

## **Victoria's future in responsible canine guardianship**

### ***Smarter laws, safer communities.***

Bruce, B., Griggs, B., Isaacs, M. and Liddicoat, M.

July 2015

*\*\*\* Please ensure you are viewing this report online so that you are using the most recent version, as it is updated from time to time to maintain its currency. Accessible at: [http://bit.ly/Responsible\\_Canine\\_Guardianship](http://bit.ly/Responsible_Canine_Guardianship) \*\*\**

## Contents

<b>Summary of recommendations</b> .....	4
<b>Set a new direction for Victoria</b> .....	4
<b>Establish a resourced agenda for reform</b> .....	4
<b>Consultation to inform the parliamentary inquiry</b> .....	5
<b>1 The problem</b> .....	6
<b>1.1 Dog bite injuries are increasing in Victoria</b> .....	6
<b>1.2 Breed specific legislation has cost Victoria's taxpayers</b> .....	8
<b>1.3 Breed and appearance based approaches are fatally flawed</b> .....	9
<i>All dogs are individuals; their behaviour cannot be predicted based on appearance.</i> .....	9
<i>Aggression is often poorly defined and understood</i> .....	9
<i>The 'numbers needed to treat' are unfeasible</i> .....	9
<i>Breed/appearance specific approaches have unintended consequences</i> .....	9
<b>1.4 Breed specific laws have failed elsewhere</b> .....	10
<b>2 The solution</b> .....	11
<b>2.1 Effective dog bite prevention has a sound basis</b> .....	11
<i>Understanding human contribution to dog bite related fatalities</i> .....	12
<b>2.2 'The Calgary model': the principles underpinning best practice</b> .....	13
<b>2.3 Lessons learned from Calgary</b> .....	15
<b>3 Victoria's future in responsible canine guardianship</b> .....	16
<b>3.1 A modern approach to safe and humane animal management</b> .....	16
<i>Responsible canine guardianship defined</i> .....	16
<i>Pillars for a modern, safe and humane approach to animal management:</i> .....	17
<b>3.2 The State as a leader and facilitator of reform</b> .....	18
<i>Improving knowledge and skill base</i> .....	18
<i>Improving knowledge systems</i> .....	18
<i>Improving evaluations of temperament</i> .....	19
<b>3.3 Responsible canine guardianship as part of a comprehensive reform</b> .....	20
<i>Pound reform is essential</i> .....	20
<i>Revise criteria for approved obedience training organisations and qualified trainers</i> .....	21
<b>References</b> .....	23

## **Executive summary**

We have a vision for evidence based, best practice companion animal policy that benefits the Victorian community, including our dogs that are an important part of it.

Far from protecting the Victorian public, the current policies have presided over a disproportionate increase in dog bite injuries in the State. Most concerning, the injuries requiring admission to hospital for treatment have increased significantly during this period. Taking into account population growth, Victoria has experienced a greater than 80% increase in admissions to hospital for dog bite injuries since restricted breed laws were introduced in 2002.

Victoria's breed specific legislation (or, more accurately, 'type' or appearance specific) has caused significant taxpayer expense to both State and local governments. Despite the laws being amended several times in attempts to make them more workable, court cases involving restricted breed declarations are notoriously lengthy and therefore expensive. There has also been great personal cost in the community, the suffering of pets and their families.

Victoria's experience is not unique. Many jurisdictions have repealed breed based laws after finding them to be costly and ineffective in reducing dog bite injuries. There is growing trend towards education-first approaches to animal management, facilitating voluntary compliance, as this is proving more effective than enforcement based approaches.

Breed and appearance based approaches are fundamentally flawed as a dog's behaviour cannot be predicted based solely on its appearance or genetics alone. Most factors attributed to dog bite incidents centre on how the dog is raised, kept, and managed, including its early experience, health and socialisation.

Dog bite prevention measures should be based on a sound understanding of dog behaviour and risk factors for dog bite injuries. Effective policies have universally focused on voluntary compliance with responsible canine guardianship and its component pieces. These components include registration, microchipping, desexing, education, training, socialisation, health and regulation of threatening and nuisance behaviour.

Responsible canine guardianship policy and programs aimed at dog bite prevention are most efficiently considered alongside other initiatives aimed at humane companion animal management. These initiatives centre on pet retention and pound prevention, such as high volume, low cost desexing and microchipping.

This report highlights the problems with breed and type specific approaches, and identifies responsible canine guardianship as a feasible alternative. Recommendations for improvements are made, including recommendations for the Parliamentary Committee's consultation in conducting the inquiry into the effectiveness of Victoria's restricted breed legislation.

It is our hope that the parliamentary inquiry marks a proactive shift by the Victorian Government away from outdated and unhelpful policies towards effective, evidence-based ones. There is nothing stopping Victoria from setting the new world standard of best practice.

## **Summary of recommendations**

Detailed recommendations are outlined in section 3: *Victoria's future in responsible canine guardianship*.

### **Set a new direction for Victoria**

Victoria should put in place effective ongoing policies, laws and programs that aspire to best practice evidence-based companion animal management. This means accepting the overwhelming evidence that breed or type specific approaches do not improve public safety (and, in fact, often decrease it), and joining the many jurisdictions adopting well-resourced, breed-neutral, education-first approaches to responsible canine guardianship.

We recommend that the Victorian Government adopts the following pillars of safe and humane approach to animal management:

1. Absolute owner onus: complete responsibility for the dog's actions; a need to take all reasonable steps to ensure it behaves appropriately and is properly cared for.
2. Clear and consistent expectations: make it easier for owners to understand, and comply with, their obligations as responsible canine guardians.
3. Facilitate voluntary compliance: help the well-intentioned to do the right thing by:
  - a. subsidising services that keep dogs safe and well-cared
  - b. incentivising voluntary compliance
  - c. building relationships between animal management and dog owners.
4. Penalise where appropriate: limit enforcement to blatant or repeat offenders.
5. Act transparently: transparency in policy development, execution and efficacy.

The Victorian Government should adopt the principles of responsible pet ownership:

- Licence and permanent identification to quickly reunite lost pets with their families
- Desexing initiatives reduce unwanted litters humanely\*
- Training, socialisation, proper diet and veterinary care produces safe, healthy animals
- Proper management prevents pets from becoming a threat or nuisance
- Responsible procurement of pets from an ethical and credible source

### **Establish a resourced agenda for reform**

We recommend the establishment of a taskforce of at least five full time equivalent, appropriately qualified, staff funded for a minimum of five years. Advice and other services from subject matter experts to support this group should be commissioned.

---

\* Note that mandatory desexing is not supported as it has been proven to increase impounding (and therefore euthanasia) rates of companion animals, as well as being a drain on AMO resources with no measurable benefits when it comes to either public safety or euthanasia rates.

Following this initial boost of funding there needs to be a commitment to recurrent funding of ongoing programs and regular evaluation as part of a process of continual improvement.

This taskforce should undertake the following:

- developing policy guidance to support government's direction in an education-first approach targeting voluntary compliance through education, subsidies and incentives
- amending legislation to reflect this policy direction, including repealing breed-based clauses
- reforming animal management services to enable pound prevention, pet retention and redemption outcomes to be achieved
- revising the criteria for approved organisations and qualified trainers
- establishing infrastructure and systems for data collection, monitoring, evaluation and reporting
- developing resources to support owners in being responsible guardians, and local government in on-ground delivery
- facilitation of collaboration and efficiencies between local governments.

### **Consultation to inform the parliamentary inquiry**

As dog bite prevention is about managing both dog and human behaviour the Economic and Infrastructure Committee should seek advice from experts in dog behaviour and education, as well as animal management policy specialists. A number of local subject matter experts from both applied and academic areas that have a global awareness of relevant issues and can offer salient, actionable feedback based on a combination of proven approaches worldwide.

We ask the Committee to seek the best expertise possible, locally and internationally, on the following subject matters:

- understanding, modifying and managing dog and human behaviour
  - dog behaviour experts, particularly dog bite prevention specialists and those that work with aggressive dogs on a regular basis
  - anthrozoologists specialising in human-canine interactions
  - behavioural psychologists
  - education experts (including early and adult education)
  - experts in dog bite injury analysis e.g. the Monash Injury Research Institute
- animal management policy and programs, including:
  - experts with experience in jurisdictions that have implemented responsible canine guardianship programs, including the National Canine Research Council, Bill Bruce, Former Director of the City of Calgary's Animal & Bylaw Services and co-author of this report, and Janis Bradley, author of *Dog bites: problems and solutions (Revised 2014)*
  - those achieving real on-ground change through innovative community based programs in responsible and humane companion animal management, including Team Dog (Director Mel Isaacs is a co-author of this report), the Paw Project, and PetRescue.

## **1 The problem**

### **1.1 Dog bite injuries are increasing in Victoria**

Dog bite injuries are increasing in Victoria at a rate that exceeds population growth. Concerningly, the number of people admitted to hospitals for treatment (as opposed to being treated in the emergency department) has more than doubled since restricted breed laws were introduced in 2002 to 770 in 2013/14.<sup>†</sup> At 43 injuries per 100,000 people in 2013/14, Victoria has a dog bite injury rate of more than twice that of Calgary when their responsible pet ownership model was implemented (described in section 2.2).

Seven people a day present to hospital with dog bite injuries in Victoria, on average. Young children are most at risk of injury, particularly those under the age of four, and they are hurt predominantly in the head and face area.<sup>1</sup>

When the three years prior to the first introduction of breed specific legislation in Victoria in 2002 are compared to the last three years, on average:

- total hospital visits have increased 48%, resulting in an additional 786 presentations to hospital for dog bite injuries each year, and
- hospital presentations requiring admission for treatment have more than doubled from 342 to 744 per annum.

**Table 1: Hospital admissions and emergency department presentation in Victoria**

	1999 /00	2000 /01	2001 /02	2002 /03	2003 /04	2004 /05	2005 /06	2006 /07	2007 /08	2008 /09	2009 /10	2010 /11	2011 /12	2012/ 13*	2013/ 14*
<b>Admitted for treatment*</b>	342	347	336	329	378	389	406	376	472	521	588	758	765	697	770
<b>Treated in emergency</b>	1,365	1,247	1,319	1,394	1,598	1,711	1,724	1,683	1,729	1,713	1,684	1,604	1,763	1,568	1,752
<b>Total hospital presentations</b>	1,707	1,594	1,655	1,723	1,976	2,100	2,130	2,059	2,201	2,234	2,272	2,362	2,528	2,265	2,522

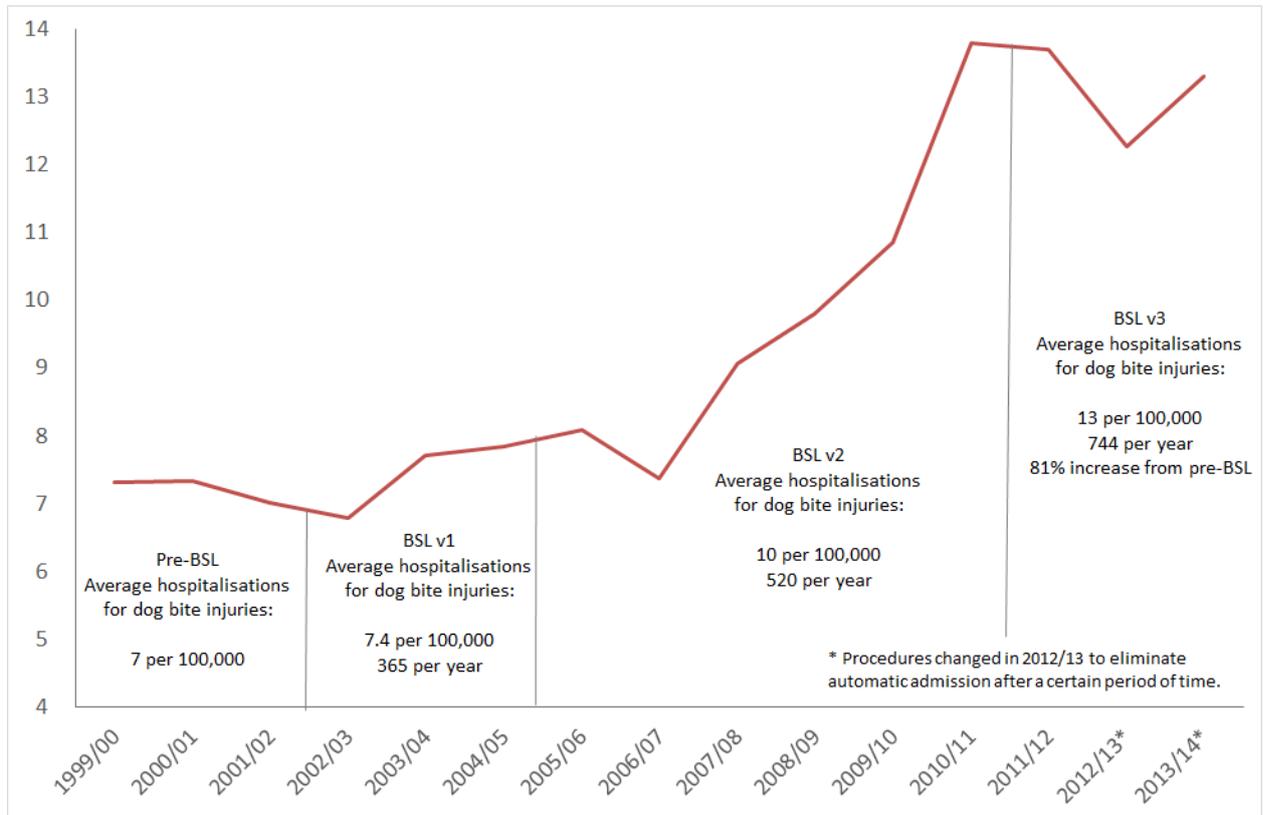
\* Procedures changed in 2012/13 to eliminate automatic admission after a certain period of time.

There is a correlation between increasing dog bite injuries and the key phases of breed specific legislation in Victoria. As shown in Figure 1, the average hospital admissions have increased each time the legislation was 'improved'. While this highlights the ineffectiveness of restricted breed legislation, it also indicates simultaneous failures in other areas such as education.

This analysis was based on the best data available to the authors at the time. There are huge deficiencies in understanding the nature of dog bite injuries, as well as the extent and nature of nuisance and aggressive behaviours, in the State.

<sup>†</sup> Hospital data presented in this section is a basic analysis of the Victorian Admitted Episodes Dataset (VAED) and Victorian Emergency Minimum Dataset (VEMD) datasets provided by the Victorian Injury Surveillance Unit of Monash University. We understand that the State Government's Bureau of Animal Welfare hold reports that describe more accurately the extent and nature of dog bite injuries in Victoria. These reports were not available to the authors prior to the publication of this report.

**Figure 1: Admissions to hospital for dog bite injuries in Victoria from 1999/2000 to 2013/14<sup>‡</sup>**



Since 2005 New South Wales has legislated mandatory reporting for councils for all dog attacks occurring within their jurisdictions. The reporting is completed through a Government-run register which also stores microchip and registration information, and includes such information as the severity of injury inflicted, where the dog attack occurred, whether the attack was on another animal or a person (and if a person, the age group they belong to), whether the dog was controlled or provoked, and whether the owner was present.

While this reporting system could certainly be improved on, the fact that the information is gathered in a central location and the submitting of this information is mandatory allows for fairly helpful statistics to be available in regards to dog attack trends and circumstances.

Victoria's experience has predictably mirrored the collective global experience where breed-based laws have not reduced dog bite injury but have actually facilitated increased statistics (see section 1.4).

<sup>‡</sup> Victorian Admitted Episodes Database, provided by the Victorian Injury Surveillance Unit of Monash University. Estimated Resident Population from the Australian Bureau of Statistics. For the purposes of this analysis the key periods of restricted breed legislation considered were:

- Pre-BSL: restricted breed legislation was first introduced into Victoria in 2002. Hospital presentation data is not available prior to 1999/2000.
- Victorian BSL v1: the first restricted breed clauses were introduced into the then *Domestic (Feral and Nuisance) Animals Act 1994* (now *Domestic Animal Act 1994*) by the *Animals Legislation (Responsible Ownership) Act 2001*.
- Victorian BSL v2: the *Primary Industries Legislation (Further Miscellaneous Amendments) Act 2004* added further clauses to the then *Domestic (Feral and Nuisance) Animals Act 1994* (now *Domestic Animal Act 1994*)
- Victorian BSL v3: *Domestic Animals Amendment (Dangerous Dogs) Act 2010*, *Domestic Animals Amendment (Restricted Breeds) Act 2011* and *Crimes and Domestic Animals Acts Amendment (Offences and Penalties) Act 2011* increased restricted breed clauses in the *Domestic Animal Act 1994* and *Crimes Act 1958*. Victoria entered another phase when the *Domestic Animals Act Amendment Act 2014* came into force in July 2014

## 1.2 Breed specific legislation has cost Victoria's taxpayers

Despite investment in several amendments of the *Domestic Animals Act 1994* (the Act) attempting to make restricted breed clauses more workable, court cases involving restricted breed declarations have proven to be notoriously lengthy and expensive, involving multiple hearings and appeals. For example, Monash Council had to increase their animal registration fees by 25% in 2014 to help fund bills of over \$180,000 for two restricted breed dog cases.<sup>2</sup>

Court cases involving restricted breed declarations benefit only the organisation receiving daily fees for extended period (e.g. in the case of Mylo discussed below, impound fees are estimated to be in the vicinity of \$40,000) and the legal professionals commissioned for the case.

Recognising that fighting these restricted breed declarations was unsustainable for local governments, the State recently changed the law to put the exorbitant costs of impound onto the owner. This places inordinate financial pressure on the dog's owner to give up on pursuing the appeals process to which they are entitled for the restricted breed declaration.

Animal Management Officer (AMO) resources and time are generally not abundant in most councils, and restricted breed and Greyhound muzzling laws ensure that a large amount of these precious resources are wasted in the investigation and declaration of dogs that have not been involved in any incident involving threatening and/or aggressive behaviour that could be considered menacing or dangerous under the Act.

This expenditure by the State in legislative processes, and local government in court cases and AMO time is wasted as these measures have not prevented dog bite statistics from increasing. These taxpayer resources would have been better invested in practical on-ground actions to address and combat well-documented contributing factors to dog bite injuries like discounted microchipping and desexing initiatives, registration and fence checks, thorough investigation and action of dogs showing nuisance, menacing or dangerous behaviour in the community, and education and incentives for responsible owners. Investment in responsible canine guardianship would be far more effective when considered against the legislative, judicial and hospital costs.

### *Case study: Mylo and the City of Brimbank*

Mylo is a family pet assessed as having a docile and affectionate temperament suitable for therapy work. After escaping his property Mylo was impounded for over two and a half years at substantial expense to Brimbank Council (estimated in the vicinity of \$250,000-\$300,000)<sup>3</sup> while his case to determine if his physical appearance matches specific visual criteria went back and forth between the Victorian Civil Administrative Tribunal (VCAT) and the Supreme Court. Brimbank lost this case as Mylo was found to not meet the criteria for a restricted dog and was returned to his owners.

### **1.3 Breed and appearance based approaches are fatally flawed**

There are many fundamental flaws with basing an approach to community safety on breed or an appearance/type.

*All dogs are individuals; their behaviour cannot be predicted based on appearance.*

A dog's behaviour is influenced by their own unique combination of genetics, experience (including early experience, training and socialisation), health and the circumstances at any point in time (e.g. familiarity, predictability, presence of threat or prey, etc.).

A dog's behaviour cannot be predicted based on its appearance or genetics alone. When we look at a dog, we are only seeing roughly 50 of their 20,000 genes. That is, 0.25% of their entire genome. The set of 50 genes associated with physical appearance is different from the set of thousands of genes responsible for brain development and function.<sup>4</sup>

Numerous studies have also shown little correlation between the visual identification of dogs by adoption agencies and animal control, and the results of DNA breed testing. A survey of more than 900 people in dog-related professions and services and showed that respondents frequently disagreed when making visual breed identifications of the same dog, and that their opinions may or may not have correlated with DNA breed analysis.<sup>5</sup> This shows that the idea that a dog's breed or mix can be definitively decided by its appearance by an animal professional (which is employed in Victoria for the purposes of Restricted Breed legislation) is fundamentally flawed. In effect, it legislates against a particular 'type' or appearance of dog, whether or not that dog's genetic makeup is in fact comprised in part or in whole by the breeds legislated against.

Behaviour is known and clearly understood to be subject to epigenetic change - variations in the expression of a gene influenced by external, environmental factors.

*Aggression is often poorly defined and understood*

Aggression is a broad term that needs definition, as prey driven behaviour is often conflated with aggression despite having an entirely different instinctive goal.

Human directed aggression has been found to be highly context specific, suggesting that it is largely a learnt response. Aggressive behaviour is composed of many motivating factors as opposed to being a simple, inherent characteristic of an individual thereby making it inappropriate and inaccurate to assume an individual's risk based on breed.<sup>6</sup>

*The 'numbers needed to treat' are unfeasible*

In the event that an individual breed were found to be overly represented as a result of well collected, relevant data gathering (and we authors emphatically state here that they are not, and they cannot be), the number of dogs needed to be taken out of the population to have any real effect on serious dog bites is enormous and unrealistic. "Dog bite-related fatalities are so extremely rare that not even a state could ban enough dogs to insure that they had prevented even one."<sup>7</sup>

Beyond this limitation is the consideration that there would also be an extensive waste of time and effort routing out and killing a high number of individuals which do not and never would go on to pose any threat to the families and communities that they live in.

*Breed/appearance specific approaches have unintended consequences*

The enactment of breed specific legislation can create a false sense of security in the general population when it comes to risk factors surrounding dogs and dog aggression. The inference in the enactment of these laws is that aggression in dogs is breed or appearance based, which

provides a dangerous message to the populace that dogs that do not fit the physical descriptor for a restricted dog are low risk or 'can be trusted'. This can result in members of the public placing themselves, their children or their animals in high-risk situations under the assumption that a dog must be 'safe' due to its appearance.

There are also unintended consequences to these laws that are entirely counterproductive to the goal of improving community safety. Such laws deter people from taking their dogs to the vet or to dog training and socialisation classes, both of which are important sources of education for inexperienced dog owners as to the proper care and management of their dog.

They also result in owners not registering their pets to avoid detection, resulting in less funding for animal management departments and issues with compliance rates in local government areas. Take for example the situation whereby it was discovered in June 2015 that a Brimbank Council Animal Management Officer had not registered his American Staffordshire terrier, presumably due to the potential for his dog to be targeted under Victoria's current legislation.<sup>8</sup>

Owners may be less likely to take their dogs in to public places for fear of detection, resulting in less exercise and socialisation with people, other animals and external stimuli - all of which can be contributing factors to the likelihood of a dog showing aggressive behaviour, as well as other behaviour problems such as nuisance barking and escaping.

In addition, such legislation will not deter owners who wish to obtain a particular breed or type of dog for nefarious purposes (i.e. intimidation or threat) and will therefore encourage negative behaviours in the dog, as those with such intent will not be discouraged by law. The legislation may, in fact, cause the 'type' of dog legislated against to be more appealing to those that seek the ownership of a dog for negative or illegal purposes. Instead, complete owner onus for the dog's wellbeing and behaviour offers a tangible, readily enforceable option to better ensure the welfare of the dog and the community it lives in.

Factors that actually contribute to dog bite injuries are outlined in section 2.1.

#### **1.4 Breed specific laws have failed elsewhere**

The global experience is that breed specific legislation is ineffective and costly. Many jurisdictions have repealed breed laws and there is a clear trend towards breed-neutral approaches that hold guardians responsible for their dog's behaviour.<sup>9</sup>

The Australian Veterinary Association found that the number of dog attacks increased steadily in New South Wales over the period 2004-2011 despite the introduction of breed specific legislation in 2005, concluding that the laws were ineffective in reducing attacks.<sup>10</sup>

Studies in the Netherlands, United Kingdom, Spain, Italy, Canada and the United States have shown that breed specific legislation has failed to decrease dog bite injuries.<sup>11</sup> Many jurisdictions, including Lower Saxony, Germany; Ohio, USA; Italy; The Netherlands; and many cities and counties within the USA, have repealed breed based laws after finding them ineffective.

For example, studies evaluating breed bans in Canada have found that the bans had not significantly reduced dog bite injuries in the Province of Ontario and city of Winnipeg, Manitoba. Ontario enacted a breed ban in 2005 and in 2010, based on a survey of municipalities across the Province, the Toronto Humane Society reported that, despite five years of BSL and the destruction of "countless" dogs, there had been no significant decrease in the number of dog bites.<sup>12</sup> Winnipeg, Manitoba enacted a breed ban in 1990. Winnipeg's

rate of dog bite-injury hospitalizations is virtually unchanged from that day to this, and remains significantly higher than the rate in breed-neutral, responsible pet ownership Calgary.<sup>13</sup>

Eighteen American states have passed 'pre-emption's' on the enactment of BSL, preventing cities or counties within that state from passing appearance or breed based regulation of dogs in the future.

Breed laws have been rejected by the Australian, American and United Kingdom veterinary associations and Australian and United Kingdom RSPCAs. In the United States, a large range of relevant but non-animal welfare related organisations also reject BSL as a dog bite prevention approach, including the National Animal Control Association, Centers for Disease Control, and Bar Association. The White House stated "research shows that bans on certain types of dogs are largely ineffective and often a waste of public resources".<sup>14</sup>

*Case study: Prince George County*

In 2003, Prince George's County authorized a task force to examine the results of their ban, in place since 1996. The task force reported that the ban was ineffective, has a negative impact on public safety, stretches animal control and sheltering resources thin, and costs approximately a half million dollars a year to enforce.<sup>15</sup>

## **2 The solution**

### **2.1 Effective dog bite prevention has a sound basis**

It is imperative that Governments investigate and create evidence based policy for companion animal management in the community, if we are to increase public safety surrounding dogs. This policy must be based on a sound understanding of the behaviour of both dogs and humans that contributes to risk, to select appropriate mitigation strategies and programs.

Most factors attributed to dog bite incidents centre on how the dog is raised, currently kept, and managed, including its early experience, health and socialisation.<sup>16</sup> These are husbandry factors, and are highly manageable.

The majority of dog bite injuries and fatalities could be prevented by ensuring appropriate supervision of human-canine interactions. The evidence shows that the majority of dog bite fatalities in America involved a person unable to manage interactions with a dog, and/or the lack of an able-bodied person available to intervene.<sup>17</sup>

There is increasing realisation of the importance of the distinction between family dogs that have daily, positive interactions with people, and resident dogs living in relative isolation. Family dogs have been defined as "dog[s] whose owners kept them in or near the home and also integrated them into the family unit, so that the dogs learned appropriate behaviour through interaction with humans on a regular basis in positive and humane ways."<sup>18</sup> In other words, they are better integrated into society, and likely better cared for and trained, than dogs living on the property in isolation from the family unit.

Restricted breed legislation is extremely counterproductive in that it essentially legislates that a dog be kept as a resident dog - potentially increasing the likelihood of that dog displaying undesirable behaviours in the future. For this reason, this legislation can sometimes become

somewhat of a 'self-fulfilling prophecy', in that it increases the likelihood of dogs of a particular appearance or breed in a community with BSL to display aggressive behaviours.

Dogs that were not desexed were a significant co-occurring factor in dog bite related fatalities, however it is unclear if this is a result of causation (i.e. dogs that are not desexed are more likely to show aggressive behaviours) or correlation (i.e. owners who are less responsible for the behaviours of their dog are less likely to desex them).

Mandatory desexing has been shown in other jurisdictions to increase impounding (and therefore euthanasia and destruction<sup>§</sup>) rates of companion animals, as well as being a drain on AMO resources with no measurable benefits when it comes to either public safety or euthanasia/destruction rates.

For these reasons the authors do not recommend mandatory desexing legislation in response to this finding, however reduced registration rates for desexed dogs and widespread access to free or low cost surgeries for low income residents is strongly encouraged.

Recommendations for further consultation to inform the Committee in conducting this inquiry are made in Part 3 of this report.

#### *Understanding human contribution to dog bite related fatalities*

The world's best study of dog bite related fatalities found significant co-occurrence of multiple, preventable factors,<sup>19</sup> including:

- no able-bodied person present to intervene (87%)
- victim unfamiliar to the dog/s (85%)
- dog not neutered/spayed (84%)
- victim's inability to manage interactions with dog/s (77%)
- dog/s kept as resident, rather than family pet/s (76%)
- prior mismanagement of the dog/s (37%)
- abuse or neglect of dog/s (21%)

Four or more of these factors occurred in 80% of the cases. Breed was not identified as a contributing factor.

*The factors identified related primarily to supervision of interactions between dogs and vulnerable individuals, basics of humane treatment and control, and providing the dog with opportunities to live as a true family dog with regular positive interactions with people. These are choices that are likely to be easily incentivized in the majority of dog guardians who want to foster safe, humane communities, and suggest an educative rather than punitive approach to further decreasing injurious bite incidents.<sup>20</sup>*

---

<sup>§</sup> The authors make the distinction between euthanasia and destruction or killing. Euthanasia refers to death induced for humane reasons. Destruction refers to killing healthy and treatable animals.

## 2.2 'The Calgary model': the principles underpinning best practice

The City of Calgary in Alberta, Canada is world renowned for its innovative approach to animal management known as the Calgary model. With 'responsible pet ownership' at its core, this highly collaborative and effective model was developed specifically to enhance community safety, improve animal welfare outcomes and honour the human-canine bond.

Calgary's model is universally respected by the global animal management community for its efficacy in achieving improved community outcomes including reduced dog bite injuries, increased public engagement with local laws, and high public satisfaction with enforcement strategies.

The principles and that drive the model also provide results that are heavily lauded by companion animal welfare advocates across the world due to the excellent welfare outcomes achieved. Amongst the outcomes that attract and hold what can fairly be described as a 'fan based following' are extremely high rates of live release rates for dogs ( $\pm 95\%$ ), highly successful pet retention programs, a huge focus on education of the key stakeholder (the public) and a practical acknowledgement and application of the important true distinction between killing and euthanasia.

Many jurisdictions have seen Calgary's success and followed suit; a further acknowledgment that this approach is recognised as best practice in modern animal management.

This model was born of significant consultation with key stakeholders and local and international academic and applied subject matter experts, and on the best available data including but not limited to peer reviewed works. As well as being based on an understanding that substantial data gathering would be integral to the constant improvement of the process: without measurement any claim of success can only be considered anecdotal, and this is indeed no basis for smart, effective legislation.

Through a process of 'reverse engineering' the City began by first identifying the outcomes desired by the key stakeholder and then used the consultation process mentioned above to go about achieving those results. Public satisfaction has always been a key component of the City's approach, and perhaps this is part of the reason for its popular success.

The model focuses on encouraging voluntary compliance through incentives, education and subsidised services.

*Responsible Pet Ownership is a model that focuses on changing the behaviour of pet owners from problematic to acceptable. A positive change in human behaviour will always yield a positive change in animal behaviour. The foundation of any successful program starts with collaboration between all agencies involved with animals and a common understanding of the community's acceptable standards. With this knowledge, we can create programs and self-sustaining services that foster responsible pet ownership through education and recognizing the benefits of compliance, rather than relying solely on compulsion. Certain traditional approaches only create barriers to responsible pet ownership.<sup>21</sup>*

The principles underpinning Calgary's model facilitated a significant drop in dog bite incidents. Injuries reduced from 621 in 1985 to around 200 in 2008, despite a population increase during this time.<sup>22</sup> The rate of reported dog bite injury per 10,000 people the drop in fell from 10 in 1986 to two in 2006. Calgary also holds the highest rate of return to owner, and one of the lowest rates of euthanasia in North America.<sup>23</sup>

*Calgary has achieved an unparalleled level of compliance with its easy-to understand bylaw, through education that clarifies the responsibility of all pet owners, programs that facilitate pet owner compliance, and rigorous enforcement against violators.<sup>24</sup>*

*Example of the Calgary's record of success: 2011*

Reproduced from the National Canine Research Council<sup>25</sup>

*Funded entirely by animal-related revenues, primarily licensing. It receives no tax revenue.*

- *Over 111,000 dogs licensed, out of a total estimated canine population of 122,325.*
- *90% (estimated) licensure compliance rate for dogs.*
- *4,576 dogs impounded and a 95% live release rate:*
  - *87% returned to their owners;*
  - *8% adopted to new owners;*
  - *5% euthanized.*
- *Only 123 reported dog bites.*

Calgary has a zero tolerance policy on unregistered dogs and a massive fine associated with non-compliance. In typical Calgary fashion however there are a multitude of ways in which dog licenses can be purchased - including being able to simply walk up to an Officer and purchase one.

Beyond being a source of revenue, licences are promoted as an animal's ticket home. Calgary operates a 'drive home' policy where Officers are directed to return animals directly to their owner wherever possible, avoiding a visit to the pound entirely. In this situation the owners are charged a fee associated with collection of the pet.

The 'drive home' policy was devised based around stakeholder engagement and pure maths: it was more cost effective to take a pet straight home than it was to check it into a pound - and it provided the same payable fee to the City whilst reducing outgoings and administration.

Calgary worked hard to provide a significant 'rewards program' for residents with licensed pets. The program provided discounts on relevant products and services which saw owner's able to recoup their licensing costs or even see a profit on their investment in a license. This reward system was delivered without cost to the City, and promoted patronage of local business while providing a tangible benefit to the tune of many times the price of the license value to dog owners.

Calgary is a leader in licensing compliance in North America with over 90% of dogs and 45% of cats licensed. The City employed multiple people in full time roles to track non-renewal of licenses and adjust records accordingly, maintaining them as accurate repositories of information. These roles were assessed to more than pay for themselves in terms of income.

To support voluntary compliance with the responsible pet ownership bylaw the City subsidised access to desexing programs, training and microchipping.

*No officer ever gets called out to a property because the neighbour's pets are too good, never bark or howl, never threaten or bite and are well cared for.<sup>26</sup>*

Education on safe interactions with dogs and responsible pet ownership is provided, to school children in kindergarten to eighth grade, adults and those who speak English as a second language.<sup>27</sup> The City employed two full time qualified teachers to deliver integrated programs from roughly prep to year 10.

Animal management officers addressed issues at the first sign of trouble, as one aspect of non-compliance e.g. barking dog, may be indicative of other management and/or welfare issues. As the City had an 'education first' approach, this action didn't necessarily involve issuing a fine.

When education doesn't achieve responsible pet ownership the law is enforced. The City legislated that the Director has the flexibility and power to be able to prescribe appropriate remedial measures, for example, training, muzzling, confinement and short leashes. They could also lift any conditions on a pet licence once the owner had demonstrated an improvement. At the height of its success the City of Calgary applied a zero tolerance approach to aggressive or dangerous dogs, unlicensed dogs, and deliberately negligent or irresponsible owners.

*The five principles of the Calgary model of responsible pet ownership<sup>28</sup>:*

- Licence and permanent identification to quickly reunite lost pets with their families
- Spay or neuter initiatives reduce unwanted litters humanely
- Training, socialisation, proper diet and veterinary care produces safe, healthy animals
- Proper management prevents pets from becoming a threat or nuisance
- Responsible procurement of pets from an ethical and credible source

Calgary is a jurisdiction with total control over every aspect of the animal management system. The City makes the laws, issues licences, delivers education, operates pounds, etc. Responsibilities are divided amongst State and Local Governments in Victoria, with some services provided privately. Section 3 considers how the principles of the Calgary model can be adapted to the Victorian situation.

### **2.3 Lessons learned from Calgary**

Calgary's experience also clearly demonstrates the importance of sustaining investment in responsible canine guardianship and education programs. In early 2012 Mr Bill Bruce retired from his role as the City of Calgary's Director of Animal and Bylaw Services.

Since that time there have been multiple other individuals take on the role, however the City has never since managed to meet the same standards and outcomes as under Mr Bruce. Far from revealing weaknesses in the City's approach, this provides Victoria with a completely unique learning opportunity: after all, the choices that were made to cut spending on certain areas and shift programmatic focus to other areas means that there is a map of what affects which aspects of the Calgary model and how those aspects are interrelated. When the City began reducing investment in their proactive programs in 2012, dog bite injuries

began to increase again. This serves as a warning against set-and-forget approaches, and programs vulnerable to budgetary whims.

It is the belief of those writing this paper that this retrospective review provides meaningful insight into the importance of these aspects and how they affect a culture quite similar to our own.

### **3 Victoria's future in responsible canine guardianship**

#### **3.1 A modern approach to safe and humane animal management**

Responsible canine guardianship can easily be established in Victoria with some initial investment in rescoping policy and programs. In this section we discuss how the State can transition to a modern, safe and humane approach to animal management. This discussion is not limited to preventing dog bite injuries, as a comprehensive approach to responsible canine guardianship brings additional benefits such as pet retention and pound prevention.

The transition will involve a dedicated shift in mindset, and commitment, to education and incentives first, enforcement if necessary. This direction is starkly contrasted by the current approach of the Victorian Government. We outline below how improvements can be achieved, based on the adoption of the five principles of the Calgary model of responsible pet ownership:

- Licence and permanent identification to quickly reunite lost pets with their families
- Desexing initiatives reduce unwanted litters humanely\*\*
- Training, socialisation, proper diet and veterinary care produces safe, healthy animals
- Proper management prevents pets from becoming a threat or nuisance
- Responsible procurement of pets from an ethical and credible source

#### *Responsible canine guardianship defined*

The term guardian reflects a higher level of responsibility towards championing a dog's health, wellbeing and behaviour. Responsible canine guardianship has two main components:

- Recognition of the dog as a companion animal

Though a dog is the property of its owner under law it is a companion animal, as opposed to being considered merely livestock. Accordingly, the way that our society views such animals is reflected, and the absolute need to provide for that dog's physical and psychological wellbeing is upon the onus of the owner.

- Complete owner onus for a dog's behaviour and its outcomes

Beyond a requirement for an owner to provide enough sustenance and shelter to keep a dog biologically satisfied, guardianship implies an increased call to action and responsibility for stewarding that animal effectively through life. In line with this there is an

---

\*\* Note that mandatory desexing is not supported as it has been proven to increase impounding (and therefore euthanasia) rates of companion animals, as well as being a drain on AMO resources with no measurable benefits when it comes to either public safety or euthanasia rates.

expectation that the guardian of the dog be responsible for the actions of the dog, and take all reasonable steps to ensure it behaves appropriately and is properly cared for.

*Pillars for a modern, safe and humane approach to animal management:*

Adapted from *Support, Inform, Then Enforce: Basic Principles for Safe, Humane Communities*<sup>29</sup>

1. Absolute owner onus

The owner is entirely responsible for the actions of the dog, and take all reasonable steps to ensure it behaves appropriately and is properly cared for.

2. Clear and consistent expectations

Clear expectations of owners, as consistent as possible across the State, will make it easier for them to understand, and comply with, their obligations as responsible canine guardians. Consistency between municipalities can bring efficiencies and opportunities to collaborate. For example, shared templates for signage, animal management plans and other communication materials, and shared research and advice. The Victorian Government can support clarity and consistency across the state through policy guidance and facilitation of local government collaboration.

3. Facilitate voluntary compliance

The majority of dog owners are well-intentioned, and want to do their best by their dogs and their community. Best practice animal management involves helping people to achieve voluntary compliance. Removing barriers to compliance involves:

- a. subsidising services that keep dogs safe and well-cared, for example, by providing free or low cost access to desexing, vaccinations/titre testing, microchipping, training, education and information
- b. incentivising voluntary compliance, for example offering discounts on registration and rewards programs for completion of activities such as attending training or desexing
- c. building relationships between animal management and dog owners through an education first approach and a proactive and compassionate presence in the community.

4. Penalise where appropriate

Stringent enforcement should be limited to those that offend blatantly, with clear disregard for public safety and/or animal welfare, and repeat offenders, where attempts at education have failed to result in compliance.

5. Act transparently

Transparency in policy development, execution and efficacy is important in engaging the public in an enduring fashion that serves to encourage voluntary compliance amongst the dog owning and loving public. Thoughtfully considered metrics upon which to judge success there will always be issue with refining legislative approaches, and accurately identifying which elements of larger policies are underperforming.

### **3.2 The State as a leader and facilitator of reform**

The Victorian Government's role in transitioning to modern, progressive approach to responsible canine guardianship centres on policy leadership and facilitating uptake of the new approach.

While local government holds much of the on-ground responsibility the State is in a position to build and implement a framework that empowers municipalities to deliver real change and serve those living and participating in their communities.

The Victorian Government needs to evolve towards contemporary, evidence-based policy that considers the above-mentioned:

- pillars of modern, safe and humane animal management
- principles of responsible pet ownership ('the Calgary model'), and the
- definition of responsible canine guardianship.

Relevant aspects of this policy should be enshrined in law, and breed-based clauses (i.e. restricted breed clauses and greyhound muzzling) repealed.

The current governance model necessitates that practical support from the State is required to enable achievement of improved outcomes. The Victorian Government has a key role to play in working with local governments to enact change and ensure delivery of results. Facilitating information flow and adoption of improvements by the key deliverers is vital. Specific types of assistance are outlined below.

Funding is of course required, with an initial boost recommended (associated with the task force described below), followed by an ongoing commitment to sustaining recurrent funding of key activities. Investment in programs supporting voluntary compliance is not just more effective in terms of cost and dog bite prevention outcomes, it also provides societal benefits for people and improved welfare for their dogs.

#### *Improving knowledge and skill base*

The State Government needs to prioritise the sourcing of contemporary, evidence based advice from relevant subject matter experts (see above *Recommended consultation into inform the inquiry*). With appropriate input and analysis, this Parliamentary Inquiry could go a long way towards procuring this advice. In addition to this, sourcing advice at a state-wide, or potentially national, scale would bring efficiencies if disseminated to local government.

State, Commonwealth and/or local government collaborations could commission shared resources such as best practice guidelines and templates for management plans, contracts and communications.

A modern education-centric approach will rely on successful delivery on ground. Animal Management Officers need to be upskilled, and appropriate metrics introduced to ensure these professionals are capable of proactively working with the community.

#### *Improving knowledge systems*

The Victorian Government should implement a robust and resourced monitoring, evaluation and reporting framework. This would include a database of microchips, registration, incidents, Domestic Animal Management Plans, infringements, declarations, registration conditions and so forth. Ideally, this would be part of a national system to enable pets and owners to be tracked across jurisdictions.

By gathering information in a central location, and mandating submission of information, helpful statistics will be available to monitor trends in incidents, compliance and ownership. It should also hold useful information about circumstances involved in dog attacks - such as the severity of injury inflicted, where the dog attack occurred, whether the attack was on another animal or a person (and if a person, the age group they belong to), whether the dog was controlled or provoked, and whether the owner was present.

It is imperative that following the conclusion of the inquiry and the implementation of any changes, a mandatory reporting requirement for councils is introduced regarding dog attacks that occur and the circumstances surrounding them. Without clear data being gathered, it is impossible to assess the impact and effectiveness of any legislative changes going forward.

#### *Improving evaluations of temperament*

Victoria currently employs a two part behavioural designation system in relation to dogs whose behaviour is labelled with the blanket term of 'aggression'. Dogs are designated as dangerous based on their actions resulting in a 'serious injury', or if they are a menacing dog that is not appropriately managed. Once designated as a dangerous dog there are permanent restrictions placed around how the dog is housed, handled and interacted with. The designation of dangerous cannot be lifted under any circumstance.

The Victorian definition of menacing can be applied to a dog for a number of reasons. It can be lifted, however there is a distinct lack of objective testing criteria available for such situations and a demonstrable lack of subject matter expertise referrals are available to individuals and councils alike.

Testing is typically carried out by individuals which are indoctrinated in the methodology and ideology of an individual organisation's temperament assessment paradigm, and all too frequently by individuals whose involvement is deemed convenient as opposed to preferable. This is problematic for a number of reasons including entrenched cultural and personal biases that become normalised and go unquestioned.

It is currently understood that most aspects of what is broadly known as 'temperament testing' is a predominantly subjective process, very much at the mercy of a number of difficult to control variables. Further retarding the current system's efficacy is the fact that many of these tests involve elements that are profoundly problematic.

One example of such a test is the 'hand in the bowl' test, using a piece of equipment commonly known as a 'humaniac'.<sup>††</sup> The test is utilised on the premise that it offers insight into the likelihood that a dog will resource guard when rehomed, and is conducted by frustrating a dog's peaceful consumption of a meal using a prop designed to mimic a human hand.

"The studies agree that, contrary to the beliefs common among shelters, food aggressive behavior is not a barrier to owners forming strong bonds with their dogs. The Wisconsin study reported that a lower percentage of FA+ dogs were returned to the shelter than FA- dogs. Dr. Marder and her group wrote that almost all of the adopters responding to their survey, whether or not they had adopted an FA+ dog, did not consider this behavior a challenge to their keeping the dog as a pet. Most of Dr. Marder's respondents, whether or not their dog was considered FA+, reported that they would adopt the same dog again."<sup>30</sup>

There are some temperament assessment models available which have large bodies of data behind them but this does not necessarily mean that these tests are reliable or valid. Tests such as the Swedish Mentality Test offer quite in depth evaluations of a dog's character,

---

<sup>††</sup> <http://animal-care.com.au/index.php/vmchk/Handling-Equipment/Helping-Hand/flypage.tpl>

however administration of the testing procedures is made difficult due to the nature of the program, and the required skill level of the tester.

The authors recommend that rather than any model of testing utilised should never represent a pass/fail outcome for a dog, as there are a great number of ethical concerns with such a paradigm. By way of example, a dog tested in a pound environment is likely to be under increased emotional load and high levels of stress, and these factors alone should technically preclude such a testing environment if a realistic insight into the dog's character is being sought.

### **3.3 Responsible canine guardianship as part of a comprehensive reform**

Policy and programs for responsible canine guardianship align well with, and would be most effectively considered alongside, broader initiatives aimed at responsible and humane companion animal management. Efficiencies could be gained by streamlining companion animal programs. Simple programs can facilitate multiple outcomes including community safety, animal welfare, and an improved human-canine bond. Examples include:

- supporting the public in accessing vet care, training and behavioural advice
- retrieving a lost animal sooner
- high volume, no or low cost desexing and microchipping.

#### *Pound reform is essential*

Responsible canine guardianship goes hand-in-hand with an ethos of supporting owners in keeping their pets and preventing them from entering the pound system. Impoundment is stressful on animals, and expensive for both owners and councils if the animal is not reclaimed. The only beneficiary in these instances are the third party contractors that provide animal management and/or pound services.

There are cheaper, less stressful, more productive ways to assist the public in containing and retaining their animals. The need for education, subsidies and incentives for responsible canine guardianship has been discussed previously, as has its benefits to both dog bite prevention and broader animal welfare.

Victoria's current system works against having pets found at large from being returned home as soon as possible. Vets aren't allowed to scan microchips unless they have specifically applied for, and been granted, permission to. This is a major barrier to promptly reuniting a pet with its owner. There is a need for these returns to be tracked, so that animal management officers can follow up with inspection, education and/or enforcement as appropriate for repeat offenders, however this can be easily achieved without requiring every animal be impounded.

As an alternative vets can simply be required to report animals as 'returned to their owner' through the surgery and thereby attentioning local council of the necessity to follow as necessary, as well as helping with recording history of repeat offenders. While the community should not be expected to perform this role, many are willing and able to, as they see this as in the animal's best interest. Community groups, concerned individuals, and industry professionals alike are frustrated by the current system.

The majority of councils take pets found at large straight to the pound, thereby incurring impoundment fees as well as infringements for the owner. If the owner can't afford to

immediately bail their dog out, the impoundment fees continue to escalate on a daily basis. Costs often spiral out of reach very quickly and frequently results in the animal being abandoned.

A more progressive practice involving 'drive home' policies where dogs are returned directly to their owner, at low expense, with an optional caution available for first time offenders. Impoundment stress and expense is avoided, and the animal management officer is able to educate the owner face-to-face about the relevant issues whilst inspecting in-situ the circumstances of the escape and providing direction on how to remediate any contributing factors.

Perhaps even more powerfully than the above factors, drive home programs tangibly demonstrate to owners the benefit of registration and microchipping, as well as positively reinforcing to that individual the importance of continued compliance. Such measures are key to encouraging voluntary compliance within a community, and in particular one such as Victoria where there has never existed a perception of value related to licensing fees.

The structure of the current pound model works against best practice of preventing animals from ending up in the pound in the first place. Arguably, the major beneficiaries of breed specific legislation are those businesses that provide contract animal management services. The mega-pounds servicing Melbourne councils have highly profitable models that are largely exempt from the payment of tax due to charitable status, and this binds them to direct financial surpluses back into furthering their own organisational objectives.

The animal welfare objectives of keeping dogs with their owners, and returning them as quickly as possible, do not align with this model. While pounds may claim they need the revenue from 'at large' impoundments and pursuant 'days held' to contribute to financial viability, this is not a business model that is in the best interests of Victorians and their dogs, nor one that we as a state should be proud of.

#### *Revise criteria for approved obedience training organisations and qualified trainers*

Ensuring better access to quality professional advice is important in supporting owners in their pursuit of becoming responsible canine guardians, and creating a self-perpetuating culture around that ideal.

The Victorian system for Ministerial approval of obedience training organisations, and only considering dog trainers that work for an 'approved organisation' as 'qualified' has many flaws. The current list of approved organisations is very limited.

This system predates industry leading qualifications that are specifically designed to deliver highly targeted information relating absolutely specifically to the training of dogs and the modification of canine behaviour. In Australia the only qualification that is specifically designed to address this need is the 22214VIC Certificate III in Dog Behaviour and Training, delivered via an agreement between the National Dog Trainers Federation (NDTF) and Precise Training.

The case of the National Dog Trainers Federation (NDTF) 22214VIC qualification is perhaps the posterchild of the need to overhaul a system of recognition which frustrates the dissemination of, and access to, relevant and contemporary training and behaviour advice to the average pet owner.

Over the past 12 years the NDTF has delivered this curriculum to in excess of 2,500 students, making it the largest accredited and government recognised provider of dog trainer training in the nation. The curriculum is delivered without ideological limitations, which means that contemporary understandings are communicated to students without the inhibition of

preconceived notions that underpin offerings from other providers that claim to operate in the same space. The qualification is routinely utilised to educate personnel from Government agencies and organisations including police, customs and the military, as well as pet dog trainers and others with a dog training interest.

Despite over eight months of education required, including many theoretical and practical examinations delivered and assessed within the national learning framework's strict guidelines, those pet owners that choose to invest in training with nationally recognised, Government accredited individuals fail to enjoy the benefit of a cost reduction in their dog's registration fees.

This becomes even more farcical when one juxtaposes the veracity of this testing protocol against the mere 25 hours of supervised practice, and an internally conducted and assessed written and practical exam for 'organisations approved by the Minister'.

In addition to this the relationship between Dogs Victoria and the State Government means that this organisation does not have to comply with the above mentioned conditions in order for trainers to be considered 'approved by the Minister'.

Any shift towards a model of responsible canine guardianship must address this outdated and unhelpful system.

*Animal management reform taskforce*

We recommend the establishment of a taskforce of at least five full time equivalent, appropriately qualified, staff funded for a minimum of five years. Advice and other services from subject matter experts to support this group should be commissioned. This group should be tasked with:

- developing policy guidance to support government's direction in an education-first approach targeting voluntary compliance through education, subsidies and incentives
- amending legislation to reflect this policy direction, including repealing breed-based clauses
- reforming animal management services to enable pound prevention, pet retention and redemption outcomes to be achieved
- revising the criteria for approved organisations and qualified trainers
- establishing infrastructure and systems for data collection, monitoring, evaluation and reporting
- developing resources to support owners in being responsible guardians, and local government in on-ground delivery
- facilitation of collaboration and efficiencies between local government.

## References

---

- <sup>1</sup> Victory Injury Surveillance Unit, Monash University (2015) *Hospital-treated dog bite injury, Victoria 2002/03-2013/14 (12 years)*
- <sup>2</sup> Rabar, J., Waverley Leader, 15 April 2014, *Pet registration fees rise as Monash Council takes restricted breed cases to court*, <http://m.heraldsun.com.au/leader/east/pet-registration-fees-rise-as-monash-council-takes-restricted-breed-cases-to-court/story-fngnvlxu-1226884311427>
- <sup>3</sup> Felgate, M., 7 News Melbourne, 12 December 2014, *Death row dog reunited with owners*, <https://au.news.yahoo.com/vic/a/25761422/death-row-dog-reunited-with-owners>
- <sup>4</sup> Animal Farm Foundation, *All Dogs Are Individuals* <http://animalfarmfoundation.org/pages/Multimedia-Infographics-All-Dogs-Are-Individuals>
- <sup>5</sup> National Canine Research Council, *Inaccuracy of Visual Breed Identification* <http://nationalcanineresearchcouncil.com/breed-identification-1/>
- <sup>6</sup> Casey, RA, Loftus, BA, Bolster, C, Richards, GJ & Blackwell, E-J 2013, 'Human directed aggression in domestic dogs (*Canis familiaris*): occurrence in different contexts and risk factors'. *Applied Animal Behaviour Science*.
- <sup>7</sup> National Canine Research Council *New Study Explains Why Breed Specific Legislation Does Not Reduce Dog Bites*, <http://nationalcanineresearchcouncil.com>
- <sup>8</sup> Capone, A. Brimbank Leader, 2 June 2015 "Brimbank Council Ranger facing action after being caught with an unregistered dog" <http://www.heraldsun.com.au/leader/west/brimbank-council-ranger-facing-action-after-being-caught-with-unregistered-dog/story-fngnvmj7-1227379266800>
- <sup>9</sup> Bradley, Janis., 2014, Animals and Society Institute, *Dog Bites: Problems and Solutions (Revised 2014)*, accesible at <http://nationalcanineresearchcouncil.com/publications/ncrc-publications>
- <sup>10</sup> Australian Veterinary Association (2012) *Dangerous dogs - a sensible solution*
- <sup>11</sup> Bradley, Janis., 2014, Animals and Society Institute, *Dog Bites: Problems and Solutions (Revised 2014)*, accesible at <http://nationalcanineresearchcouncil.com/publications/ncrc-publications>
- <sup>12</sup> Peat, D. (2010, April 28). Pit bull ban fails to reduce dog bites. The Toronto Sun. Retrieved from: <http://www.torontosun.com/news/torontoandgta/2010/04/28/13753106.html>
- <sup>13</sup> National Canine Research Council. (2012). Winnipeg, Manitoba Far Behind Calgary in Community Safety. Retrieved from: [http://nationalcanineresearchcouncil.com/uploaded\\_files/tinymce/Winnipeg,%20Manitoba%20far%20behind%20Calgary%20in%20community%20safety\\_July%209,%202012.pdf](http://nationalcanineresearchcouncil.com/uploaded_files/tinymce/Winnipeg,%20Manitoba%20far%20behind%20Calgary%20in%20community%20safety_July%209,%202012.pdf)
- <sup>14</sup> Cited in Bradley, Janis., 2014, Animals and Society Institute, *Dog Bites: Problems and Solutions (Revised 2014)*, accesible at <http://nationalcanineresearchcouncil.com/publications/ncrc-publications>
- <sup>15</sup> [http://animalfarmfoundation.org/files/Report\\_of\\_the\\_Vicious\\_Animal\\_Legislation\\_-\\_Prince\\_Georges\\_County\\_-\\_2003.pdf](http://animalfarmfoundation.org/files/Report_of_the_Vicious_Animal_Legislation_-_Prince_Georges_County_-_2003.pdf)
- <sup>16</sup> Australian Veterinary Association (2012) *Dangerous dogs - a sensible solution*
- <sup>17</sup> National Canine Research Council *New Study Explains Why Breed Specific Legislation Does Not Reduce Dog Bites* [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)
- <sup>18</sup> Cited in National Canine Research Council *New Study Explains Why Breed Specific Legislation Does Not Reduce Dog Bites* [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)
- <sup>19</sup> National Canine Research Council *New Study Explains Why Breed Specific Legislation Does Not Reduce Dog Bites* [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)
- <sup>20</sup> National Canine Research Council *New Study Explains Why Breed Specific Legislation Does Not Reduce Dog Bites* [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)
- <sup>21</sup> Bruce, B. *Animal Services and the Responsible Pet Ownership Model* [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)

<sup>22</sup> Bradley, Janis., 2014, Animals and Society Institute, *Dog Bites: Problems and Solutions (Revised 2014)*, accesible at <http://nationalcanineresearchcouncil.com/publications/ncrc-publications>

<sup>23</sup> City of Calgary website <http://www.calgary.ca/CSPS/ABS/Pages/Animal-Services/Animal-services.aspx>

<sup>24</sup> National Canine Research Council: A Community Model for Responsible pet ownership: Calgary, Alberta Updated 11 February 2013 [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)

<sup>25</sup> National Canine Research Council: A Community Model for Responsible pet ownership: Calgary, Alberta Updated 11 February 2013 [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)

<sup>26</sup> Bruce, B. *Animal Services and the Responsible Pet Ownership Model* [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)

<sup>27</sup> National Canine Research Council: A Community Model for Responsible pet ownership: Calgary, Alberta Updated 11 February 2013 [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)

<sup>28</sup> Bruce, B. *Animal Services and the Responsible Pet Ownership Model* [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)

<sup>29</sup> National Canine Research Council, *Basic Principles for safe, humane communities: support, inform, then enforce*. Updated June 17, 2015 [www.nationalcanineresearchcouncil.com](http://www.nationalcanineresearchcouncil.com)

<sup>30</sup> Assumptions about future behavior of shelter dogs seen as food aggressive are unfounded. August 30, 2013 <http://www.nationalcanineresearchcouncil.com/blog/assumptions-about-future-behavior-of-shelter-dogs-seen-as-food-aggressive-are-unfounded/>