treatment for mental illnesses, including depression and anxiety.[38] Some studies also suggest that in treating depression, exercise may be as helpful as psychological therapy and antidepressants.[39]

There is also a social connection aspect of exercise. Many forms of exercise and sports take place as a shared activity with others, and often as part of a team; this is also true of surf sport events and competitions hosted and supported by SLSA.

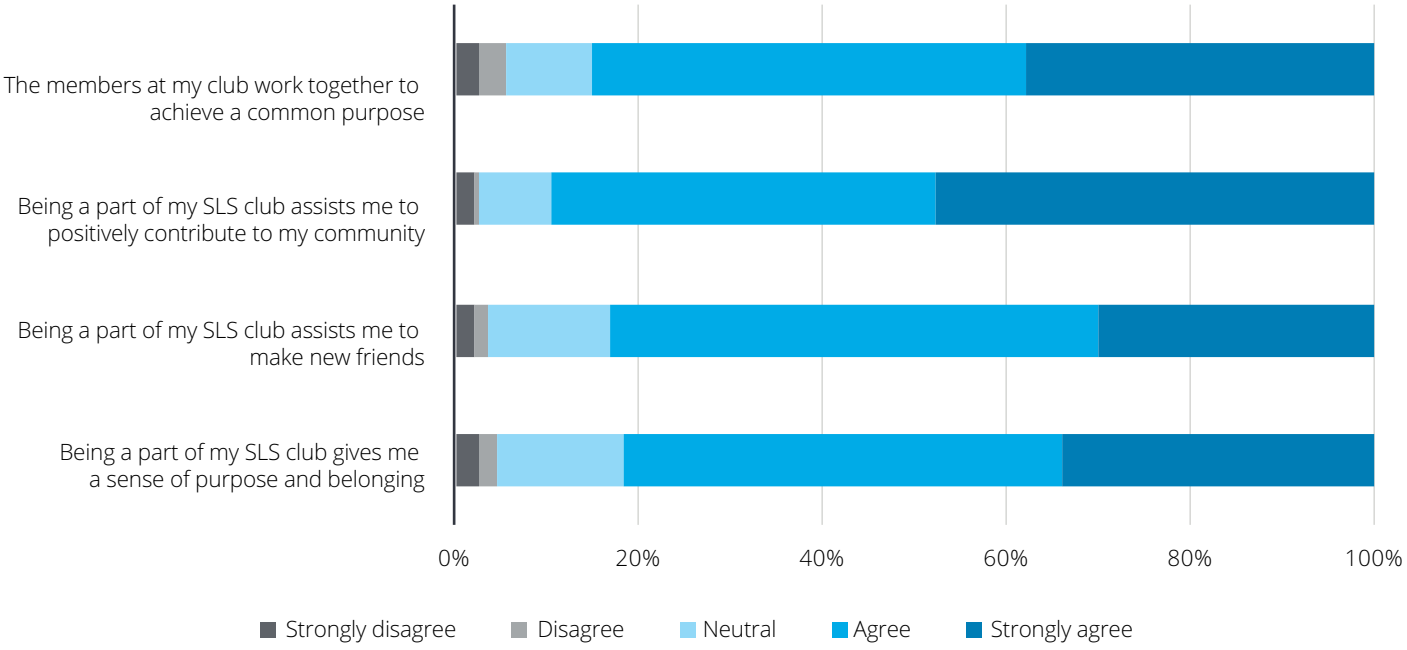
Participation in team sports can often assist a person to make new friends and build their personal support network, learn the value of teamwork and how to deal with setbacks and disappointments, and to develop leadership skills that are relevant in many areas of life.[40]

Many of these benefits also have relevance to being a part of a community group or organisation such as an SLS club, which provides opportunities for social connection. People with positive social connections report better quality and satisfaction with their life, are less likely to suffer from dementia, and experience less trouble sleeping. Being part of a group of like-minded people with shared interests also contributes to a sense of belonging and purpose.[41]

As part of the member survey, a range of statements were posed to both patrolling and non-patrolling members. These included whether being a part of their club gives them a sense of purpose and belonging, assists members with making new friends and contributing to their community, and whether they felt the members at their club worked together to achieve a common purpose. On average, 85% of members either agreed or strongly agreed with the relevant statements (see Chart 4.1).

These findings do not provide conclusive evidence that being a member of an SLS club results in positive mental health benefits; however, they do suggest that most members feel they experience personal benefits related to their mental health and wellbeing as a result of their membership. In addition, there is credible evidence to suggest that members' participation in surf sports and other physical activities related to their SLS involvement contributes to improved mental health and emotional wellbeing, and a lower risk of developing a mental illness.

Chart 4.1: Responses to statements about the experience of being part of an SLS club



Source: Deloitte Access Economics' national survey of SLS members.

4.2 Positive pathways for young people

A comprehensive study undertaken by the Australian Institute of Criminology investigated whether sport and organised physical activity programs positively impact on youth antisocial behaviour. Over 600 programs focusing on sport and physical activity were identified and analysed by means of literature review, surveys and case studies. The study found that well-structured sport and physical activity programs may assist in reducing youth antisocial behaviour. While this does not suggest that sport and physical activity programs have a direct impact on reducing antisocial behaviour, the report noted that these programs are an important mechanism through which positive personal and social development may occur.[42]

SLS provides opportunities for children aged five to under 14 years to enjoy the beach in a safe environment through the Nippers program. In 2018-19, 62,603 children across Australia participated in the Nippers program, across all age groups.[43] Delivered at beaches across Australia by SLS clubs, the Nippers program involves weekly activities which are generally scheduled on Sunday mornings during surf season. Nippers is designed to ensure children have fun at the beach while participating in lessons that provide them with a pathway to becoming an experienced participant in both lifesaving and surf sports.

The program progressively introduces knowledge and skills through lessons that are tailored to age groups, with each age group having between 10 and 16 lessons specific to their age and expected abilities. The program also acts as a learning pathway toward the Surf Rescue Certificate, which members can commence from the age of 13 years.

Completion of the Surf Rescue Certificate provides children with the opportunity to become involved with beach patrols, encouraging them to become involved in serving their community from a young age. This also provides a pathway to continued patrol service as an adult, with young patrolling members also able to complete the Bronze Medallion when they reach the age of 15 years. As long as a member completes the annual requalification process to demonstrate their ongoing proficiency, they may continue to participate in volunteer beach patrols for years to come.

In addition, many patrolling members participate in surf sports, with some competing in local, branch, state, interstate and national competitions. These competitions allow patrolling members to apply their lifesaving skills in a competitive environment (see section 2.4.1), providing pathways for members to maximise their capabilities and continue to compete at higher levels.

Although no direct link can be established between SLS programs and reducing antisocial behaviour in young people, the programs provide a sports and physical activity pathway that is available to children from a young age and leads to increasing opportunities as a member progresses in age and skill. Indeed, one of the aims of the Nippers program – apart from educating children in water safety – is to develop children into adult surf lifesavers who continue to serve the Australian community and carry on the legacy of the SLS movement into the future.

4.3 Improved water safety for children

This study presents an estimate of the value of SLSA's education and training programs in terms of the benefit to the community from having more people equipped with CPR skills, and the benefit to members themselves who may secure employment as a result of completing an SLSA award (see section 2.2). However, there are other benefits that may result from SLSA's education and training programs, which are more difficult to measure in economic terms.

One example is the improvement in coastal water safety skills for children who complete programs with SLSA, including SurfBabies (ages two to four years), SurfKids (ages five to seven years) and the Nippers program (see section 4.2). While the literature on surf awareness programs for children specifically is limited, a study by Brenner et al (2009) found that participating in formal swimming lessons is associated with an 88% reduction in the risk of drowning in children aged one to four years.[44] This finding may also have relevance for SLSA programs, which aim to build skills in water safety, beach safety and surf awareness, while also engaging parents to increase their ability to provide appropriate supervision to their children.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5 Total social and economic value

5.1 Summary of cost-benefit analysis outcomes

Over the 15-year period of analysis, it is estimated that Surf Life Saving Australia (SLSA) will generate a total net benefit to the Australian community of $96.9 billion (total benefits less total costs). In addition, the services and operations of SLSA around the country – both now and in the future – yield a benefit-cost ratio (BCR) of 20.2. This means that for every $1.00 invested into SLSA, a return of $20.20 is achieved. Table 5.1 summarises the benefits and costs estimated in the analysis in present value terms.

The total net benefit of Surf Life Saving Australia to the Australian community is $97 billion over the 15-year period of analysis.

Table 5.1: Summary of cost-benefit analysis outcomes, present value terms

Cost-benefit analysis outcome	
Benefits	**$ million**
Coastal safety and lifesaving	$91,630
Education and training	$2,101
Social benefits of volunteering	$8,078
Increased physical activity	$101
Total benefits	**$101,910**
Costs	**$ million**
Operating expenditure	$3,731
Capital expenditure	$140
Value of volunteering time	$1,178
Total costs	**$5,049**
Net benefits	**$96,861**
BCR	**20.2**

Source: Deloitte Access Economics. Note: The numbers in this table may not add due to rounding.

The net benefit and the high BCR is largely driven by the value of Benefit 1, which estimates the value of SLSA's coastal safety and lifesaving services. This benefit accounts for 90% of total benefits, or $91.6 billion in present value terms.

The significant value of this benefit reflects the value of lives saved and critical injuries avoided as a result of the actions of SLSA volunteer surf lifesavers and paid lifeguards. The analysis estimates that each year, the rescues and preventative actions performed by surf lifesavers and ALS lifeguards will prevent 1,363 coastal deaths and 818 critical injuries from occurring. The value attached to these outcomes is high, with each life saved as a result of an action performed by SLSA valued at $4.98 million in the analysis, and each critical injury avoided valued at $429,466 (see section 2.1.2.3).

Even if all other benefits generated by SLSA were ignored, the social benefits of volunteering alone – which reflect the personal benefits received by members as a result of their volunteering – is sufficient to cover the costs associated with deriving all of the estimated benefits. This illustrates the significant benefits generated by SLSA for its members and the Australian community.

5.2 Sensitivity testing

Five sensitivity tests were undertaken by varying the key assumptions in the analysis. This allows the relative impact that these assumptions have on the net benefit and the BCR to be evaluated. The sensitivity tests undertaken include:

- Varying the value of a life
- Varying the proportion of rescues that would have resulted in a fatality or critical injury
- Varying the proportion of preventative actions that would have resulted in a rescue
- Varying the discount rate
- Varying the period of analysis.

The results of these sensitivity tests are discussed below.

5.2.1 Test 1: Varying the value of a life

Each life saved – or fatality avoided – as a result of an action performed by SLSA volunteer surf lifesavers and paid lifeguards is valued at $4.98 million in the analysis (see section 2.1.2.3). This aligns with guidance published by the Department of the Prime Minister and Cabinet on estimates that may be used for the value of a statistical life and the value of a statistical life year.[45] However, a study by Royal Life Saving Society Australia provides an alternative value of a life.

For every $1.00 invested into Surf Life Saving Australia, a return of $20.20 is achieved.

Table 5.2: Outcome of Test 1 – Varying the value of a life

CBA outcome	Value of a life: $4.98 million	Value of a life: $4.56 million
Total benefits ($ million)	$101,910	$94,667
Total costs ($ million)	$5,049	$5,049
Net benefits ($ million)	**$96,861**	**$89,618**
BCR	**20.2**	**18.8**

Source: Deloitte Access Economics.

This study found that the average cost of a fatal drowning incident is approximately $4.25 million in 2016 dollars.[46] This reflects a cost of $4.56 million in 2020 dollars. This estimate takes into account the value of hospital and medical costs, as well as the prematurity of death based on the age of the victim. As shown in Table 5.2, using this alternative estimate of the value of a life – or an avoided fatal drowning – does not significantly affect the net benefit and BCR.

5.2.2 Test 2: Varying the proportion of rescues that would have resulted in a fatality or critical injury

This analysis uses assumptions that were originally established in a 2005 study to estimate the incidence of fatalities and critical injuries in the absence of SLSA's lifesaving services (see section 2.1.2.2). That study found that in the absence of action by surf lifesavers and ALS lifeguards, 5% of all rescues would have resulted in a fatality and 3% of all rescues would have resulted in a critical injury.[47]

The findings from the survey undertaken as part of the current study indicate that the majority of patrolling members consider these assumptions to be reasonable, and most also indicated that they felt no changes were needed (see section 2.1.2.2). However, for those who indicated that a change in the assumptions was required, most suggested that the proportion of rescues that would have resulted in either a fatality or a critical injury should be higher (see Chart 2.2).

For those who suggested that the proportions should be higher, the majority (56%) suggested that the proportion of rescues that would have resulted in a fatality should be between 5% and 10%, while a further 18% of patrolling members felt it should be between 10% and 20%. The findings relating to the proportion of rescues that would have resulted in a critical injury were more varied, with 75% of patrolling members suggesting that the proportion of rescues that would have resulted in a critical injury should be between 3% and 20%. This included 18% who suggested it should be between 3% and 5%, 40% who suggested it should be between 5% and 10%, and 18% who suggested it should be between 10% and 20%.

On average, patrolling members indicated that in the absence of SLSA actions, 10% of all rescues would have resulted in a fatality and 8% of all rescues would have resulted in a critical injury. These findings reflect the average across all respondents, including those who indicated that the proportions should be lower, the majority who indicated no change was needed, and those who suggested the proportions should be higher.

Based on these findings, a sensitivity test is undertaken to investigate the impact of increasing the proportions of fatalities and critical injuries in a way that aligns with the averages across all respondents. In addition, a more moderate increase that aligns with the midpoint of the increase is tested. Table 5.3 presents the results of this sensitivity test, which demonstrates that the net benefit and BCR increase significantly in response to an increase in the estimated proportions of rescues that would have resulted in a fatality or critical injury.

Table 5.3: Outcome of Test 2 – Varying the proportion of rescues that would have resulted in a fatality or critical injury

CBA outcome	Fatalities: 5.0% Critical injuries: 3.0%	Fatalities: 7.5% Critical injuries: 5.5%	Fatalities: 10.0% Critical injuries: 8.0%
Total benefits ($ million)	$101,910	$149,228	$196,547
Total costs ($ million)	$5,049	$5,049	$5,049
Net benefits ($ million)	**$96,861**	**$144,180**	**$191,498**
BCR	**20.2**	**29.6**	**38.9**

Source: Deloitte Access Economics.

5.2.3 Test 3: Varying the proportion of preventative actions that would have resulted in a rescue

Similar to the proportion of rescues that would have resulted in a fatality or critical injury, this analysis uses an assumption from the 2005 study to estimate the proportion of preventative actions that would have resulted in a beachgoer needing to be rescued (see section 2.1.2.2). That study estimated that in the absence of an intervention, 1% of all preventative actions would have resulted in a rescue. A small proportion of these avoided rescues would then be expected to have resulted in a fatality or critical injury.

Although the survey findings from the current study indicate that the majority of patrolling members consider this assumption to be reasonable, most still felt that the estimated proportion of preventative actions that would have resulted in a rescue should be higher than 1% (see Chart 2.3). For those who suggested that the proportion should be higher, the majority (58%) suggested that it should be between 1% and 10%. This included 23% who suggested it should be between 4% and 5% and 21% who suggested it should be between 9% and 10%.

On average, patrolling members indicated that in the absence of an intervention, 12% of all preventative actions would have resulted in a beachgoer needing to be rescued. This finding reflects the average across all respondents, including those who indicated that the proportion should be lower, those who indicated no change was needed, and the majority who suggested the proportion should be higher.

Based on this finding, a sensitivity test is undertaken by increasing the proportion of preventative actions. However, rather than aligning the sensitivity test with the averages across all respondents, a more modest increase is tested.

As shown in Table 5.4, increasing the proportion of preventative actions that would have resulted in a rescue has a significant impact on the net benefit and BCR, even when compared to the impact of increasing the proportions of rescues that would have resulted in a fatality or critical injury (see section 5.2.2). This is mainly due to the large number of preventative actions performed over the period of analysis, with a total of more than 24.0 million preventative actions compared to 168,128 rescues (see section 2.1.2.1).

Table 5.4: Outcome of Test 3 – Varying the proportion of preventative actions that would have resulted in a rescue

CBA outcome	Preventative actions: 1.0%	Preventative actions: 2.0%	Preventative actions: 3.0%
Total benefits ($ million)	$101,910	$155,607	$209,305
Total costs ($ million)	$5,049	$5,049	$5,049
Net benefits ($ million)	**$96,861**	**$150,559**	**$204,256**
BCR	**20.2**	**30.8**	**41.5**

Source: Deloitte Access Economics.

5.2.4 Test 4: Varying the discount rate

Future benefits and costs estimated in this analysis are discounted at the rate of 7.0% per annum to derive their present values (see Appendix A, section A.2.6). This aligns with guidance published by the Department of the Prime Minister and Cabinet on the use of CBA for policy proposals.[48]

A sensitivity test is undertaken to investigate the relative impact of the discount rate on the net benefit and the BCR, which includes testing both a lower (4.0%) and a higher (10.0%) discount rate. As shown in Table 5.5, applying either a lower or a higher discount rate does not significantly affect the net benefit and BCR.

Table 5.5: Outcome of Test 4 – Varying the discount rate

CBA outcome	Discount rate: 4.0%	Discount rate: 7.0%	Discount rate: 10.0%
Total benefits ($ million)	$108,333	$101,910	$96,550
Total costs ($ million)	$5,378	$5,049	$4,774
Net benefits ($ million)	**$102,955**	**$96,861**	**$91,777**
BCR	**20.1**	**20.2**	**20.2**

Source: Deloitte Access Economics.

5.2.5 Test 5: Varying the period of analysis

The period of analysis for this CBA is defined as a timeframe of 15 years, from 2014-15 to 2028-29 (see Appendix A, section A.2.3). This period reflects five years of historic operations and 10 years of forecast activities and outcomes.

In 2018, Deloitte Access Economics undertook a study for Surf Life Saving Western Australia to estimate the economic value of its activities to the Western Australian community.[49] This study employed a 25-year period of analysis, including five years of historic operations and 20 years of future activities and outcomes. To support comparison with the results of the WA study, a sensitivity test is undertaken by extending the period of analysis to 25 years to reflect 20 years of forecast activities and outcomes. In addition, a more moderate extension to the timeframe is also tested.

Table 5.6 presents the results of this sensitivity test. Extending the period of analysis has a substantial impact on the net benefit, largely because of the longer time period over which the benefits are realised. Despite the increase in the net benefit, the longer timeframe results in a small decrease in the BCR. This is mostly due to the impact of discounting of future benefits and costs. The discount factor applied increases in each successive year of the analysis, meaning that benefits and costs occurring in more distant years into the future are subject to larger discount factors. This gradually erodes the values of benefits and costs over time, with the larger benefits seeing the most significant decreases.

Table 5.6: Outcome of Test 5 – Varying the period of analysis

CBA outcome	Period of analysis: 15 years	Period of analysis: 20 years	Period of analysis: 25 years
Total benefits ($ million)	$101,910	$123,486	$139,772
Total costs ($ million)	$5,049	$6,204	$7,117
Net benefits ($ million)	**$96,861**	**$117,282**	**$132,655**
BCR	**20.2**	**19.9**	**19.6**

Source: Deloitte Access Economics.


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Appendix A: Methodology

A.1. About cost-benefit analysis

A.1.1. What is cost-benefit analysis?

The basis of a cost-benefit analysis (CBA) is simple: for a given policy or investment, it compares the total estimated costs to the community and economy with the total estimated benefits. As such, a CBA determines whether the benefits outweigh the costs, and if so, to what extent.

CBAs are often undertaken to support government and commercial decisions regarding investment. However, CBAs can also be used to evaluate policy decisions about taxation, regulation and program spending.

The rationale for using a CBA as a decision-making tool is strong, given that public funds come at a significant cost to the economy (through taxes collected by local, state, and Commonwealth governments), and private funds can be invested into various other opportunities. Therefore, understanding the benefits generated from a particular investment is of significant value.

A.1.2. The logic of cost-benefit analysis

In undertaking a CBA, the total estimated benefits of a policy or investment are compared with the total estimated costs in a discounted cash flow (DCF) framework, to determine whether the benefits exceed the costs in present value terms. The net return is expressed in the form of a ratio, referred to as the benefit-cost ratio (BCR).

A BCR greater than one indicates that net benefits related to the policy or investment are greater than net costs, suggesting value in undertaking the investment (or for every $1.00 of investment, a return greater than $1.00 is achieved). The reverse is true if the BCR is below one. However, not all benefits are quantifiable under a CBA framework. In many cases, significant, non-quantifiable benefits are relevant and must be taken into account when investment decisions are made. As such, a CBA should not be the sole tool used to support decision-making.

Nonetheless, a CBA provides a robust framework for analysing information in a logical and consistent manner. It can assist governments and private entities to determine if a policy or investment efficiently achieves a stated objective. This can assist decision-makers to optimise the level of funding allocated to an initiative, or to adjust the scope of the initiative to help deliver the highest net return.

A.2. Approach to undertaking this cost-benefit analysis

A.2.1. Summary of approach

This CBA compares the incremental costs and benefits associated with the services and operations of SLSA between a 'base case' and an 'investment case' scenario over a 15-year period, from 2014-15 to 2028-29. Five key steps have been taken to prepare this CBA:

1. Scenario definition
2. Period of analysis definition
3. Benefit specification and estimation
4. Cost specification and estimation
5. Discounted cash flow modelling.

A.2.2. Scenario definition

A.2.2.1. Base case

Defining a counterfactual scenario, or base case, is a critical component of a CBA. The benefits and costs are measured as the incremental change from the base case. This ensures that only the benefits and costs that can be reasonably attributed to the investment are included in the analysis.

For this analysis, the base case is defined as a scenario in which the services and operations of SLSA are entirely non-existent. This base case ensures that the full value derived from SLSA's services and operations is captured in the analysis.

For example, if the 'service gap' left by SLSA was assumed to be fulfilled by another provider in the base case, this would reduce the incremental benefits attributable to SLSA in the analysis. Although such a scenario is possible, there exists no evidence to suggest that this would actually occur. As such, the base case used in this analysis implicitly assumes that in the absence of SLSA, coastal lifesaving services would not be provided on Australian beaches.

A.2.2.2. Investment case

The investment case of a CBA reflects a scenario where the economic benefits and costs associated with an investment are realised. This analysis defines the investment case as the status quo; that is, a scenario in which SLSA operates in its current capacity in Australia, providing coastal safety and lifesaving services, and education and training to its members and the community.

A.2.3. Period of analysis definition

The period of analysis for this CBA is defined as a timeframe of 15 years, from 2014-15 to 2028-29. This period has been selected as it reflects five years of historic operations and 10 years of forecast activities and outcomes. The forecasts over the period of analysis have been established by drawing on data and evidence available from the historic five-year period.

A.2.4. Benefit specification and estimation

The specification of benefits in a CBA involves identifying the impacts of the investment that result in positive or desirable effects. To be included within the CBA framework, the benefits must be measurable; that is, it must be possible to attribute each benefit with a meaningful measure of economic value.

For the purposes of this analysis, four sources of benefits have been identified as measurable:

1. Coastal safety and lifesaving
2. Education and training
3. Social benefits of volunteering
4. Increased physical activity.

Chapter 2 provides a description of each of the benefits, along with the key data inputs and assumptions that have been used in estimating their value.

A.2.5. Cost specification and estimation

The specification of costs in a CBA takes into account all the impacts of the investment that produce negative or undesirable effects, including what has to be given up or forgone in order to implement the investment. Importantly, all costs that are incurred in achieving the benefits must be captured within a CBA.

This analysis considers three sources of costs:

1. Operating expenditure
2. Capital expenditure
3. Value of volunteering time.

These costs are described in Chapter 3, along with the approach that has been used in estimating their value.

A.2.6. Discounted cash flow modelling

Discounted cash flow modelling is undertaken to estimate the present values of future costs and benefits. The discounting of future costs and benefits to derive present values reflects the time value of money and uncertainty of future cash flows, and the fact that people generally attribute a higher value to consumption today than consumption in the future. The BCR is calculated by dividing the total present value of benefits by the total present value of costs.

Future benefits and costs are discounted at the rate of 7.0% per annum to derive their present values. This aligns with guidance published by the Department of the Prime Minister and Cabinet on the use of CBA for policy proposals.[50] As the analysis also considers five years of historical benefits and costs, which occur during the period 2014-15 to 2018-19, these benefits and costs are converted to present values by adjusting them to 2020 dollars.

A.3. Member survey

In undertaking this study, Deloitte Access Economics developed and fielded an online survey of the national SLSA member base. The purpose of the survey was to collect data that could be used to inform a range of assumptions required to undertake the analysis. The survey was targeted at topics that relate directly to the costs and benefits estimated as part of the CBA.

In total, 10,043 completed survey responses were received from members across all coastal states and territories of Australia. This included responses from 5,801 patrolling members and 4,242 non-patrolling members. Where the findings from the survey have been used to inform assumptions in the analysis, this has been identified and referenced within the report.

Appendix B: Previous studies

B.1. Summary of differences in previous studies

Over the years, SLSA has periodically undertaken and commissioned work which has sought to estimate the contribution, or value, generated by its activities for the Australian community. Previous studies undertaken have resulted in different estimates of the value that SLSA brings to the Australian community. A 2005 study resulted in a BCR of between 10.4 and 16.5, where the variation was dependent on whether the imputed value of salaries for volunteer surf lifesavers was included in the calculation of costs.[51] Similarly, a 2011 study resulted in BCR of between 21.7 and 29.3.[52]

Despite the variation in results, one thing remained consistent in both of these studies – the benefits of SLSA were found to far outweigh the costs. Each of these studies confirmed the unique, significant and ongoing value that SLSA brings to the Australian community and economy. The following sections consider the differences in key parameters or economic modelling techniques which led to different outcomes and results.

B.2. Economic modelling

In this study, the social and economic value of SLSA is estimated using a cost-benefit analysis, which compares the costs and benefits associated with SLSA's activities over 15 years. In comparison, the 2005 and 2011 studies both used input-based and output-based approaches. This involved comparing the output value at a point in time with the input value to derive a BCR.

The 2011 study was also different in that it estimated the flow-on economic impacts to the wider Australian community using a Computable General Equilibrium (CGE) model. This model measures the increase in GDP, employment and other economy-wide variables as a result of SLSA activities. This accounted for approximately $154 million in additional benefits in the 2011 study.

B.3. Costs

The total costs (or inputs) associated with SLSA's activities were calculated differently in the 2005 and 2011 studies. Both studies include two BCRs – one which does not include the imputed value of salaries for volunteer surf lifesavers as a cost, and one which does. The quoted BCRs of 16.5 in the 2005 study and 29.3 in the 2011 study do not include this as a cost.

This approach differs to the current study, which includes the opportunity cost of volunteer surf lifesavers' time as a cost, estimated at $78.5 million on average per annum (see section 3.3). For comparison, if the costs associated with salaries for volunteer surf lifesavers of $47.0 million and $50.1 million were included in the 2011 and 2005 studies, the BCRs would be 21.7 and 10.4 respectively. Also, in the previous studies, travel expenses incurred by volunteers were captured in these costs, unlike this study.

Another difference in the costs involves total club expenditure. This has increased to an average of $127.6 million per annum in 2020 dollars, as estimated in this study over the period of analysis. Previous annual expenditure amounts estimated were $84.7 million in the 2005 study and $116.6 million in the 2011 study.

B.4. Benefits

Total benefits (or outputs) associated with SLSA's services were calculated differently in the 2005 and 2011 studies.

The studies similarly estimate the benefit associated with avoided fatalities and critical injuries. While the value of benefits associated with avoided fatalities has consistently increased from an annual amount of $831.7 million in the 2005 study to $2.2 billion in the 2011 study, and finally to an average of $2.9 billion per annum in this study, the value of benefits associated with avoided critical injuries has decreased. In this study, the value of avoided critical injuries is estimated at $376.2 million per annum in 2020 dollars, whereas it was estimated at an annual amount of $568.3 million in the 2005 study and $1.2 billion in the 2011 study.

The main reason for this difference is the value attributed to an avoided critical injury. This study used a value based on research undertaken by Royal Life Saving Society Australia, which found that the average cost of a non-fatal drowning incident is approximately $400,000 in 2016 dollars. This reflects a cost of $429,466 in 2020 dollars (see section 2.1.2.3). In comparison, the 2005 study used the cost of permanent incapacitation to estimate this benefit ($1.8 million) and the 2011 study used the cost of spinal cord and traumatic brain injuries ($2.1 million).

In addition, while the value of first aid treatment was included as a benefit in the 2005 and 2011 studies – with annual values of $500,000 and $90,000 respectively – this is not included in the current study. However, this study includes the benefits relating to SLSA's education and training programs, the social benefits of volunteering, and the increased physical activity for members as a result of their involvement with SLS. These benefits were not included in previous studies.

Appendix C: CPR awards

The value of SLSA's education and training programs is estimated from two sources (see section 2.2.1). The first source of benefit is related to the lives saved by both SLSA members and members of the community that complete a first aid award. However, it is assumed that only awards that contain a CPR component will equip participants to save a person's life in an emergency situation (see section 2.2.2.1). Table C.1 provides a list of SLSA awards that were identified to equip participants with CPR skills, based on a review of the course competencies and outcomes.

Table C.1: SLSA awards with a CPR component

Award	Total member	Total commercial	Grand total
Patrolling Lifesaver Awards			
Bronze Medallion	6,729	17	6,746
Certificate II in Public Safety (Aquatic Rescue) PUA21012	6,427	208	6,635
Certificate III in Public Safety (Aquatic Search and Rescue) PUA31312	149	87	236
Gold Medallion (Advanced Lifesaving)	227	0	227
Surf Rescue Certificate (CPR Endorsed)	4,702	572	5,274
Emergency Care Awards			
Advanced Resuscitation Techniques [AID]	2,681	178	2,859
Apply first aid	124	1	125
Basic Emergency Care	47	1,192	1,239
Basic Life Support [AID]	45	0	45
First Aid [AID]	3,433	910	4,343
Provide advanced first aid HLTAID006	109	379	488
Provide advanced resuscitation HLTAID007	2,810	1,230	4,040
Provide basic life support	1,740	635	2,375
Provide cardiopulmonary resuscitation [CPR]	11,173	68,288	79,461
Provide first aid HLTAID003	4,373	28,455	32,828
Provide first aid in remote situation HLTFA302C	16	0	16
Provide first aid in remote situations HLTAID005	33	74	107
Remote Area First Aid	19	74	93
Resuscitation [AID]	2,031	6	2,037
Silver Medallion Advanced First Aid [AID]	20	0	20

Source: Surf Life Saving Australia, *Annual Report 2018-19*.

Limitation of our work

General use restriction

This report is prepared solely for the use of Surf Life Saving Australia. This report is not intended to and should not be used or relied upon by anyone else and we accept no duty of care to any other person or entity. The report has been prepared for the purpose of estimating the social and economic value of Surf Life Saving Australia's activities to the Australian community. You should not refer to or use our name or the advice for any other purpose.

Endnotes

1. Surf Life Saving Australia, *Annual Report 2018-19*.
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3. Surf Life Saving Australia, *National Coastal Safety Report 2019*.
4. Surf Life Saving Australia, *National Coastal Safety Survey 2019.*
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6. Surf Life Saving Australia, *Annual Report 2018-19*.
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8. The Beachsafe website can be accessed at https://beachsafe.org.au/.
9. A preventative action refers to a situation in which an SLSA volunteer surf lifesaver or paid lifeguard intervenes in order to prevent the need for a potential rescue. For example, surf lifesavers or lifeguards may advise swimmers not to enter the water if conditions are unfavourable, or they may advise swimmers to leave the water if a shark is spotted in the area.
10. The Public Safety Training Package is developed by Australian Industry Standards. Training packages are designed to specify the skills and knowledge required to perform effectively in the workplace through units of competency. They also describe how these units can be packaged into nationally recognised qualifications aligned to the Australian Qualifications Framework and industry recognised skill sets.
11. The Allen Consulting Group, *Valuing an Australian Icon: The Economic and Social Contribution of Surf Lifesaving* in Australia (2005).
12. PwC, *What is the economic contribution of Surf Life Saving in Australia* (2011).
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15. The Allen Consulting Group, *Valuing an Australian Icon: The Economic and Social Contribution of Surf Lifesaving in Australia (2005).* Note: These assumptions were developed in consultation with experienced subject matter experts from SLSA as part of the 2005 study.
16. Department of the Prime Minister and Cabinet, Best Practice Regulation Guidance Note: Value of statistical life (2019).
17. A Mahony, P Barnsley, AE Peden, and J Scarr, A 13-year national study of non-fatal drowning in Australia (Royal Life Saving Society Australia, 2017). Note: The study considered non-fatal drowning incidents that resulted in a hospitalisation.
18. Historic data from 2007-08 onwards was used to estimate the number of SLSA members that completed an award with a CPR component for the first time. Data on the number of non-members to complete these awards was unavailable prior to 2014-15. Therefore, it has been assumed that 70.8% of CPR awards completed by non-members were first-time completions; this reflects the average proportion of SLSA member CPR awards each year that were a first time completion from 2007-08 to 2019-20 (to date).
19. In undertaking this study, data about non-members who secure paid employment as a result of completing an SLSA award was unavailable. As a result, this source of benefit relates only to individuals that complete an award as a member of an SLS club.
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30. Australian Institute of Health and Welfare, *Web report: Australian Burden of Disease Study 2015: Interactive data on risk factor burden* (2019). Note: This was the most recent data available from the AIHW on the burden of disease in Australia.
31. Australian Bureau of Statistics, *National Health Survey: First results, 2014-15 – Australia* (Catalogue No. 4364.0.55.001, 2015). Note: Data from the National Health Survey 2017-18 was available for this study. However, 2015 data was used to enable comparison of results with the AIHW Australian Burden of Disease Study 2015, which was the latest data available on this topic.
32. For some entities, operating cost data was unavailable for selected years. Where this was the case, the average of operating expenses incurred by the entity in other years was used.
33. Historic operating costs have been adjusted to 2020 dollars.
34. Similar to operating costs, historic capital costs have been adjusted to 2020 dollars.
35. Similar to operating costs, for some entities capital cost data was unavailable for selected years. Where this was the case, the average of capital expenditure incurred by the entity in other years was used.
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37. Beyond Blue, *Exercise your way to wellbeing* (2019).
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Deloitte.

Deloitte Access Economics Pty Ltd
ACN 149 633 116
Level 9, Grosvenor Place
225 George Street
Sydney, NSW, 2000
Australia

Phone: +61 2 9322 7000
www.deloitte.com.au

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