

# PREVENTING DOG BITES IN THE UK

Evidencing Alternative Approaches to  
Responsible Dog Ownership

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## About this report

Dogs are the most popular companion animal in the UK, and, according to estimates, their popularity has increased considerably in the past five years. Simultaneously, dog ownership is a growing public health and safety issue and animal welfare concern, with nuisance and dangerous dog behaviour a pressing political and social agenda across the UK. Finding the right balance between public protection, animal welfare, and harmonious shared public spaces for dogs, their guardians and the rest of the community is a significant challenge. Reducing dog bites and enhancing responsible dog ownership and engagement is central to this balance. The Scottish and Welsh Governments, and research funded by the UK Department for Environment, Food and Rural Affairs have recognised the need to address responsible dog ownership rather than focus on dog breed. However, recent dog attacks and fatalities have, again, promoted a move to enhance breed specific legislation. The prohibition of a dog breed or type based on their appearance, rather than their behaviour or that of their owner, remains divisive. On one hand, it is viewed as an essential enforcement tool for protecting the public from the dogs perceived to be the most dangerous. On the other, the evidence suggests it is not effective at reducing dog bites and is incongruent with good dog welfare. The desire for a more robust and effective response to dog bites is, however, unanimous. This report details findings from a mixed method study which analyses the approaches taken elsewhere to reducing dog bites and irresponsible dog ownership. It evidences alternative 'tools' as the basis for future discussions about welfare compatible dog bite prevention measures with key policy, law and enforcement stakeholders. In particular, it highlights the diverse approaches available, and provides a detailed case study on one locality noted for its effective approach to dog control.

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## Executive Summary

### Introduction and Background

The global popularity of dogs as companion animals identifies our relationship with them as exceptional when compared to most other nonhuman animals. With 29% of UK adults owning a dog, they are the most popular companion animal. As the popularity of dogs has increased, so too have concerns about our ability to balance the needs of dogs, dog owners and the general public. Irresponsible dog ownership, aggressive behaviour and zoonotic diseases, for example, make dogs a key public health and safety challenge. Likewise, these issues raise considerable dog welfare concerns. Finding the right balance between public protection and animal welfare, and harmonious shared public spaces for dogs, their guardians and the rest of the community is critical.

The UK response to dog control through legislation and policy has varied in time and place. Whereby, some regulations apply across the UK, others vary slightly across devolved nations, and others still are exclusive to one or more of the constituent countries. The foremost requirements of UK dog control are: restricted access (e.g. leashing and prohibited areas); identification; being under the control of a guardian in public and private spaces to avoid dangerous behaviours towards people and their interests; removing dog waste; avoiding harmful training techniques; and not owning, breeding, purchasing or selling, exchanging, or abandoning prohibited dog breeds/types. Under the Dangerous Dogs Act 1991 (and subsequent amendments) dangerous dogs are defined in law on the perceived dangerousness of five breed/types (breed) and on dog behaviour which is dangerously out of control whether in public or at home (deed). Both the police and local authorities are responsible for enforcement. Nurse et al. (2021) examined UK dog control enforcement practices finding an inconsistent enforcement response in the use of legislative powers and prosecutions, a range of issue in relation to the recording and understanding of dog attack issues, and a lack of regulation of dog owners.

While dog control and animal welfare inevitably overlap, they are also in conflict. The former is arguably intent on protecting people and their interests from dogs, while the latter protects dogs from people. The Animal Welfare Act 2006, for example, places a duty on dog guardians to ensure their dog's welfare and more generally, the avoidance of unnecessary harm to dogs. This is an important distinction to raise, as this research seeks to identify how approaches to dog control can better embed animal welfare, to prevent harms to both dogs and people.

UK Governments have been under pressure to improve dog control measures, with repeated calls for stricter measures against 'dangerous' dog breeds in response to the rise in dog bites and fatal attacks. Simultaneously, professional, and public criticism for the introduction of prohibited dog breeds or types persists. Despite the Scottish and Welsh Governments, and research funded by the UK Department for Environment, Food and Rural Affairs recognising the need to enhance responsible dog ownership, recent dog attacks and fatalities have, again, promoted a move to enhance breed specific legislation. The contentious question of what to do with the perceived perpetrators – the XL Bully – was swiftly answered with the addition of these dogs to the 'breed ban' list in England and Wales. Research fails to evidence the effectiveness of this approach in reducing dog bites, it is incongruent with good dog welfare and can result in displacement (to alternative breeds). Importantly, there is a knowledge gap on what is an effective response. Addressing this question is critical for public safety and dog welfare.

This report provides a robust mixed method evidence-based evaluation of the approaches taken elsewhere to reducing dog bites and irresponsible dog ownership to address the question: how can we reduce dog bites while also upholding and improving the welfare of dogs? A scoping literature review was conducted to explore the causes of, and responses to, dog on human bites. A systematic review of dog control policy in 45 countries was used to identify alternate dog control approaches. Informed by this review and existing research, five locations were chosen as mini-case studies to examine the different approaches to dog control – Ireland, Vienna (Austria), Calgary (Canada), Multnomah County (US) and Victoria (Australia). The so-called 'Calgary model' was identified for an empirical case study to explore how policy is applied in practice and the opportunities and challenges in doing so. This location was noteworthy for its evidently effective and balanced approach to responsible dog ownership and dog welfare. Rather than a comprehensive review of case study locations, the research highlights notable features and evidence alternative 'tools' as the basis for future discussions about effective welfare compatible dog bite prevention measures with key policy, law and enforcement stakeholders. The key findings from each stage of the research are now presented.

### **What do we know about the risk factors related to dog bites?**

The conditions in which dog's bite and in which bite fatalities occur vary considerably. Dog bite data collected in the UK (and elsewhere) provides inadequate and inaccurate

information on the causes of these bites and fatalities, due to limitations in data reporting, collection, and analysis. These data limitations also impact academic studies, which are often dependant on hospital admissions and police incident data. Nonetheless, in reviewing the contemporary academic literature available, there are factors commonly associated with dog bites. The research consistently identifies dog bites as a multifaceted social issue, with several actors and factors at play. Both human and dog behaviour contribute to bites, as do situational, environmental, genetic, and developmental factors. For example, young males at home or known to the dog were the most common victims. Unneutered, small, and male dogs were more likely to bite. Incidents mainly occurred during an interaction with the dog and suggested limited understanding of the dog's needs and lack of appropriate dog socialisation. The lower socioeconomic status of victims and warmer seasons were also noted in some studies. Breed was not identified in the literature as a key variable in the cause of dog bites. These factors attest to the complex causes of dog bites, which must thereby be addressed through multi-method and multi-agency responses.

### **What do we know about preventing dog bites?**

Despite dog bites being an extensive public health and safety concern, there are few current academic studies which evidence or evaluate effective responses to reducing dog bites, relevant to the UK context. The studies reviewed were consistent in their focus on responsible dog ownership and engagement, suggesting dog bite prevention strategies should consider three main approaches:

- Education for potential victims and their families on how to safely interact with dogs at home and in public spaces, to understand the dog's needs and body language.
- Dog behavioural training to educate dog guardians and to appropriately socialise dogs.
- Environmental modifications of both the physical and social home and community setting, in particular engineering barriers and imposing restrictions (including licensing, leashing).

As part of these approaches, the need for effective statutory recording of dog populations, dog bite incidents, and robust enforcement were highlighted. Scholars were largely unanimous in stressing that relying on breed specific legislation [BSL] as a strategy to reduce dog bites was unsuccessful and often detrimental in dealing with dog bites.

### **How do other countries regulate dog control?**

According to Tulloch et al (2021; 2023) human fatalities relating to dog attacks in the EU are generally similar to the UK (until the rise in 2022), suggesting parity in the experiences of dangerous dogs across countries with generally similar dog ownership demographics and cultural norms. Of the 45 countries reviewed in the scoping review, accessible dog control legislation was evident in 35. The legislation broadly aimed to enhance public safety, health



and welfare, and address county-specific concerns, such as zoonoses, stray dog populations, and nuisance and dangerous dog behaviour. The key requirements of note were identification (through a combination of microchipping, identification tag, registration, or licencing), general or breed-specific restrictions and bans, stray dog policy (varied from immediately returning dogs to owners, to immediate euthanasia), and enhanced dog welfare (including dog control written into animal welfare legislation, training, and owners required to demonstrate psychological capability to look after a dog).

The variation in how different countries, and regions within these countries (n = 114 in total reviewed) classified dangerous dogs was of note. 36% (n = 41) of the 114 locations reviewed applied only general restrictions to all dogs (e.g. licensing, leashing). Most other locations (34%) required additional restrictions on specific breeds/types. Ten percent (11) banned specific breeds/types, while eleven percent (13) applied both a ban and restrictions on specific breeds/types. These variations may reflect region-specific dog control issues. It is also feasible that the inconsistent approach to breed specific restrictions, including the numbers and types of breeds named, may reflect the poor evidence informing this approach and that of dog control, more generally. Importantly, the vast differences indicate there are alternatives to the UK approach, including easing restrictions on specified breeds/types and wholly removing breed-specific restrictions. Training and assessment requirements were documented in some locations, ranging from mandatory and optional educational programmes for all dog owners, to behaviour assessment tests for all restricted breeds/types and aggressive dogs.

### What are the notable features of dog control in case study countries?

The approach to dog control varies across the five case studies. Each location acknowledges the importance of keeping dogs under effective control, however, the definitions of 'control', 'dangerousness' (e.g. to whom and where) and 'responsible dog ownership' vary. The measures used to achieve control vary in use and application, nonetheless, all share similar tools for public protection:

- Each case study location requires some type of **identification** for dogs. Compulsory microchipping is a requirement in four, with the use of tags and collars used in tandem, or as an enhancement.
- **Licensing and registration** are notable and valued features in each location. The management and enforcement of which varies considerably. For example, in Vienna, all dogs are registered, but dog licenses are only required for certain breeds categorised as dangerous, whereas in Calgary it is a requirement for all dogs.
- Each location identifies **restrictions on access and/or ownership**, whereby dogs must be restrained in some or all public spaces, with additional requirements for dangerous dogs or specified breeds. Ownership, particularly for dangerous/restricted breed is also regulated. In Vienna, for example, potential dog owners may be deemed incompetent

(inability to pass test) or dangerous (prior criminal history) and be prohibited from owning a dog.

- **Identifying and responding explicitly to dangerous dogs** is key to dog control. Calgary and Multnomah County categorise dogs as dangerous based on the level and outcome of their behaviour ('deed'). This is assessed on a scale of dangerousness and a tiered response applied. Ireland, Vienna, and Victoria designate dangerous dogs by 'breed' and 'deed' and vary in terms of their use of a scale of dangerousness and the use of enhanced restrictions. All locations will use euthanasia in response to dangerous dogs, but in Calgary and Multnomah it is the 'very last' option used.
- Most locations used **multiagency enforcement with the use of punishment and incentives** as an effective tool for increasing compliance and responsible ownership. Schemes such as low cost spay/neuter programmes, tiered fees and training opportunities have been noted. As have the use of tiered fines and imprisonment (for the most serious offences).
- **Education and training opportunities** are provided in most locations, with some involving mandatory engagement (e.g. Vienna, Calgary).
- **Dog control overlaps with dog welfare** in each case study. It is a core feature in some locations (e.g. Calgary), but largely implicit or peripheral in others (e.g. Ireland). However, most locations specifically acknowledged the need and intent to balance human and dog safety and welfare (e.g. Ireland, Victoria, Calgary).

Calgary (aka the Calgary Model) provided a more detailed case study. The model is recognised internationally due to high licensing compliance rates, low stray dog and euthanasia rates, and the promotion of dog welfare. In Calgary, the findings suggest high compliance rates are attributed to 'a culture of care', incentive programmes, the removal of barriers to compliance and robust monitoring and enforcement with consequences. It boasts a nuanced and intelligence-led approach to enforcement of responsible dog ownership, and a diverse 'toolbox' supported by a bespoke IT infrastructure. The five key principals of the approach are compulsory identification (licensing), encouraged dog population control (spay/neutering) and welfare (appropriate behavioural and medical attention and ethical procurement of dogs), and responsible dog ownership (avoiding dogs becoming a nuisance or threat to the community).

As Calgary rejects breed specific restrictions and bans, the reported reduced rates of dog aggression incidents by Calgary City are notable. The approach emphasises managing risk rather than attempting to remove all risks. General restrictions on dogs are robust and may be judged as restrictive for dog owners. There are limitations on the number of dogs owned and walked, restrictions on dogs in public spaces with designated on- and off-leash areas, and a tiered system for defining, identifying, and responding to dangerous dogs (with further restrictions for 'nuisance' and 'vicious' dogs and their owners). Dog welfare is an important consideration in community safety, and implicit in the language and intension of the Bylaw. In other respects, it is explicit, by emphasising rehabilitation and restrictions rather

than euthanasia for most dogs identified as vicious or dangerous, and the above five principles of responsible dog ownership. The enforcement approach involves key stakeholder and community engagement and is supported by a robust infrastructure and dog population and incident data, largely funded through licensing fees.

### Key lessons

The findings evidence there is no panacea or silver bullet for reducing dog bites or promoting responsible dog ownership. Likewise, there are many complicated factors influencing these issues and the subsequent responses adopted in other countries. The following notable features are highlighted as possible measures for enhancing the UK response to dog control:

- ✓ Making **positive human-dog engagement** the responsibility of dog owners and the wider community
- ✓ **'Responsibilize' dog owners** using incentives, punishment, education and **engendering a culture of care and compliance**
- ✓ An **evidence-based education** and information approach
- ✓ Attention to **wider dog welfare concerns and harms within** the dog control response
- ✓ A **holistic** and **collaborative** approach or **One-Welfare Model**
- ✓ **Licensing or registration** to support traceability, enforcement, and service costs
- ✓ **IT infrastructure** which supports robust data collection and monitoring, enforcement & community engagement
- ✓ **Consistent and robust enforcement with consequences**
- ✓ **Flexibility to attend to local issues** through legislation & bylaws
- ✓ A tiered and nuanced approach to **identifying and responding to dangerous dogs**

## 1. Introduction

The global popularity of dogs as companion animals identifies our relationship with dogs as exceptional when compared to other nonhuman animals. While dogs hold various roles (e.g., working, guarding, assistance) and positions (e.g., vermin, stray) across different cultures, they are almost universally recognised as beloved companions. Dogs are the most popular pet in the UK, with 29% of UK adults owning a dog (PDSA 2023). The UK, like many countries, is experiencing a notable dog population rise, due to a change in the nature of the dog trade and ownership, especially during the COVID-19 pandemic. For example, according to a commonly used dog population measurement<sup>1</sup>, 3.2 million households in the UK acquired a new companion animal during lockdown (BBC 2021). Simultaneously, dog ownership is a growing public health and safety issue and animal welfare concern, with nuisance and dangerous dog behaviour a pressing political and social agenda across the UK.

To enhance public safety, health and welfare, dog control legislation is evident in most countries, which aims to address county-specific concerns, such as zoonoses, stray dog populations, and nuisance and dangerous dog behaviour. The responsibilities of UK dog owners in controlling their dogs and maintaining public health and safety are outlined in various legislation, such as the **Dangerous Dogs Act 1991 (as amended)**, **Dogs Act 1871** and **Microchipping of Dogs (England) Regulations 2015/108**. Long-held concerns over the approach to dog control in the UK, particularly around the introduction of prohibited dog breeds or types (henceforth called 'breeds') in 1991 and the ability to prevent dog bites and fatalities, have recently been emphasised in heated public and political debate. In 2019, DEFRA recognised the need to respond to the changing nature of dog ownership in England and Wales<sup>2</sup> by funding research which aimed to identify methods to reduce dog attacks and dog control issues as well as provide evidence-based recommendations to promote responsible dog ownership amongst owners with dog control issues (Nurse et al. 2021). The study makes several recommendations on improving knowledge and awareness of dog control issues among dog owners and improving consistency in enforcement practice. It also resulted in the development of a Responsible Dog Ownership Working Group, made up of key statutory, professional and NGO stakeholders in 2022. The focus on 'responsible dog ownership' to keep communities safe is echoed in **Scotland's Control of Dogs (Scotland) Act 2010**. The updated guidance in 2020 emphasized "the focus of the legislation continues to be on the "deed not the breed" approach in tackling irresponsible

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<sup>1</sup> This figure is subject to some challenges due to changes in the sampling methodology

<sup>2</sup> It is important to note that the UK is made up of four constituent countries, each of which can and do adopt a different focus and approach to dog control. However, key legislation applies to all countries, for example, the Dangerous Dogs Act is an act of the Parliament of the United Kingdom and applies to England, Wales and Scotland. The Dangerous Dogs (NI) Order enacts similar provision for Northern Ireland.

dog ownership" (Scottish Government 2020:1). Likewise, a focus on 'deed not breed' was highlighted in the 2014 Inquiry completed by Cardiff Council in Wales.

The emphasis on responsible dog ownership in England and Wales has arguably diminished with the introduction of a fifth prohibited breed in 2023. The prohibition of dogs based on their breed or appearance (known as breed specific legislation [BSL]) places the emphasis on the appearance of the dog rather than on their behaviour or that of their owners. This focus on breed has been inconsistently adopted, adapted, removed, or reduced by other countries. It is a divisive political and public issue, with many arguing the removal of breeds believed to be innately more dangerous must enhance public safety. This focus on breed has frequently arisen in the aftermath of a serious dog-related human fatality, arguably to reassure the public. Conversely, others have reasoned the evidence suggests BSL is not effective at protecting the public (Kuhne et al. 2006; O'Heare 2017), and that it is incompatible with good dog welfare.

Dog aggression is a critical public health problem. Two recent UK studies by Tulloch et al. (2021; 2023) analysed reported dog bites and dog bite fatalities between 2001-2021. In this period, there were on average three dog bite fatalities a year in the UK. Consistent with other research, most victims were male (59%) and the incident occurred in the home (81%). Peak deaths in young children and the elderly were also identified. According to the Office of National Statistics (ONS 2023), in 2022 six dog-related human fatalities<sup>3</sup> were reported in England and Wales, this rose to 16 (14 in England) for the period January to September 2023. Most of these fatalities occurred in unspecified places, although it is common for these incidents to happen in and around the home. An increase in dog bites was also reported, although rates have risen steadily since 1998, with numbers doubling by 2018 (Tulloch et al. 2021). The rise is characterised by a tripling of incidents in adults, with the greatest growth in women aged 35-64. Bites on children have remained stable. While changes in the UK dog population is likely to influence dog bite rates, it is not possible to determine which of the many possible causal factors are driving this increase. For example, as the dog population has grown, so too have the number of new owners, all who construct their own idea of what responsible dog ownership is. As demonstrated in Westgarth et al. (2019) study, there is considerable variation in the perceptions and actions of owners regards responsible dog ownership. Problematic ownership may rise amongst those who perceive themselves to be good owners because of a too weak or too strong owner-dog relationship; differences in interpreting what is best for the dog; difficulties predicting situations of conflict; and variations in tolerance for negative impacts of dog ownership. Evidence suggests contemporary social issues, such as the purchase of puppies from illegal and irresponsible breeders and periods of isolation during the Covid-19 pandemic are also important considerations. Importantly, as Nurse et al. (2021) stress, there are multiple reasons for dog bites and a range of situational factors involving both dog and

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<sup>3</sup> Defined as the number of deaths where the underlying cause of death was bitten or struck by a dog, deaths registered between 2019 and 2023(p) in regions in England and Wales.

human behaviour which make them more likely. Thereby, multiple tools are required to respond to dog bites.

With a view to finding a better balance between public protection and animal welfare, and harmonious shared public spaces for dog owners and the rest of the community, this research has looked internationally to identify alternative strategies which may be relevant to the UK context. The project considers the complexities and nuance of responding to dog bites and irresponsible dog ownership, by evidencing alternative approaches which could enhance those already in use in the UK. This involved two aims:

- To review existing global dog control measures, identifying and evaluating those which have proven effective at reducing dog bite incidents, protecting public safety and are compatible with good dog welfare.
- To highlight key lessons on effectively responding to dog bites to inform future discussions about welfare compatible dog bite prevention measures with key policy, law and enforcement stakeholders.

Four research questions were addressed:

1. What factors cause dog bites?
2. How is dog control legislation approached outside the UK?
3. How effective are dog control approaches outside the UK at reducing dog bites, enhancing public health and dog welfare.
4. Which measures could enhance responsible dog ownership and welfare in the UK?

A mixed method approach was adopted, consisting of three stages of data collection. Importantly, due to the scope of the project and funding, the depth and breadth of the research is intentionally modest.

The report now sets out the research context (methodology and dog control in the UK), followed by the key findings from each aspect of the research (i.e. factors causing dog bites and effective responses to dog bites, approaches to dog control across the globe, and case studies on responses to dog control). The report concludes with a summary of the key lessons learnt from the data collected and analysed and their relevance to the UK context.

## 2. Methodology

This section outlines the research approach adopted to address the research aims and questions. In summary, each question, their focus, and method are identified here:

### Q1. What factors cause dog bites?

**Focus:** i) To identify the known causes of dog bites. ii) to identify successful strategies for reducing dog bites.

**Method:** Scoping literature review of current peer-reviewed academic literature on the causes of dog bites.

### Q2. How is dog control legislation approached outside the UK?

**Focus:** To identify existing statutory approaches to dog control outside of the UK.

**Method:** An online systematic search of existing dog control policy, which identifies the approach to dangerous dogs and responsible dog ownership.

### Q3. How effective are dog control approaches outside the UK at reducing dog bites, enhancing public health and dog welfare?

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### Q4. Which measures could enhance responsible dog ownership and welfare in the UK?

**Focus:** i) To identify five case study countries/regions which reflect the different approaches to dog control and evaluate one case study area which is identified to be effective at protecting public safety and is compatible with good dog welfare. ii) Identify relevant tools which could enhance an effective, balanced and sustainable approach to UK dog control.

**Method:** Mini and in-depth case studies, involving mixed method research consisting of a literature review, content analysis (online sources) and semi-structured interviews.

The project recognises the role of responsible dog ownership and its potential impact on achieving better dog control, as well as the broad remit and meaning of the term 'dog control'. However, the focus of the study was limited to those measures which aim to reduce dog bites and protect public safety. The global review was restricted to countries with similar demographics, dog ownership customs and cultural features to the UK, as these were likely to be more relevant to the UK context.

## 2.1 Scoping Literature Review

A scoping literature review was conducted to provide a preliminary assessment of the nature and extent of scholarly peer-reviewed research literature on the causes of, and responses to, dog bites. The review does not provide a comprehensive evaluation of the literature, but a rapid assessment and summary of available sources. Literature published<sup>4</sup> between 2015 and 2023 was reviewed in order to update previous reviews (Bradley, 2014; Nurse et al., 2021). A small number of research studies were directly applicable to the research question. Initially, 44 articles were selected, and a reference list search found an additional 19 papers for full-text review. Ten of these articles were excluded as they did not meet the inclusion criteria (for example, they focused on other animals or type of incidents). The remaining 53 articles met the inclusion criteria for the review, in that they were at relevant (at least partially) to aim one (the causes of dog bites) and/or aim two (successful strategies for reducing dog bites). The articles presented primary and secondary data (n=2), only primary data (n=12), only secondary data (n=31), and literature reviews (n=8).

The articles selected provide insights into dog bite incidents from Australia (2), Canada (3), Chile (1), Côte d'Ivoire (1), Denmark (1), France (1), Ireland (2), Italy (3), Korea (1), New Zealand (1), Polonia (1), Portugal (1), Serbia (1), Slovenia (1), Spain (2), Turkey (1), the UK (9), the US (12), and Europe more generally (1). Dog bite incidents which required medical attention were mainly the focus of international and national studies, with the majority typically based on hospital records. As indicated above, primary research into dog bite incidents, and especially studies identifying successful strategies for reducing dog bites are currently insufficient. Consequently, in presenting the key findings from this review, the author is mindful of its limitations which stem from methodological constraints in the studies reviewed; including definitions or classification and official measurement of dog bites (or strikes, attacks), populations studied and sample sizes, and cultural differences. Furthermore, there is little evidence that evaluations of dog control approaches have been conducted, making it difficult to conclude which strategies are most successful for reducing dog bites. A link to the annotated bibliographies of the literature identified in the scoping review is available from the RSPCA.

## 2.2 Systematic review of global dog control policy

A systematic online search of existing dog control policy was used to identify existing approaches to dog control outside the UK. The review initially aimed to identify the key legislation which focused on dog control and reducing dog bites. Where possible, evidence of the effectiveness of this approach was evaluated, including legislation reviews, public consultations, and evidence of dog bite reduction. However, the

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<sup>4</sup> The search utilised the USW electronic library FINDit, Google Scholar and Scopus, using a combination of search terms (e.g. dog bite\*, dog attack\*, dog fatality\*, dangerous dog\*, dog strike\*, cause\*, risk factor\*, prevent\*, reduce\*). The combined keyword searches resulted in 358 titles from FindIT, 567 titles from Scopus, and more than 100,000 titles from Google Scholar.



complexities in accessing and evaluating the reliability of dog bite data across these countries made it impossible to evaluate the dog control approach in relation to dog bite statistics.

The systematic online search was focused on Europe, America, Canada, and Australasia, resulting in the analysis of 45 countries and within these 114 territories or states (henceforth called regions). An online search of existing dog control legislation was made for each country. Where significant variation in dog control policies was identified and the information was available (online and in English), the review considered the separate territorial regions. This was possible for the US, Canada, and Australia. Keyword searches were undertaken through generic search engines such as Google and some specific databases such as Ecolx and Scopus to identify state websites which provided the legislation or a summary of the legislation. Language barriers and access presented some challenges and occasionally led to the use of less official sources, such as online travel guidance websites for tourism or immigration purposes and NGO sources. While some of these online sources are provided by the state, the reliability of non-state sources must be considered. This information included clarification on breed bans, required vaccinations, and how-to-guides on dog ownership in the country. Without access to the official legislation, however, these sources provide a useful snapshot of the laws surrounding dog control. The data collected represents the status quo in 2023, more recent legislative updates may not be reflected.

It is important to note that while the dog control legislation provides insight into a countries attitude and approach to responsible dog ownership, it does not provide a full picture. Due to the nature of the data collected, important cultural and regional dynamics which influence the ownership and state response to dogs is not evident. Likewise, it was not possible to evaluate how successfully policy was implemented and enforced in each region, nor the impact of non-state responses (e.g. NGO programmes). A full review which could include these elements was not possible within the scope of the project. The list of the countries and regions reviewed, and their key legislation is available from the RSPCA.

## 2.3 Case Studies

A list of possible case study locations was drafted from the scoping literature review and systematic review of the legislation. Relevant scholars from Europe, Canada, America, and Australia were contacted by the project manager to help identify possible case studies. From this list, five case studies were identified, using the following rationale:

1. to identify a location from each region (e.g. Australasia, Europe, America, Canada),
2. that represented the various approaches (e.g. breed-ban, breed-restrictions, general restrictions, or combination of),
3. which provided enough information in English (or which could be translated) to make sense of the approach,

4. where possible, a recent review of the legislation was available.

This approach to identifying the case studies was deemed most appropriate for the scope and budget of the project. The focus of the case studies was to identify viable additions and alternatives to UK dog control, with the understanding that further research would be required to determine how best they could be applied to the UK context. The available resources restricted access to case studies in regions where English is not widely spoken, which is an important limitation to note. Furthermore, due to time constraints and project refocusing, the original aim to conduct two case studies was altered to four literature-based mini-case studies and one empirical case study. These case studies focused on identifying the key features of the dog control approach, measures to enhance public safety and reduce dog bites, and measures which were compatible with dog welfare.

The four literature-based mini-case studies focus on Ireland, Victoria (Australia), Multnomah County (US) and Vienna (Austria). Calgary (Canada) is also included in this section to support comparison to the main case study. While there are undoubtedly other regions and countries that would have met the above inclusion criteria, these case study areas best met the study requirements. To develop these mini-case studies, the official legislation, available public consultations or legislative reviews, academic literature and online sources were evaluated using thematic analysis. Inevitably, as these case studies are 'mini', they simply provide a snapshot rather than a comprehensive review of each country/region. Some factors or nuances may be missed or omitted due to their scope.

From the outset, the 'Calgary Model', which developed in Calgary city, Canada was identified as an effective response to dog control. As such, this region was selected for the in-depth empirical case study. A qualitative research approach was used to provide greater depth to this case study. This included a systematic literature review, semi-structured interviews with eight experts and professionals and two interviews with members of the public. To facilitate data collection at a distance, all interviews were conducted online via Teams video calls. Purposive sampling was used in the case of the elite interviews, who were approached because of their expertise on issues related to dog control and responsible dog ownership in Calgary. For example, interviews were conducted with members of Calgary City Council, academics with specialised knowledge, and individuals such as professional dog walkers and animal shelter workers, due to their relevant experiences. These interviewees were asked to suggest further potential participants for the project (i.e. snowball sampling).

Semi-structured interviews were also conducted with members of the public. The original project design envisaged focus groups with members of the public. Invitations to participate in the research were circulated via social media online platforms such as Facebook, X (formerly known as Twitter), Instagram, and Tiktok. This included targeting public space and dog-related online groups based in Calgary. Numerous groups were contacted and agreed to advertise the focus groups, with the view to include both dog and non-dog owner perspectives on dog control. Twenty participants responded and were

invited to attend one of the five focus groups arranged over a two-week period. However, due to the difficulty of arranging mutually convenient times between respondents and the research team in different time zones, the focus groups experienced significant drop-out rates and nonattendance. Although respondents offered to attend alternative sessions, it was not possible to facilitate this within the project timetable. Two semi-structured interviews were conducted instead with members of the public, and to enhance this data rudimentary analysis was conducted on the public evidence provided to the bylaw<sup>5</sup> review. All interviews were recorded on Teams and transcribed for qualitative thematic analysis via NVIVO. The Bylaw review data consisted of 110,000 public responses, detailed analysis of which was outside the scope of the project. Responses relating to the key focus of the project were analysed in NVIVO under the main themes (e.g. licensing, dangerous dogs, responsible dog ownership).

In addition to the above data, dog incident data was provided to the project by Calgary City. Univariate analysis via Excel and SPSS identified the common features in dog bite incidents to people and other animals, including the severity of incidents and situational factors at the time of the incident. More detailed analysis was not possible due to the project timescale.

Ethical approval for the research was received from the Crime, Security and Policing Low Risk Committee at the University of South Wales prior to data collection.

## 2.4 Research Limitations

In considering the findings that follow, it is important to emphasise the focus and limitations of this project. The research adopted a systematic and broad approach to identifying relevant case studies to ensure the project provided a balanced perspective on the different approaches to dog control. The mini-case studies offer further insight into the key features of dog control in specific locations, with particular attention to dangerous dogs and dog welfare, and where available an evaluation of the approach adopted. Through empirical and secondary data analysis, the Calgary case study explores how policy is applied in practice and the opportunities and challenges in doing so. It is not within the gift of this study to provide a comprehensive evaluation of the case study locations, rather it aims to highlight the notable features which may be useful tools in enhancing the UK response to dog control. These case study locations, and their key features, require further evaluation to determine their effectiveness and relevance to the UK context.

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<sup>5</sup> The spelling of bylaw differs from one country to the next, for consistency bylaw will be used in the report.

## 3. UK Context

### 3.1 Key Legislation

Public health concerns over the transmission of the rabies zoonotic disease through dog bites brought about the initial dog control legislation, to protect the public: **Dog Act 1971**. Subsequent legislation has concentrated on public safety, wellbeing, and economic interests (e.g. medical costs and livestock) by placing requirements on both dog owners and their dogs. The development of dog control legislation and policy has varied across the UK alongside devolution. Whereby, some regulations apply across the UK (**Dogs Act 1971**), others are similar but varied across the four countries (e.g. **Dangerous Dogs Act [DDA] 1991**) and others still are exclusive to one or more countries (e.g. **Microchipping of Dogs (Wales) Regulation 2015**). For example, in their 2020 update to the **Control of Dogs (Scotland) Act 2010**, the Scottish Government emphasised their focus continues to be on the "deed not the breed" and on tackling "irresponsible dog ownership". The approach in England and Wales maintains a 'breed and deed' focus on dog control. The different approaches to the XL Bully ban demonstrate the UK approach to dog control is varied and complex. Animal welfare legislation is also relevant to dog control, it has developed as a devolved issue and has also been influenced by prior European Union membership<sup>6</sup>. According to Scotland's chief veterinary officer, Sheila Voas, in the development of animal welfare, "Scotland has taken the lead in some things, Defra has taken the lead in others and Wales has taken the lead in yet more" (Loeb, 2019:460).

Dog control and animal welfare legislation may overlap in focus and intent, such as the prohibited use of electronic shock collars in Wales (**Animal Welfare (Electronic Collars) (Wales) Regulations 2010**). They may also clash, as each seeks a different balance. Dog control is arguably intent on protecting people and their interests from dogs, while animal welfare legislation aims to protect dogs from people. This is an important distinction to raise, as this research seeks to identify how approaches to dog control can embed animal welfare. That is, how it can mutually enhance both human and nonhuman welfare and safety. This is a timely question as support for a 'One Health', 'One Welfare'<sup>7</sup> approach to health and welfare grows (Ghai et al., 2022; Rock et al., 2017; BVA, 2019), alongside the recognition of a link between interpersonal violence and animal abuse (Maher, 2023).

The following section briefly summarises the key dog control and dog welfare legislation in the UK. There are several relevant regulations in place, some are specific to dangerous dogs, while others apply to all dogs.

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<sup>6</sup> According to the RSPCA (2016), around 80% of animal welfare laws in the UK originally come from the EU.

<sup>7</sup> "One Health is the collaborative effort of multiple professionals, together with related disciplines and institutions — working locally, nationally, and globally — towards optimal health and wellbeing for people, domestic animals, wildlife, plants, and our environment." (The One Health Commission cited in BVA, 2019)

The UK-wide **Dogs Act 1871** sought to protect people from dangerous dogs by addressing stray dogs, rabies control and dangerous dogs. The section on dangerous dogs (s2) remains in force, allowing local authorities to bring the owner of a dangerous dog before the Magistrates' court. The Act applies to both public and private spaces, but is a civil action, meaning the court can choose to impose a fine, measures appropriate to keeping the dog under control or, if necessary, have the dog destroyed. **The Dangerous Dogs Act 1989** created an offence of failing to comply with a court order under the **Dogs Act 1871** and provides powers relating to penalties and appeals.

The **Pet Animals Act 1951** created a UK-wide dog licencing scheme. In 1987 it was deemed uneconomical and abolished in England, Wales, and Scotland. In Northern Ireland, all domestic dogs must be individually licenced (the fee in 2016 was £12.50), and it is an offence to own an unlicenced dog, unless they are exempt (RSPCA, 2016).

The **Dogs (Protection of Livestock) Act 1953** extended the protection from dogs to livestock animals as human property. This legislation makes it an offence for an owner or person in charge of a dog to allow it to worry livestock or be 'at large' on any agricultural land<sup>8</sup>, and provides for a limited power of seizure, destruction, and fines upon conviction. The **Animals Act 1971** imposed strict civil liability for the offences against people and livestock identified in the previous acts.

The **Road Traffic Act 1988** furthered public protection by requiring the leashing of dogs in public areas, such as roads, and control of dogs in vehicles to prevent accidents. Penalties include prosecution and fines. The response to stray dogs was enhanced under the **Environmental Protection (Amendment) Act 1990**. Local authorities must appoint an officer responsible for dealing with stray dogs, this includes maintaining a register setting out the number of stray dogs seized by the local authority and holding stray dogs for seven days. The Act allows unclaimed dogs to be sold, rehomed, or euthanised. These acts arguably protect dogs from injury resulting from accidents and straying, and by holding owners, drivers, and local authorities accountable. However, the euthanasia of health stray dogs is not compatible with dog welfare.

**Dangerous Dogs Act 1991** and **Dangerous Dogs (Amendment) Act 1997** apply to England, Wales and Scotland and place criminal liability on owners of dangerous dogs and responsibility on dog owners to control their dogs. Dangerous dogs are defined as any dog who is of a prohibited breed/type (s1) and any dog dangerously out of control in a public or prohibited place (s3, which also includes private spaces since 2014). It is an offence to possess, own, breed, sell, exchange, transfer, advertise, or gift the four (now five since January 2024) prohibited breeds/types. The Act is intended to ensure public safety by reducing 'potentially' dangerous dogs and lowering the threshold of 'dangerousness'. Prosecutions under the Acts can result in prison sentences, fines, compensation, and the

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<sup>8</sup> Some dogs are exempt, such as trained sheep dogs and packs of hounds.

destruction of the dog, depending on the severity of the crime. The 1997 amendment removed the mandatory destruction of banned breeds and added court discretion to permit dogs identified as posing no risk to the public to be added to an Index (list) of Exempted Dogs. Owners of Exempt dogs must be 'fit and proper' and must enact further controls on their dogs.

The **Anti-Social Behaviour Crime and Policing Act 2014** strengthened the DDA Act and public protection, by extending the Act to private spaces and attacks on assistance dogs, including powers for an appointed officer to seize a dangerously out of control dog in a private place. The Act also increased prison sentences for those convicted of specific offences and set out specific considerations concerning the suitability of an owner. The **Dangerous Dogs (Designated Types) (England and Wales) Order 2023** has since added the XL Bully type dog to the list of prohibited breeds in England and Wales (from February 2024). The **Dangerous Dogs (Compensation and Exemption Schemes) (England and Wales) Order 2023** provides compensation for owners who destroy their XL Bully dogs or conditions for those who wish to keep them and apply for an exemption. The Acts also allows for additional leash and muzzle requirements on any dog, the seizure of dogs, entry of premises and control of evidence to enforce the Act. While ensuring dogs are under their owner's control is likely to indirectly enhance dog welfare (by, for example, reducing dog-on-dog attacks), the compulsory muzzling and leashing of non-aggressive prohibited dogs in public, and their likely destruction, is argued by many to be contrary to dog welfare. The included protection of livestock and assistance animals emphasises the focus on public welfare.

**The Control of Dogs Order 1992** requires owners to place a collar and identity tag on any dog in a public space with the aim of reducing stray dogs, making owners accountable for their dog's behaviour, and reuniting them with their owners. It also requires owners to leash their dogs when directed and to stop them from entering prohibited spaces. **The Dogs (Fouling of Land) Act 1996** made it an offence for dog owners not to remove dog waste from public spaces. This was replaced by the **Clean Neighbourhoods and Environment Act 2005**, which intended to enhance public welfare and enjoyment of public spaces. These requirements also enhance dog welfare in controlling the spread of canine diseases and parasites.

The **Breeding and Sale of Dogs (Welfare) Act 1999**, the subsequent **Animal Welfare (Breeding of Dogs) (Wales) Regulations 2014** focuses on controlling the commercial breeding of dogs and the welfare of the dogs involved. It provides a licencing regime for local authorities to oversee those involved in breeding five or more litters of puppies in any 12-month period. In addition to suitable accommodation, access to water, food, bedding, medical treatment and exercise, there are specific Model Licencing Conditions (MLC) that have been developed for inspecting breeding establishments, which introduced new requirements around socialisation and environmental enrichment (RSPCA, 2016). These

requirements seek to prevent the spread of diseases, and to ensure breeding dogs and their progeny are protected from neglect and abuse. Failure to do so may result in a fine or prosecution.

**The Microchipping of Dogs (Wales) Regulation 2015/The Microchipping of Dogs (England) Regulation 2015** requires all dogs to be microchipped by the age of 8 weeks by their keepers (e.g. breeder/owner). Those without exemptions (e.g. for health reasons) who fail to comply may be fined. The act focuses on reducing stray dogs and reuniting lost dogs with their owners. It has been described by the UK Government as a law that “improve[s] dog welfare” and additionally it facilitates identifying dangerous dogs (UK Government, 2016).

In summary, the key requirements of UK dog control legislation include:

- Leashing dogs in public spaces and stopping them from entering prohibited spaces.
- Identification, through collar and ID tag, microchipping, and dog licence (NI only).
- Dogs being under the guardian's control in public and private spaces.
- Removing dog waste in public spaces.
- Preventing dangerous dog behaviour towards the public, livestock, and assistance animals.
- Avoiding inappropriate and harmful training techniques.

The legal approach to dog control places liability both on the dog owner and on the dog, in that the owner is required to act responsibly, however, the restrictions and penalties are commonly directed towards the dog. Within this approach there is evidence of explicit (e.g. prohibiting shock collars) and implicit (e.g. microchipping, dog waste) dog welfare. Nonetheless, the core focus is on protecting humans from dogs. To consider the broader approach of responsible dog ownership, the Animal Welfare Act 2006 must be considered, which provides the legal basis for protecting dogs from humans.

**The Animal Welfare Act 2006** specifically protects dogs from people, by placing a duty on the people responsible for protected animals, including companion dogs, to take reasonable steps to ensure that the animals' needs are met. Dog welfare is supported by ensuring the five welfare needs: a suitable environment, a suitable diet, their need to be able to exhibit normal behaviour patterns, their need to be housed with or apart from other animals, and their need to be protected from pain, injury, suffering, and disease. The Act also specifically prohibits harmful acts, such as dog fighting, knowingly administering poisonous or injurious drugs or substances to a dog, and tail docking. It is an offence to publicise, own or share a video of, possess anything designed for use in, cause, participate in, train an animal for the purpose of, and knowingly profit from animal fights. In Scotland, tail docking is only permitted for certain working dogs, and they can remove no more than a third of the tail (BVA, 2019). In making it an offence to allow harm to be caused to protected animals “by act or omission”, the Act includes failure to protect other dogs from

dog attacks. In 2021, the **Animal Welfare (Sentencing) Act 2021 (England and Wales)** increased the maximum sentence for offenders from six months to five years and/or a £5,000 fine and an order can be made to prevent the person from owning or keeping another animal.

### 3.2 Defining Dangerous Dogs

Dangerous dogs are defined in UK law on the perceived dangerousness of five breed/types (breed) and on dog behaviour which is dangerously out of control whether in public or at home (deed). This definition of dangerousness goes beyond dog attacks to include dog aggression and other behaviours that could escalate to harm (e.g. jumping up on people). Under section 3 of the **Dangerous Dogs Act 1991**, any dog can be regarded as 'dangerously out of control' in any situation where there are grounds for reasonable apprehension that it will injure any persons regardless of whether it does so. This could include a situation where a dog attacks an animal and any person present at the time of incident has reasonable apprehension that it would injure them. Under section one of the **Dangerous Dogs Act 1991 (as amended)** the five banned breeds/types - pit bull terrier, Japanese Tosa, Dogo Argentino, Fila Brasileiro, and American XL Bully – are believed to be breeds, or to be bred from breeds, traditionally produced for fighting (RSPCA, 2016 & 2023). These breeds/types are identified by their physical conformation and whether they are deemed to have a 'substantial number of characteristics' so that they can be considered a prohibited type. These characteristics may capture dogs which not bred or sold as one of the prohibited breeds.

### 3.3 Enforcement & Penalties

While enforcement of dog control varies across the UK, as shown in Table 1 (below), the police and local authorities are the lead enforcers for dog control legislation. The police lead in incidents concerning a suspected criminal offence, such as a dog being dangerously out of control, or acts concerning a prohibited dog. Local authorities have responsibilities and powers to take enforcement action against other dangerous and nuisance dog behaviour and irresponsible dog ownership. These include powers to impound stray dogs, impose fines, to seize and chip dogs at the owners' expense, enter private spaces to access dangerous dogs or revoke breeding licenses (Department for Environment, Food, and Rural Affairs, 2018).

Table 1: Summary of Responsibilities & Powers for Dog Control and Welfare

Situation/measure	Police	Local Authority	Shared/joint working
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<b>Offences under the DDA91: prohibited dogs and dogs dangerously out of control</b>	Yes	No	
<b>Dogs worrying livestock: criminal offence under the Dogs (Protection of Livestock) Act 1953</b>	Yes	No	
<b>LEAD Initiative</b>	Yes	Yes	Yes
<b>ASB controls (except PSPOs) – CPN, CBO</b>	Yes	Yes	Yes
<b>Orders under the Dogs Act 1871 with respect to a dog not kept under control</b>	Yes	Yes	Yes
<b>Nuisance dogs, excessive barking and dogs running loose</b>	Not normally/ under local agreement & LEAD	Yes	
<b>PSPOs</b>	No	Yes	
<b>Dog microchipping</b>	No	Yes	
<b>Providing a stray dog service</b>	No	Yes	

(adapted from Department for Environment, Food, and Rural Affairs, 2018)

For persistent irresponsible dog ownership, local authorities can issue Public Spaces Protection Orders to restrict dogs or require dogs to be leashed in certain areas. Community Protection Notice (CPN), and Criminal Behaviour Order's (CBO) can also be used to place requirements on dog owners. LEAD (Local Environmental Awareness on Dogs) is a highly regarded police-led initiative adopted by several forces and local authorities to encourage responsible dog ownership and public safety. The initiative aims to provide advice to the public on dog issues, improving dog safety and welfare. It also seeks to identify 'at risk' owners and their dogs to prevent problems escalating, by issuing 'Coming to Notice' letters addressing the issue and a LEAD pack. The education pack includes details on the DDA, the Good Citizen Guide from the Kennel Club, and information on the dog breed, dog care, training and welfare and dog socialisation, and park-etiquette from key animal NGOs. Further initiatives are in place to increase public safety and promote animal welfare. For example, in Wales, Yellow Dogs UK promotes the use of yellow ribbons attached to dog leads to identify 'reactive' dogs who require additional space in public, while the Royal Mail Delivery Office map, identifies potential hazards, including properties with dogs, encountered on postal worker's rounds, to avoid dog attacks (Cardiff Council, 2014).

In cases where a dog is dangerously out of control, the maximum penalty is 6 months custodial sentence, with financial penalties. A Contingent Destruction Order (CDO) can be imposed upon conviction under the **Dangerous Dogs Act 1991**, or an appropriate Order under Section 2 of the **Dogs Act 1871**. Owner may also be disqualified from having a dog,

and further penalised depending on the severity of the outcome. Offences which result in a human fatality can carry a penalty of up to 14 years imprisonment (Crown Prosecution Services, 2021).

### 3.4 Dog Control Review

In 2019, DEFRA funded an academic study by Nurse et al. (2021) aiming to reduce dog attacks and to encourage responsible dog ownership amongst those guardians with dog control issues. The study also aimed to establish if the police and local authorities were using the new anti-social behaviour powers and how effective they were in addressing dog control issues. The research involved an extensive literature reviews and empirical research (qualitative interviews and analysis of enforcement data). Nurse et al (2021: 4) concluded that the causes of dog bites in the UK are complex and involve a combination of dog behavioural factors (e.g. aggression, “fear; play; exploration; predatory behaviour; response to past abuse; and perceived threat”), and human behavioural factors (inappropriate or irresponsible human-dog behaviour), which make dog bites more likely. The enforcement response to dog control related issues was inconsistent. This applied to the collaboration between police and local authorities and in the use of enforcement and legislative powers, and in prosecuting offences. The report found the regulation of dog ownership was limited and a notable lack of knowledge amongst most owners regards dogs and their behaviour. Furthermore, perceptions of what constitutes ‘responsible dog ownership’ and ‘irresponsible dog ownership’ vary considerably, adding further complexity. Nurse et al. argue that while irresponsible dog ownership is not the direct cause of dog attacks occurring, owners would be able to prevent incidents and reduce injuries through mitigation and socialisation strategies. In response, they outlined several recommendations, including:

- Improved recording of dog attack data and incident characteristics.
- Introducing statutory enforcement duty.
- Promoting better information sharing and introducing model guidance.
- Implementing greater use of preventative enforcement models.
- Updating enforcement and prosecutorial guidance.
- Accreditation of dog trainers and dog awareness courses for those with dog control issues.
- New legal requirements on dog ownership.

## 4. Why do dogs bite and what is an effective approach to dog bite prevention?

The research aimed to identify the known causes of dog bites. The 53 articles reviewed in the scoping review included data from seventeen countries. The majority utilised secondary data and dog bite incidents which required medical attention, largely collected from hospital treatment records. Primary research into dog bite incidents, and especially studies identifying successful strategies for reducing dog bites is currently insufficient. There is little evidence or evaluation of the effects of dog control on reducing dog bites in the peer-reviewed academic literature, making it difficult to conclude which strategies are most successful in reducing dog bites. Consequently, in presenting the key findings from this review, it is important to be mindful of the limitations outlined, which stem from methodological constraints in the studies reviewed.

### 4.1 Why do dogs bite?

In the literature, dog bites are understood to be a multifactorial phenomenon, influenced by genetic, physiological, developmental, environmental, and social factors. The most frequently revealed causal factors for dog bites included:

- *Victim age*: the highest proportion of dog-bite injuries were reported among children, adolescents, and young adults aged 0–16 years of age.
- *Victim gender*: the highest proportion of dog-bite injuries was reported among males.
- *Dog size*: smaller sized dogs were more likely to bite than medium/large sized dogs. However, the latter were more likely to cause serious injuries when biting the person.
- *Dog gender*: aggressor dogs are significantly more likely to be male.
- *Dog biology*: unneutered dogs have an increased probability of being aggressive than neutered dogs. However, this relevance of this finding was challenged in some studies, suggesting a reduction in dog bites may be because of population decline rather than the biological impact on the dog.
- *Location of attack*: the highest proportion of dog-bite injuries occur in the home of the person injured or on private property by the resident dog.
- *Relationship between dog and victim*: the highest proportion of dog-bite injuries were reported among people who knew the dog in some capacity. Aggression incidents occurred mainly during interaction with the dog. A distinction was made between provoked and unprovoked attacks in some studies, the latter being more common. However, it was noted that this definition may be inconsistently applied, especially among those who lack understanding of dog body language.
- *Human behaviour*: inappropriate behaviour around dogs, a lack of dogs' socialisation, and poor knowledge of dogs' needs and behaviour, represent risk

factors for dog bites. This was said to be reflected in the increased bites during the Covid-19 lockdown.

- *Time of attack*: there is a higher rate of aggression incidents in warmer months.
- *Geographical differences*: a small number of studies focused on the differences, both in terms of the prevalence and victim demographics, between incidents in rural and urban areas, indicating higher rates in urban and lower socioeconomic areas. Other studies identified wide geographical differences across countries, suggesting hotspots were evident in some localities.
- *Socioeconomic status*: a few studies indicated that those from a lower socioeconomic background are more likely to be affected by dog bites incidents.

In line with Bradley's (2014) review of dog bites, predominantly in the US, the studies reviewed here also identify dog bites as a multifaceted social issue and the need to move away from focusing on specific breeds due to a lack of evidence that it reduces dog bites. In terms of extending the review conducted by Nurse et al's (2021), the current literature supports their finds that the key risk factors for dogs' bites/incidents are human behaviour, predominantly inappropriate behaviour around dogs, a lack of dogs' socialisation, and a poor knowledge of dogs' needs and behaviour (see annotation 30 below). To reduce dog bites, this literature review reiterates the need to consider wider preventative measures which address victim characteristics and situational factors, rather than adopting a punitive approach towards dogs. Importantly, more data is required on the circumstances surrounding the dog bite incident to answer the research question, which factors cause dog bites.

## 4.2 How do we prevent dog bites?

Studies evaluating dog bite prevention strategies were limited. The articles reviewed mostly proposed hypotheses/inferences resulting from research on the causes of dog bites. They were consistent in suggesting that responses should consider:

- *Educating potential victims*: children and their families require education on the proper care of dogs, how to safely interact with dogs, dogs' needs and body language, and how to behave when faced with an unknown or roaming dog. Videos and educational lessons with live dogs were seen to be particularly effective in improving children's knowledge about dog-bite risk and prevention. In some cases, this was believed to also impact their behaviour around dogs. Education programs that begin in schools and involve parents were found to increase general knowledge about the needs of animals, at least in the short term. In studies which made a distinction between 'provoked' and 'unprovoked' attacks, the latter was more commonly reported. This may suggest that educational strategies would have minimal impact as the victims were unable to avoid the attack. However, some studies suggest victims may not be aware of the behaviours which may provoke dog

aggression, and so this should be an important consideration in developing dog bite reduction strategies.

- Environment modifications: modifying the physical and social environment, both in the household and in the community can be effective in reducing dog bites. In the household, proper dog fencing/restriction and the use of baby gates to separate toddlers from animals were suggested. At the community level, the enforcement of leash laws, effective policy-making including spay/neuter policies, were highlighted. The need for strategies to be tailored to specific areas was identified in a few studies.
- Dog behaviour training: the need for dog guardians to be educated, for their dogs to be socialised and trained appropriately was also identified by many studies.
- Breed Specific Legislation [BSL]: scholars were almost unanimous in stressing that relying on BSL as a strategy to reduce dog bites was unsuccessful and often detrimental in dealing with dog bites internationally (this was claimed in studies conducted in Canada, Chile, Denmark, Ireland, Italy, Portugal, and Spain). The basis of this argument is that dog bite risk has been shown to be complex and multifactorial, and there is limited evidence supporting BSL. In short, scholars agree on that there is a wider need to consider preventative measures rather than adopting a punitive approach towards dogs.

Duncan-Sutherland et al's (2022: 288) systematic literature review of dog bite prevention strategies found that dog-control legislation, including leash laws, stray dog control and enforcing infringements can reduce dog bite rates (see annotation 10 below). In contrast, they found that BSL has 'less of an effect'. They argue that imposing more extensive restrictions for all dogs, rather than solely based on breed, is advisable. Thereby, future research needs to explore the effectiveness of engineering barriers to prevent dog bites. The eight studies examining dog training reviewed, including two related to police dogs, yielded inconclusive results on the effectiveness of training on reducing dog bites. Likewise in considering the impact of education, given the burden of child injury (children have greater rates of hospitalisations than adults in most studies), they suggest legislative efforts should prioritise the protection of children. However, in the context of prevention strategies for children, the authors note that this requires further investigation as the review highlights that there is a need to shift away from an emphasis on child-directed education.

Considering the Nurse et al and Sutherland et al reviews, in line with more recent studies, the proposed measures for responding to dog bites include evidence-based education and responsabilization of dog owners (including environmental modification, education, training and appropriate dog care and socialisation), regulation of dog ownership, accreditation of dog trainers, implementing effective legislated dog control strategies (including, in the UK making it a statutory duty for local authorities to enforce dog control), and effective statutory recording and reporting of dog attack incidents. Importantly, the need to broaden the focus of responses, such as education and responsabilization, from dogs and dog owners to the wider community is emphasised. This will ensure all people

engaging with dogs understand dog behaviour and how best to prevent possible incidents.

## 5. How do other countries regulate dog control?

In conducting a systematic review of dog control policies in regions around the world, the project aimed to identify possible case studies for the research and alternative tools which could be used in the UK approach. Many countries have experienced a similar rise to the UK in their dog population, due to a change in the nature of the dog trade and ownership over the past decade, especially during the COVID pandemic. To enhance public safety, health and welfare, dog control legislation is evident in most countries, much of which aims to address county-specific concerns - such as zoonoses, stray dog populations, and nuisance and dangerous dog behaviour. According to Tulloch et al (2021;2023) human fatalities relating to dog attacks in the EU are broadly similar to the UK (until the rise in 2022), suggesting parity in the experiences of dangerous dogs across countries with broadly similar dog ownership demographics and cultural norms.

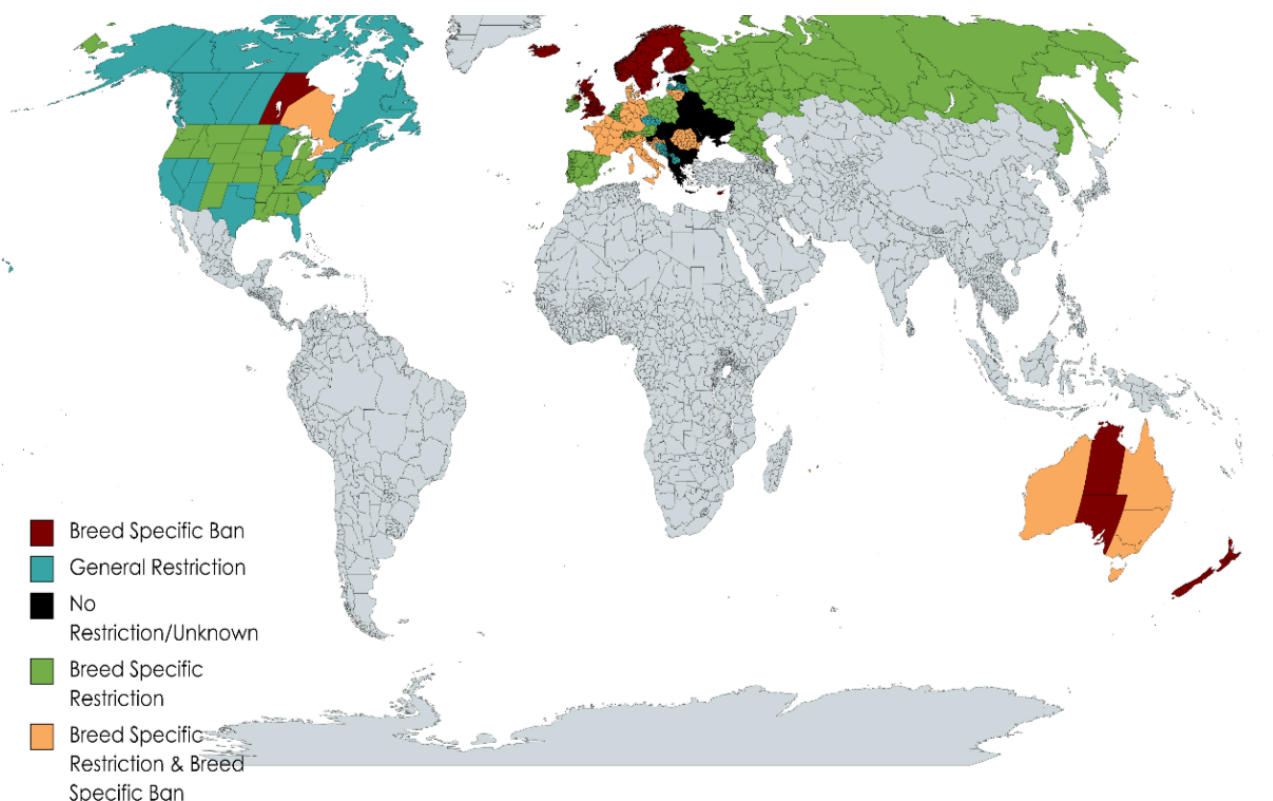
This section provides an overview of the key dog control legislation used in countries that are in the same region and/or share similar demographics to the UK, especially in terms of cultural features around dog ownership. Some countries have starkly different biopolitics in their use and control of dogs and in their perceptions of dog welfare, and thereby employ dog control measures which would not be relevant to the UK (see, for example, Srinivasan 2013). This does not mean lessons cannot be learnt from these regions, but that such comparisons are outside the remit of this study. Even in comparable countries, it is important, as Westgarth et al. (2019) and Nurse et al. (2021) note, to recognise the meaning of responsible dog ownership is not only culture-specific but is evidently owner-specific. Nonetheless, comparable countries are more likely to adopt policies which can be translated to the UK context. This overview first provides the context of the review, followed by a summary of the key features of dog control identified, with a focus on dog identification/registration, dangerous dogs, stray dog control and dog welfare.

### 5.1 Context

Figure 1 details dog control legislation in 45 countries across Europe, Australasia, Canada, and the United States [US]. Due to significant regional differences in the approach to dog control in large countries, these are further separated into the relevant states and territories in Canada, US, and Australia, providing an overview of 114 countries and territories/states (henceforth called regions). The geographical reach of dog control legislation varies considerably. In many countries, the legislation applies nationally, in others, there may be relevant legislation at the national, regional and/or local level (e.g. Germany). This variation reflects the geopolitics of these countries, and that some dog control concerns can be region-specific. The decentralisation of dog control, which permits local areas to introduce bylaws or additions to national laws, makes it difficult to summarize the dog control approach of some countries, or even regions within said country.

The variation in dog control measures can also be understood in terms of the different cultural norms and roles applied to dogs and other animals (such as pets, working or stray dogs) and their perceived risks to people. For example, according to the World Health Organisation [WHO] (2023) dog bites are the source of 99 percent of rabies transmissions to humans, and while 95 percent of rabies deaths occur in Asia and Africa, rabies is still viewed as concern in many of the reviewed regions. The most effective solution to rabies involves immunizing dogs, which is an important focus in many dog control laws; for example, in Montenegro, rabies vaccinations are mandatory for dogs. As a rabies-free country, the UK focuses on rabies control at the borders rather than within general dog control policy.

Figure SEQ Figure \\* ARABIC 1. Map detailing country and territory approach to dog control



Dog control legislation, which set out the requirements and restrictions of dog ownership, was evident in almost 80 percent (n=36) of countries. Rather than the remaining ten countries not having dog control in place, their status as unknown may reflect the absence of a public digital copy of the policy, or dog-related policy appearing in alternative legislation. Dog control legislation varies significantly in terms of where and when it was written and how it is enforced. European countries, such as Finland, detail dog control requirements within their animal welfare legislation (Animal Welfare Act 1996). In some countries the legislation is over 30 years old, such as the Prevention of Cruelty to Animals



Act 1979 in New South Wales (Australia) and the Animal Welfare Act of 1966 (US), and so may not reflect the recent changes in dog ownership and related problems. In others, legislation has been recently reviewed and changed (e.g. Calgary, Victoria) or is yet to be introduced (e.g. Spain, Ireland).

## 5.2 Key focus of Dog Control Legislation

### 5.2.1. Identification

A record of identification for dogs and their owners is central to most dog control legislation. This is achieved through a combination of microchipping, identification tag, registration, or licencing. Like the UK, in most countries microchipping and/or an identification tag is mandatory. While dog licencing was abolished in England, Wales, and Scotland in 1987 (House of Commons, 1998), licensing or registration is a key requirement in 23 of the countries reviewed. The licensing requirement can vary depending on region. There is also variation in the purpose and extent of these licences/registers. In some locations (e.g. Austria, New Brunswick in Canada), dogs must be registered with their local society or statutory agency (e.g. Dog Control Officer). Registration may include medical information such as the dog's vaccination history and whether they have been neutered/spayed. In other countries, registration is required only for dangerous dogs or dogs categorised as dangerous due to their breed. In Belgium, for example, dogs from the restricted dog breeds list must be registered at the local police station for behavioural assessment. Accurate identification is necessary for monitoring the scale of, and responding to problems, such as, nuisance and dangerous dogs, zoonoses, stray and lost dogs, animal abuse and inappropriate and illegal breeding. In terms of preventing dog attacks, identification is crucial in managing potentially dangerous dogs, and holding owners of aggressive dogs accountable. When compulsory microchipping was introduced in Wales, Rebecca Evans, the then deputy minister for farming and food in Wales, said that:

The ability to trace all dogs back to their owners through a microchip should further encourage more responsible ownership and help in the control of dangerous and nuisance dogs by creating a link between a dog and its owner (The Veterinary Record, 2016).

### 5.2.2. Dangerous dogs

How different countries and regions classify and identify dangerous dogs provides the foundation for their dog control approach. All countries with legislation identified general restrictions which applied to all dogs and the identification of dangerous dogs. Thereby, like the UK, some regions have both general restrictions and breed specific legislation in place. Breed specific legislation may be a ban or additional restrictions on certain breeds, or a combination of both. Consequently, the responses to dangerous dogs are categorised and outlined in Figure 1 as:

- 1) general restrictions applied to all dogs,
- 2) restrictions applied to specific breeds,
- 3) bans applied to specific breeds,
- 4) countries which combine both bans and restrictions on specific breeds.

These categories are considered on the level of regions due to the considerable variation even within countries (including from one city to another within the same region). Of the 114 regions, 36% (n = 41) applied only general restrictions to all dogs (e.g. licensing, leashing). The US, Canada and Eastern European countries were most likely to adopt this approach. This approach is likely to increase in the US, as new legislation makes it an offence to ban/restrict specific breeds. In Iowa, the Bill House File 651 (April 2023) is now with the Senate. This legislation will ban cities from adopting bans based on dog's breed or physical characteristics (Iowa Legislature 2023).

Most other regions (34% n = 39) placed additional restrictions on specific breeds. Eleven regions (10%) banned specific breeds and thirteen (11%) applied both a ban and restrictions on certain breeds. Where both a ban and restriction were in place, the ban may apply to importation only (e.g. Australia) or on ownership of a smaller number of breeds. Breed-specific restrictions [BSL] commonly applied to the type of owners, registration/licensing/permit requirements, control in public and private spaces (e.g. muzzling, fencing, signage). The way in which BSL is applied falls on a broad spectrum from very severe to slight restrictions. This suggests there are alternatives to the UK approach which eases restrictions without removing BSL.

While these variations may reflect region-specific dog control issues, the variation also suggests inconsistency in the evidence informing effective dog control policy. Table 2 highlights the variation in the identification of restricted and banned breeds in five locations. The Pitbull Terrier/American Pit Bull Terrier, Staffordshire Bull Terrier and Dogo Argentino commonly appear on most lists, however, the number and type of breeds vary considerably. Why this variation exists and why certain breeds are considered dangerous in some countries and not others necessitate further research. It raises the question of how reliable the evidence base is for the inclusion/exclusion criteria. There will be area-specific dog control issues. For example, Sweden, Finland, and Iceland ban wolf-dog hybrids, which are not identified as dangerous in most other locations. This breed is listed due to concerns over wild wolf populations.

Table 2: Comparison of listed restricted/banned breeds/types across five countries.

Germany [4+]	Denmark [13]	Australia [7]	New Zealand [5]	Canada - Ontario [4]
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<p>American Staffordshire Terrier Bull Terrier Pit Bull Terrier Staffordshire Bull Terrier</p> <p><b>+ additional breeds identified by each state, for example, Baden-Wurtemberg:</b></p> <p>Bordeaux Dogge Bull Mastiff Dogo Argentino Fila Brasileiro Mastiff Neapolitan Mastiff Spanish Mastiff Tosa Inu Hesse American Bulldog Dogo Argentino Kangal Dog (Karabash) Caucasian Shepherd Dog Rottweiler</p>	<p>Pitbull Terrier Tosa Inu American Staffordshire Terrier Fila Brasileiro Dogo Argentino American Bulldog Boerboel Kangal Central Asian Shepherd Dog (ovcharka) Caucasian Shepherd Dog (ovcharka) South Russian Shepherd Dog (ovcharka) Tornjak Sarplaninac</p>	<p><b>Banned import of:</b></p> <p>Dogo Argentino Fila Brasileiro Japanese Tosa American Pit Bull Terrier or Pit Bull Terrier Perro de Presa Canario or Presa Canario.</p> <p><b>+ additional restrictions identified by each region, for example, Western Australia has additional regulations for these dogs.</b></p>	<p>Brazilian Fila Dogo Argentino Japanese Tosa Perro de Presa Canario American Pit Bull Terrier</p>	<p>Pit Bull Terrier American Pit Bull Terrier American Staffordshire Terrier Staffordshire Bull Terrier</p>
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Many countries recognise both 'breed' and 'deed' in their control of dangerous dogs. Like the UK DDA, the legislation recognises that any dog can be classified as dangerous, based on their behaviour. As per the introduction of the DDA in 1991, other countries have legislated for more powers and controls in response to dog attacks. These often include powers for local authorities to impose even tighter restrictions on general dog control and breeds (e.g. compulsory muzzling and leashes in public, prohibited dog areas, neutering) and to euthanise dangerous dogs or dogs considered dangerously out of control. Other measures include the requirement of public liability insurance for certain breeds (US) or introducing new homicide offences (causing death by dangerous dog – Victoria, Australia).

Dog control laws can be criticised for being reactive, rather than preventative. In many countries, muzzling and leashing restrictions are applied specifically to restricted dog breeds or to dogs that have exhibited dangerous behaviour, while in others it is required for all dogs in public locations or situations (e.g. Vienna, Austria). Some countries look to identify potentially dangerous dogs through behavioural assessments. In the Netherlands, an aggression test is required for restricted breeds regardless of their temperament or previous behaviour. Furthermore, any dog (of any breed) that shows aggressive behaviour

must take an aggression test and may be euthanised if they fail. Alternative preventative approaches are also evident in the review, such as, the introduction of mandatory and optional training and education programmes. In Oberösterreich, Austria, dog owners are required to attend a six-hour course to be able to lead a dog of any breed.

### 5.2.3. Stray Dogs

While stray dogs were once a key concern across Europe, the numbers of straying dogs and dogs collected by local authorities in the UK has reduced year-on-year since the survey began in 1997 (Dogs Trust, 2022). In many countries, this is not the case, which is reflected in the animal welfare laws and dog control legislation. In Romania, for example, there is a specific stray dogs management programme (Government Emergency Ordinance no. 155/2001; 9/2008). The treatment of stray dogs is an important aspect of evaluating the role of dog welfare in dog control legislation. For example, in Calgary (Canada) dog control officers will return stray dogs immediately to their owners to avoid unnecessary kennelling (expense and harm), in others unclaimed straying dogs may be euthanised after a week in local authority facilities (UK), or stray dogs may be euthanised immediately (Romania).

### 5.2.4. Dog Welfare

While the review specifically focused on dog control legislation, in many countries there was evidence of passive dog welfare embedded within this legislation. Dog welfare is enhanced alongside human safety, for example, by prohibiting the abandonment of dogs and mandatory vaccinations. In other countries, the focus on dog welfare is more precise. For example, several countries allow exemptions to their microchipping regulations based on health and age and require safe practices for microchipping. In these countries the term 'welfare' is defined quite broadly. Where welfare is taken into consideration within dog control legislation, it often only applies to certain scenarios or situations related to dog control, such as breeding or training.

The focus on welfare is more explicit in Austria, for example, which bans collars that cause pain and there is guidance on dog wellbeing such as social interaction, feeding and exercise requirements. In Newfoundland, Canada, dogs must not be used for fighting or 'put under unnecessary distress or fear'. Notably, in some countries (e.g. Maine, US), dog control regulations are written within the animal welfare acts themselves, suggesting dog control and wellbeing are comparable. They also have other animal welfare laws which protect dogs such as the Act nicknamed 'Franky's Law' (2020) which creates a Courtroom Animal Advocate Program. This programme appoints an attorney to act as an advocate for victims of animal abuse, allowing them to protect the interests of the animal and acting as their voice in court. New legislation proposed in Spain requires owners to be psychologically capable and all dog owners must take a free course on how to care for and control their dogs.

In some countries, dog control exists as sub-sections of other laws, such as nuisance laws or anti-social behaviour laws, and so do not include a welfare component. In countries where dog control does not specifically outline the welfare needs of dogs, this may be covered in animal welfare legislation and so its inclusion may be seen as unnecessary. Nonetheless, explicit requirements around dog welfare are the exception rather than the rule in dog control legislation.

## 6. Mini-case studies on Dog Control: Ireland, Australia, Canada, US, Austria

### 6.1 Introduction

This section provides an overview of the mini-case studies on five different approaches to dog control: Ireland, Victoria (Australia), Multnomah County (US), Vienna (Austria), and Calgary (Canada). Each case study highlights the main approaches to dog control, using the following eight areas for comparison:

1. Key legislation
2. Defining and regulating dangerous dogs
3. General dog restrictions
4. Enforcement approach
5. Incentives
6. Penalties
7. Dog welfare
8. Evaluation

By evaluating these eight subsections, a comparison between these countries, and with the UK approach, is possible. Table 3 provides an overview of the key features of each location in comparison to the UK. While there are similarities in how each location approaches dog control, the approach to, and focus on dog control varies. In Ireland, for example, the focus is on control through responsible ownership and by placing restrictions on specified breeds. Legislation in Victoria (Australia) focuses on regulation by deed and by breed (BSL). Vienna (Austria) claims its approach strikes a balance between the needs of humans and dogs. Multnomah (US) and Calgary (Canada) rely on general restrictions and emphasise balancing animal welfare and the welfare of residents (Multnomah) and advocate for happy, healthy dogs and preventing dog-related disputes (Calgary).

As mini-case studies, the level of detail on each location is purposefully limited to the core subcategories. To enable consistency and comparison between locations, some detailed information has been removed and placed in Appendix 2.

Table 3: Key Dog Control approach in Case Study locations and the UK

Key Features	Ireland	Victoria, Australia	Multnomah, US	Calgary, Canada	Vienna, Austria	UK
<b>Main Dog Control Legislation</b>	<p>Control of Dogs Acts 1986 to 2014 (National)</p> <p>Control of Dogs Regulations 1998 (National)</p>	<p>Domestic Animals Act 1994 (amended 2011 &amp; 2014) (State)</p> <p>Crimes Act 1958 (State)</p> <p>Customs (Prohibited Imports) Regulations 1956 (National)</p>	<p>Animal Control Law 1977 (County)</p> <p>Oregon Revised Statutes Chapter 609 2021 (State)</p>	<p>Responsible Pet Ownership Bylaw (City-specific)</p> <p>Dangerous Dogs Act 2000 (Province)</p>	<p>Tierschutzgesetz [TSchG] 2004 (The Federal Act on the Protection of Animals 2004) (National)</p> <p>Wiener Tierhaltegesetz 1987 (Vienna Keeping Animals Law 1987)</p> <p>Haltung von Listenhunde 2010 (Keeping of Listed Dogs 2010)</p>	<p>Dangerous Dogs Act 1991</p> <p>Antisocial Behaviour Crime and Policing Act 2014</p> <p>Dogs Act 1871</p>
<b>Related Legislation</b>	<p>Animal Health and Welfare Act 2013 (National)</p> <p>Microchipping of Dogs Regulations 2015</p>	<p>Prevention of Cruelty to Animals Regulations 2019 (State)</p> <p>Prevention of Cruelty to Animals Act 1986 (State)</p>	<p>The PACT (Preventing Animal Cruelty and Torture) Act 2019 (Federal)</p> <p>Animal Welfare Act 1966 (Federal)</p>	<p>Provincial Offences Procedures Act 2000 (Province)</p> <p>Municipal Government Act 2000 (Province)</p>	<p>Tierhaltungsverordnung 2004 (The 2nd Animal Husbandry Ordinance 2004) (National)</p>	<p>*see legislation listed in Section 3</p>

	(National)  The Animal Health and Welfare (Sale or Supply of Pet Animals) Regulations 2019 (National)  The Dog Breeding Establishments Act 2010 (National)			Animal Protection Act (amended 2006) (Province)		
<b>Key Enforcement</b>	Local Authorities	Councils  Police	Director of Multnomah County  Animal control  Peace officers  Persons designated by the Director	Designated City Officers  Police  Bylaw enforcement officers/Peace officers	Police  Administrative State Authority (Bezirksverwaltungsbehörde)  Local Authorities	Police  Local Authorities
<b>Key DC Penalties</b>	On-the-spot & other fines	Payment of damages	Fines	Warning notice	Fines	Community Protection Notice



	Seizure of dog  Disqualification from owning dogs  Imprisonment  Euthanasia	Seizure of dog  Disqualification from owning dogs  Imprisonment  Euthanasia	Responsible Pet Ownership Program/ Obedience course  Seizure of dog  Imprisonment  Euthanasia	Tiered range of fines  Higher licensing fees  Curfews  Disqualification from owning dogs  Imprisonment  Euthanasia	Education and training course  Seizure of dog  Imprisonment  Euthanasia	Criminal Behaviour Order  Fines  Seizure of dog  Euthanasia  Imprisonment (including life)  (see also Section 3)
	<b>Ireland</b>	<b>Victoria, Australia</b>	<b>Multnomah, US</b>	<b>Calgary, Canada</b>	<b>Vienna, Austria</b>	<b>UK</b>
<b>Key DC requirements for all dog guardians</b>	Effectual control  Microchipping  Licencing  Collar or harness with owners contact details  Rabies vaccination	Registration  Microchipping  Identification marker (tag) worn at all times  Permit for households keeping dogs over set number  Effective control	Licencing & registration required  Owners liable: effectual control to prevent issues from nuisance and dangerous dog behaviour  Rabies vaccination  License tag must always be worn by the dog, except on	Registration/licencing  Leashing in public areas  Permit for households keeping more than six dogs  Dog must be under control in on- and off-leash areas, and are prohibited	License &/ Registration  Muzzle &/ leash in public spaces  Microchipping  Competency course  Liability insurance	Microchipping  Collar and tag ID  Leashing in public spaces, avoiding prohibited areas  Licencing (NI only)  Under control of guardian (with respect to people, livestock & assistance animals)

		<p>Collar and Leashing in on-leash areas</p> <p>Not left unattended in public</p> <p>Maintain minimum requirements for care and welfare</p>	property of owner/keeper	<p>from certain public spaces</p> <p>Permit required for walking more than six dogs</p> <p>Dog walker cannot be on bike/ skateboard while walking dog</p>		(see also Section 3 for further information)
<b>Identification of Dangerous Dogs</b>	<p>Behaviours:</p> <ul style="list-style-type: none"> <li>Dogs not under 'effectual control'</li> </ul> <p>Breed (below)</p>	<p>Behaviours:</p> <ul style="list-style-type: none"> <li>Dangerous dogs kill/seriously injure person or animal by biting or attacking</li> <li>Menacing dogs have received 2 infringement notices</li> <li>Dogs declared as dangerous under other</li> </ul>	<p>Behaviours:</p> <ul style="list-style-type: none"> <li>At large</li> <li>Menacing</li> <li>Chasing</li> <li>Threatening or aggressive acts</li> <li>Biting</li> <li>Causes physical injury or death</li> </ul>	<p>Behaviours:</p> <ul style="list-style-type: none"> <li>Caused severe injury to person or animal</li> <li>Caused death of an animal</li> <li>Risk to health and safety of persons in the city</li> <li>Threatening/aggressive behaviour</li> <li>At large</li> </ul>	<p>Behaviour:</p> <p>Biting or reactive dogs</p> <p>Breed (below)</p>	<p>Behaviours:</p> <ul style="list-style-type: none"> <li>Dogs that are out of control</li> <li>Attack on person, livestock, or assistance animal.</li> </ul> <p>Breed (below)</p>

		<p>state/territory law</p> <ul style="list-style-type: none"> <li>• Repeated aggressive behaviour</li> </ul> <p>Breed(below)</p>				
<b>Key Features</b>	<b>Ireland</b>	<b>Victoria, Australia</b>	<b>Multnomah, US</b>	<b>Calgary, Canada</b>	<b>Vienna, Austria</b>	<b>UK</b>
<p><b>Breed Specific Dangerous Dogs</b></p> <p><b>Breed/type = breed</b></p>	<p>No Prohibited breeds</p> <p>10 breeds, or crosses of, with additional restrictions imposed</p>	<p>5 breeds or crosses of, prohibited from import</p> <p>5 breeds, or crosses of, with additional restrictions imposed</p> <p>Greyhounds are not prohibited but subject to additional requirements</p>	<p>No breed ban or restriction</p>	<p>No breed ban or restriction</p>	<p><i>Listenhunde</i> (Listed dogs): 12 breeds, or crosses of, with additional restrictions imposed</p>	<p>5 prohibited breeds</p>

<b>Rules specific to Restricted &amp; Dangerous Dogs</b>	<ul style="list-style-type: none"> <li>• Restricted (short lead)</li> <li>• Guardian over 16yrs capable of controlling the dog</li> </ul>	<ul style="list-style-type: none"> <li>• Neutered/spayed</li> <li>• Microchipping</li> <li>• Prescribed collar</li> <li>• Warning signs on premises</li> <li>• Housing on premises</li> <li>• Restrained off premises &amp; capable guardian over 18yrs</li> <li>• Notification and ownership requirements</li> <li>• Exemptions on transferring ownership</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent identifying mark</li> <li>• Microchipping</li> <li>• Photographed</li> <li>• Fitted with special tag or collar (in some cases)</li> <li>• Public Liability Insurance.</li> <li>• Restraints/Secure enclosures.</li> <li>• Moved to secure dangerous animal facility</li> </ul>	<ul style="list-style-type: none"> <li>• Restricted (muzzling, lead)</li> <li>• Curfews</li> <li>• Secure enclosures.</li> <li>• Retain services of a certified professional dog trainer</li> <li>• Prohibited from off-leash areas</li> <li>• Tattooing</li> <li>• Microchipping</li> <li>• Neutered/spayed</li> <li>• Kept under control</li> <li>• Prohibited from off-leash areas</li> <li>• Display warning signs on premises</li> <li>• Pet tag</li> </ul>	<ul style="list-style-type: none"> <li>• Restrictions (stricter muzzling and leashing)</li> <li>• Dog license</li> <li>• Required to pass an exam to keep dog</li> <li>• Guardian over 16yrs</li> <li>• Alcohol limit for walking dog</li> </ul>	<ul style="list-style-type: none"> <li>• Neutered/spayed</li> <li>• Tattooed</li> <li>• Microchipped</li> <li>• Third party liability insurance</li> <li>• Restrictions (muzzling and leashing)</li> <li>• Guardian over 16yrs</li> <li>• Must be kept in a secure home</li> <li>• Must be registered on index of exempted dogs</li> <li>• Euthanasia</li> </ul>
<b>Key Features</b>	<b>Ireland</b>	<b>Victoria, Australia</b>	<b>Multnomah, US</b>	<b>Calgary, Canada</b>	<b>Vienna, Austria</b>	<b>UK</b>
<b>Key initiatives</b>	Funding for local authorities to upgrade dog	Local government programmes encouraging/providing incentives for	Public education  Low cost	Public education	Reduced fees for responsible dog owners and ownership	Yellow Dogs UK  Cardiff North Royal Mail Delivery Office

	<p>pounds and shelter facilities</p> <p>Information &amp; educational campaigns in partnership with responsible stakeholders</p>	<p>responsible dog ownership</p> <p>Public education programmes</p> <p>Reduced fees for responsible dog ownership</p>	<p>spay/neutering schemes</p> <p>Reduced fees for responsible dog ownership</p>	<p>Low cost spay/neutering schemes</p> <p>Reduced fees for responsible dog ownership</p> <p>'First ride home for free'</p>	<p>Public education and advice</p>	<p>LEAD (police led initiative)</p>
<p><b>Is there a specific focus on dog welfare in dog control legislation?</b></p>	<p>No – dog welfare comes from general animal welfare legislation.</p> <p>Animal Health and Welfare Act 2013 requires owners to provide appropriate care and prohibits animal cruelty and neglect.</p>	<p>No – dog welfare comes from general animal welfare legislation.</p> <p>Prevention of Cruelty to Animals Act 1986 and the Domestic Animals Act 1994 set out the legal requirements for suitable care.</p> <p>This includes humane treatment and the prohibition of tail docking, ear cropping, debarking and the</p>	<p>Yes – The dog control legislation (Animal Control Law 1977) outlines:</p> <ul style="list-style-type: none"> <li>• The care and treatment of animals (includes mention of water access and choke collars)</li> <li>• The duties of owners (e.g. cannot leave a dog tethered for more than 10 hours).</li> </ul>	<p>Yes – The dog control legislation (The Responsible Pet Ownership Bylaw):</p> <ul style="list-style-type: none"> <li>• Places limits on number of dogs owned</li> <li>• Prohibits interfering with dogs.</li> </ul> <p>Dog welfare is also covered by provincial and federal animal welfare legislation.</p>	<p>Yes – Federal dog welfare and control is written into the same legislation.</p> <p>The Federal Act on the Protection of Animals, 2004 and The 2nd Animal Husbandry Ordinance, 2004 set out the legal requirements for minimum standards of care for keeping dogs and requirements around muzzling,</p>	<p>No – dog welfare comes from general animal welfare.</p> <p>The Animal Welfare Act 2006 sets out adequate standard of care for animals, including suitable diet and the ability to express normal behaviour patterns. Wales prohibits the use of electronic collars.</p>

		<p>use of pronged collars.</p> <p>There is also recommended best practice.</p>	<p>Dog welfare is also covered by state and federal animal welfare legislation.</p>	<p>The Animal Protection Act (Provincial Legislation) places duty on owners to provide adequate care (food, water, shelter – including quality and space, and medical), and avoid physical abuse/abandonment.</p> <p>Five principles of responsible dog ownership, includes recommendations for training, physical care, medical care, and socialization for pets.</p>	<p>exercise, companionship.</p> <p>It is illegal to use physically abusive training techniques or to train your dog to fight.</p>	
<p><b>Was the legislation/a approach recently reviewed/evaluated?</b></p>	<p>Yes - 2022: <a href="https://www.gov.ie/pdf/?file=https://assets.gov.ie/224384/48b7f6a9-be34-4f27-9be6-d3b65">https://www.gov.ie/pdf/?file=https://assets.gov.ie/224384/48b7f6a9-be34-4f27-9be6-d3b65</a></p>	<p>Yes – 2015: <a href="https://new.parliament.vic.gov.au/get-involved/inquiries/inquiry-into-the-legislative-and-regulatory-framework-relating-t">https://new.parliament.vic.gov.au/get-involved/inquiries/inquiry-into-the-legislative-and-regulatory-framework-relating-t</a></p>	<p>No</p>	<p>Yes – 2020: <a href="https://s3.ca-central-1.amazonaws.com/hdp.ca.prod.app.cgv-engage.files/8215/8827/0551/2020-Responsible-Pet-Own">https://s3.ca-central-1.amazonaws.com/hdp.ca.prod.app.cgv-engage.files/8215/8827/0551/2020-Responsible-Pet-Own</a></p>	<p>No</p>	<p>Yes - 2021: <a href="https://irep.ntu.ac.uk/id/eprint/45440/1/1512314_Nurse.pdf">https://irep.ntu.ac.uk/id/eprint/45440/1/1512314_Nurse.pdf</a></p>

	<a href="#">ec77109.pdf#page=</a> <a href="#">e=null</a>	<a href="#">o-restricted-breed-dogs</a> <a href="#">/</a>		<a href="#">rship-Bylaw-Review-Survey-Final.pdf</a>		
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## 6.2 Ireland

### 6.2.1. Key Legislation

The key legislation relating to dog control is the *Control of Dogs Act 1986 to 2014*. The Act outlines the terms of licencing dogs (including issuing licences, fees, exemptions from licences, and those who are disqualified from holding a licence), the control of dogs, the approach to dangerous dogs, and liability for damage caused by dogs. It also outlines the defence and applicable provisions for any charges arising out of the shooting of a dog (Law Reform Commission, 2020). The *Control of Dogs Regulations 1998* outlines the requirements of dog owners and lists 11 restricted breeds which have additional rules imposed on them. The focus of the legislation is control and responsible dog ownership.

### 6.2.2. Defining & Regulating Dangerous Dogs

Dangerous dogs are defined and identified under the legislation where:

“(a) on a complaint being made to the District Court by any interested person that a dog is dangerous and not kept under proper control, or (b) on the conviction of any person for an offence under section 9 (2) of this Act” (Control of Dogs Act, 1986, s. 22).

While no specific breeds are banned, there are ten dog breeds (including every strain or cross of the following: American Pit Bull Terrier, Bull Mastiff, Doberman Pinscher, English Bull Terrier, German Shepherd (Alsatian), Japanese Akita, Staffordshire Bull Terrier, Rottweiler, Rhodesian Ridgeback, Japanese Tosa, Bandog) listed as subject to further restrictions due to the perceived dangerousness of these breeds. These dogs must be securely muzzled and be on a sufficiently strong chain or leash of less than two meters in length, controlled by a capable person over the age of sixteen years whilst in public. These dogs must also wear a collar or harness bearing the name and address of the owner (Irish Statute Book, 1998). These rules do not apply to the dogs used by the enforcement agencies or rescue teams (Citizens Information, 2023).

Although restricted breeds are not banned by the state, additional measures can be taken by the Housing and Community Services Departments in Councils. Dublin City Council, for example, introduced a ban on the keeping of restricted breeds by City Council tenants in 2007.



### 6.2.3. General Dog Restrictions

All dogs in Ireland, regardless of breed, are subject to certain conditions. For example, all dogs must be kept under “effectual control”. This term is not clearly defined and in the 2019 Dog Control Consultation an amendment to the terminology was considered. Based on the responses to the consultation, the report concluded that a more specific definition could result in specific requirements that may not be suitable for some dogs such as working dogs or rescue dogs (Government of Ireland, 2022). All dogs over the age of four months old must have a licence (with the exception of guide dogs, dogs in local authority possession, dogs in possession of ISPCA, Gardai dog, or dog imported to Ireland for less than thirty days). Individual (€20), Lifetime (€140 life of dog) and General (€400 per year for any number of dogs) licenses are available online or at the post office. All dogs are also required to be microchipped by a vet and registered on a database by the time they are twelve weeks old under the *Microchipping of Dogs Regulations 2015*. Finally, like breeds with restrictions, all dogs must wear a collar bearing the name and address of its owner (Citizens Information, 2023), although this requirement may be phased out due to the use of microchips (Government of Ireland, 2022).

### 6.2.4. Enforcement

Local authorities are responsible for the control of dogs and enforcing laws in Ireland under the *Control of Dogs Act 1986*. They also have the power to introduce bylaws relating to dog control. Local authorities also have the power to employ contractors or non-local authority employees to enforce the law and appoint dog wardens. Dog wardens have the power to request the name and address of anyone suspected of an offence under the *Control of Dogs Act 1986*, seize and detain any dog, and enter any premises to seize and detain a dog other than a home (Citizens Information, 2023).

### 6.2.5. Incentives

There are currently no incentives in place in relation to dog control. However, the inquiry into dog control measures has highlighted that respondents were in favour of introducing incentives that encourage responsible dog ownership. Changes to the licence fee structure were suggested, which included making the fee for entire dogs higher than the fee for neutered/spayed dogs, and to offer a reward to encourage neutering. According to the consultation, this would reduce the number of unwanted dogs and enhance public protection (Government of Ireland, 2022). Educational material is available online (e.g. Dublin Council) for dog owners to promote dog training and responsible dog ownership.

### 6.2.6. Penalties

Penalties for dog control related offences were updated in December 2023. For dogs without a licence, an on-the-spot fine of €150 is payable to the local authority, Guardians of a dog without any identification can receive an on-the-spot fine of €200. Dogs not kept under control can result in an on-the-spot fine of €300. Non-payment of any of these fines can result in prosecution in the District Court with a maximum fine of €2500 and/or 3 months' imprisonment. Serious dog attacks may be responded to under the Non-Fatal Offences Against the Person Act, 1997. A person may be disqualified from keeping a dog if they have been convicted of cruelty to a dog under the *Protection of Animals Act 1911 and 1965* (Citizens Information, 2023) and *Animal Health and Welfare Act 2013*.

### 6.2.7. Dog Welfare

The *Animal Health and Welfare Act 2013* requires owners to provide appropriate care to their dogs and prohibits animal cruelty and neglect (including fighting) and it is the responsibility of the owner to safeguard the dog's health and wellbeing. The Dog Breeding Establishments Act 2010 obliges operators of dog breeding establishments to provide details to the relevant local authority or person charged with the maintenance of a database of information relating to all dogs in the State, of the sale or transfer of a dog.

### 6.2.8. Evaluation

Ireland's approach to dog control was reviewed by experts and through a public consultation undertaken in 2019. The consultation received over a thousand responses from organisations and individuals, who outlined suggestions and improvements to the current approach. In concluding the response to the consultation, the Government outlined its position:

the policy developed in this area must **balance, among other things, the safety concerns held by members of the public...**with the benefits that other members of the public receive through dog ownership, **as well as the welfare of dogs themselves** (Government of Ireland, 2022:33).

To that aim, they clarified that **while the use of a restricted list of breeds is 'not perfect, [it] does play a role in the control of dogs** in Ireland, as it is **a clear, understandable tool** which Local Authorities can use to ensure certain dogs are muzzled and on a leash', and that **once responsible dog ownership measures are in place they may remove the restricted breed list** (Government of Ireland, 2022:31). The priority recommendations from the consultation were:

- Increase fines for contravening the *Control of Dogs Act 1986* (this came into effect on 1<sup>st</sup> December 2023).
- Targeted neutering schemes.
- A media campaign aimed at encouraging responsible dog ownership.
- Improving enforcement by increasing the number of dog wardens and providing dog wardens training on dog bite guidance and enforcement mechanisms.
- A review the legislation underpinning dog control with regards to increasing the minimum age of possessing a dog licence for restricted breeds and being in control of a restricted breed from sixteen to eighteen years old.
- Further consideration of implementing dog control notices as a more efficient and responsive system than that currently provided by the courts. This approach was suggested to reduce the burden on the courts and could provide local authorities with another enforcement tool to ensure that dogs are appropriately controlled.

## 6.3 Victoria, Australia

### 6.3.1. Key Legislation

The *Customs (Prohibited Imports) Regulations 1956* prohibits the import into Australia of six dog breeds (see Table 2). The *Domestic Animals Act 1994* (and subsequent amendments) outline the requirements and restrictions on dog ownership in the state of Victoria. Breed Specific Legislation (BSL) was introduced in 2001 under Commonwealth legislation which placed additional restrictions on the six specified dog breeds. In 2007, amendments were made that stopped councils from registering restricted breeds unless they had been in Victoria pre-2005 and registered prior to 2007. Penalties were added in 2011 for anyone that allowed a restricted breed to kill or place a person in danger of death, and in 2014 penalties were introduced for breeding restricted dogs (Parliament of Victoria, 2016). The legislation also places a duty on all dog owners to register and keep their dogs under control. The *Crimes Act (1958)* allows the for the prosecution of owners whose dangerous, menacing, or restricted dogs injure a person.

### 6.3.2. Defining & Regulating Dangerous Dogs

The banned breeds under the *Customs (Prohibited Imports) Regulations 1956*, are identified as having been bred for fighting and as such, are predisposed towards aggression against other dogs, animals, or humans (Parliament of Victoria, 2016). Breed specific restrictions were first implemented in South Australia (1995), then New South Wales (1998), Queensland and Victoria (2001), and Western Australia (2002,

see Bilik, 2008). In Victoria, for a dog to be declared as a restricted breed, a trained council authorised officer must make an assessment against the approved *Standard for Restricted Breed Dogs in Victoria* (Victoria Government, 2014). If the owner accepts the declaration the local council may register the dog as such and the prescribed conditions - comply with the certain criteria, including having the dog neutered/spayed, leashing and muzzling their dog in public to keep under control, and displaying warning signs on their property - must be met (Animal Welfare Victoria, 2020).

The *Domestic Animals Act 1994* stipulates what constitutes a dog as 'dangerous'. This legislation included an approach aimed at declaring individual dogs who behaved inappropriately as 'dangerous' or 'menacing', known as 'regulation by deed'. Dog attacks can be report to the local council or a Dangerous Dog Hotline. Dogs declared as dangerous or menacing, have further restrictions placed on them, which may include neutering/spaying, containment or restraint, or enrolment on a training course (Parliament of Victoria, 2016). A dog is automatically regarded as dangerous if it is kept for guarding non-residential premises or if it has been trained to attack or bite a person or anything attached to/worn by a person. Any dog can be declared as dangerous by the local council if it has bitten or attacked a person or animal which has resulted in serious injury or death.

A dog is declared to be a menacing dog if it causes a non-serious bite injury to a person or animal, or if it rushes at or chases a person. To 'rush at' means that the dog has approached a person within three meters while displaying aggressive behaviours such as snarling, growling, barking, or raising its hackles. A magistrate can order a council to declare a dog as menacing if the owner has been found guilty of offences relating to their dog rushing at or chasing a person. Following a menacing dog declaration, the owner must comply with requirements to prevent their dog from attacking or causing serious injury to a person in the future, such as leashing or muzzling (Animal Welfare Victoria, 2023B).

In summary, the following criteria is provided:

- The dog has caused serious injury (such as a broken bone, laceration, total or partial loss of sensation or function in a body part, or an injury requiring cosmetic surgery) or death to a person or animal.
- the dog is menacing, and its owner has received at least two infringement notices for failing to comply with restraint requirements.
- the dog has been declared dangerous under corresponding legislation in another state or territory.
- any other prescribed reason (Animal Welfare Victoria, 2023A)

The dangerous dog status or declaration cannot be revoked, amended, or altered. By distinguishing between 'dangerous' and 'menacing' dogs, government agents are assessing the severity of the dog's aggression and the outcome, which provides a nuanced approach to responding to dog aggression.

### 6.3.3. General Dog Restrictions

All dogs, aged three months and over, must be registered. These fees provide revenue for the local council to fund a range of animal services including shelters, dog bins, local events, and reunification of lost dogs with their owners. The fees are set by local councils and so vary across the state (see Appendix 2 for an example of fee categories); however, a set date is provided for all annual registrations (10<sup>th</sup> April). Registration fees can be paid online or in person at local council offices. Owners are eligible for discounted fees if the dog is neutered/spayed, has undergone obedience training, if the dog is registered with an approved organisation and if the owner is a pensioner. Registration is regarded as a key aspect of responsible pet ownership and an effective way of preventing and reducing dog-related offences (Parliament of Victoria, 2016).

Under the *Domestic Animals Act*, all dogs must be microchipped, and a Council cannot register a pet unless it is microchipped, however a high rate of microchipping does not necessarily mean there is a high rate of registration compliance (Parliament of Victoria, 2016). Owners must also ensure their dog is confined to their property and under effectual control in public (including leashed in on-leash areas and not left unattended). There are also conditions set out for the use of off-leash areas, including distance of dog from owner, appropriate supervision and dog behaviour and control. Permits are required if a household keeps dogs over the council limit (which varies – no more than two dogs can be kept in Central Goldfields Shire Council area without a permit).

### 6.3.4. Enforcement

Enforcement of the *Domestic Animals Act* lies with local councils and their authorised officers. Their powers include (but are not limited to):

- Identifying, assessing, and declaring a dog to be a restricted-breed dog
- Assessing, charging, and prosecuting dog owners with an offence relating to a dog attack
- Seizing a dog if the owner is found by the court to be guilty of a dog-attack offence
- Destroying dogs found at large in areas of the municipality specified by local law or in certain conservation areas.

### 6.3.5. Incentives

Responsible pet ownership strategies encourage voluntary compliance with the laws and in doing so offer incentive to responsible pet ownership. The following barriers to responsible dog ownership were identified by the Parliament of Victoria (2016) and incentives added:

- subsidising services that keep dogs safe and well cared for, such as providing free/low-cost access to neutering/spaying, vaccinations, microchipping, training, education, and information.
- Offering discounts on registration.
- Rewards programmes for completion of activities such as attending training or neutering/spaying dogs can lead to discounted registration fees.
- On-line responsible dog ownership Course (see Appendix 2).

A *Pet Registration Incentive Scheme* was trialled by the State Government from 2006 to 2007 to increase pet registration. People registering their dog for the first time received a voucher booklet which could be redeemed for pet-related products and services which were provided by corporate sponsors. The scheme was considered a success which resulted in an increase of 10.1 per cent of registered dogs and cats, yet the scheme was not extended beyond the trial period as the increase in pet registrations was not significant enough to justify the time and money required to continue the scheme (Parliament of Victoria, 2016).

### 6.3.6. Penalties

If a restricted dog breed or a dog that has been declared dangerous or menacing kills a person, the owner can be incarcerated for up to ten years. Where the dog endangers someone's life, the owner can be imprisoned for up to five years (Animal Welfare Victoria, 2023b). For lesser offences such as non-compliance of registration, microchipping, and restraint, a fine can be issued ranging from \$758 to \$3,033 (Parliament of Victoria, 2016). Magistrates might also make a person pay compensation for any damage that a dog does to a person or property (Victoria Legal Aid, 2022).

### 6.3.7. Dog Welfare

There are two pieces of legislation that set out the legal requirements for dog owners; the *Prevention of Cruelty to Animals Act 1986* and the *Domestic Animals Act 1994*. These outline the duties of owners to their dogs, such as humane treatment (including a prohibition on tail docking, ear cropping, debarking and the use of

pronged collars). The *Code of Practice for the Private Keeping of Dogs (2024)* outlines the basic dog welfare and health duties of guardians. This covers basic care such as providing sufficient and appropriate food, water, shelter, and veterinary care. It also outlines recommended best practice, such as daily health checks, training standards, and even precautions for dogs who are at a higher risk of skin cancer (Animal Welfare Victoria, 2023c).

### 6.3.8. Evaluation

Between 2014 and 2016 the Parliament of Victoria conducted an inquiry into the legislative framework for dog control following the death of a young child, who was attacked in her home by an 'at large' American Pit Bull Terrier. The resulting public consultation was aimed at **“strengthening both community safety and fairness to the dogs and dog owners”**. In doing so it identified that the approach to dog control, specifically BSL, has divided opinion. The response highlighted the difficulties that have arisen with the practical implementation of BSL as dog owners have appealed the restricted-breed declaration on the basis that their dogs have been misidentified. Additionally, cases have been lost by local councils due to the vagueness, complexity, and inconsistency of the *Standard* which **result in costs to the council without clear benefits** (Government of Victoria, 2016).

The inquiry also criticised the interchangeable use of the terms 'restricted-breed dog' and 'dangerous dog' as they are two distinct categories. They clarified that a **restricted-breeds most often will not be dangerous** but are listed (Table 2). Whereas, a **dangerous dog can be any breed, including the majority of breeds that are not restricted by law** (Parliament of Victoria, 2016). The Committee made 31 recommendations to improve dog control, these included: allowing Pit Bulls to be registered breeds, ending the requirement for non-racing Greyhounds to be muzzled; enhancing responsible pet ownership, increasing penalties for noncompliant owners of restricted-breed dogs, enhanced information sharing and partnership between agencies and with microchip companies; increased funding for local councils, improved dog attack data; and establishing a taskforce to guide local councils towards a more comprehensive responsible pet ownership approach.

## 6.4 Multnomah, US

### 6.4.1. Key Legislation

The *Animal Control Law (1977)* establishes and implements a programme for licencing and regulating dogs (and other animals), and the facilities that house them in Multnomah County in the state of Oregon. The Law states that **animals require legal protection, and that the property rights of owners/keepers, as well as**

**the health, safety, and welfare of the county residents should be protected.** Oregon Revised Statutes Chapter 609 constitutes state law for regulating dogs, but this may be superseded in home rule counties which provide regulation by ordinance. The key focus of the legislation is animal welfare and community welfare.

#### 6.4.2. Defining & Regulating Dangerous Dogs

The *Animal Control Law (1977)* classifies dogs as dangerous if they have caused serious physical injury or death to any person (whether confined or not), or if the dog is used as a weapon. The legislation recognises 'levels of dangerousness' and provides a nuanced response to dog aggression by categorising dogs as 'dangerous' or 'potentially dangerous' dogs (section 13.402). Classification of a dog as 'dangerous' is based upon the dog engaging in any of the following behaviours: a) whether or not confined, causes the serious physical injury or death of any person; or b) where a dog is used as a weapon in the commission of a crime. However, should the director or hearings officer has:

"discretionary authority to refrain from classifying a dog as a dangerous dog, even if the dog has engaged in the behaviors specified...if the behavior was the result of the victim abusing or tormenting the dog or was directed towards a trespasser or other extenuating circumstances that establishes that the dog does not constitute an unreasonable risk to human life or property"

Dogs classified as dangerous may be kept by the owner at the discretion of the authority, if placed in a 'certified dangerous animal facility'. Otherwise, the dog will be euthanized. This exemption may be made if there is reasonable likelihood the dog is not a danger to human life, won't repeat the behaviour, and if they have successfully completed the certified American Temperament Testing Society or Pet Partners.

Potentially dangerous dogs are defined as such if they have engaged in any of the following behaviours, which are listed by level of severity (section 13.401):

- "Level 1 – a dog at large is found to menace, chase, display threatening or aggressive behavior or otherwise threaten or endanger the safety of any person.
- Level 2 – a dog while at large causes physical injury to any domestic animal.
- Level 3 – if a dog while confined so as not to be at large aggressively bites any person.
- Level 4 – a dog, while at large aggressively bites any person or kills/causes the death of any domestic animal or livestock. OR a dog classified at Level 3 repeats the behavior or after receiving notice of the level 3 classification".



Potentially dangerous dogs are also subject to an increased licencing fee, and require additional annual payments based on their classification level. As per dangerous dogs, the authority may refrain from this classification if it was determined the dog was abused or responding to a trespasser. The restriction set out under the *Animal Control Law (1977)* increase in severity in line with the level of classified risk. For example, Level 1 dogs need to be restrained when outside of the home on a leash so as not to be at large. Level 3 and 4 dogs need to be confined within a secure enclosure when not on a leash, must be muzzled, wear a special tag/collar and be under control of a capable person when off-property. Owners cannot remove warning signs from their home and cannot move to a new address or transfer ownership of the dog without prior written notice. Additionally, the authority may require the owner to complete a pet ownership programme and obtain public liability insurance (further restrictions are outlined in Appendix 2).

#### 6.4.3. General Dog Restrictions

The *Animal Control Law (1977)* and *Oregon Revised Statutes Chapter 609 2021* outline the duties of owners for responsible dog ownership, including prohibited animal and owner behaviour and welfare requirements. Prohibitions include permitting any animal to be at large, leaving an animal unattended for more than 24 consecutive hours without minimum care, and permitting any animal to unreasonably cause annoyance, alarm, or noise disturbance. Further details of general restrictions are provided in Appendix 2. Under the legislation, dogs should be licenced within thirty days of reaching the age of six months, or within thirty days of obtaining residency in the county, whichever occurs later. Licencing requires pet tags to be always displayed, except when the dog is confined to the owner/keeper's premises. Rabies vaccinations must be up current at the time of registration. Pet licences fees vary in price with lower costs for spayed/neutered dogs and senior citizens. Senior citizens receive a 50% reduction in cost, but are limited to two dogs per household. Licences can be obtained for one, two or three-year periods (see Appendix 2).

#### 6.4.4. Enforcement

The Director of Multnomah County Animal Services, and those designated by the Director, are required to enforce the *Animal Control Law (1977)* and *Oregon Revised Statutes Chapter 609 2021*. This can also include Peace Officers and Animal Control Officers. Actions undertaken by the enforcing agencies include, but are not limited to; issuing fines, hearing appeals, removing and impounding seized animals, and the destruction of dogs. There is also mention of Animal Welfare Organisations, with recognition of their role in acquiring and transferring dogs and other animals.

#### 6.4.5. Incentives

The revenue generated by dog licencing is used for public education and low cost spay/neuter programmes. The fees are also used to support animal services (such as addressing loose aggressive dogs and bite incidents) and animal neglect and cruelty investigations. The dog licensing programme is also advertised for being effective at helping to reuniting owners with their lost pets, which incentivizes compliance with the dog licensing programme.

#### 6.4.6. Penalties

If a county animal control officer or person designated by the Director has reasonable grounds to believe that an animal or facility is in violation of Chapter 13 of the *Animal Control Law (1977)*, which outlines the legislation on Animal Services, that officer or designee is authorised to issue the owner/keeper notice of civil infraction. The notice will be served on the owner/keeper of the animal or facility in violation of the chapter. Most of these infractions and violations are listed in order of severity (Class C-A) with fines that increase to match severity. Additional requirements can be put in place for more serious misdemeanours, or for several infractions, which can include being required to attend a responsible pet ownership program or an obedience course. In some cases, the maximum penalty can be applied for misdemeanours, which can carry prison sentences. However, the more serious crime of what is known as 'maintaining a dangerous dog' is categorised as a Class C felony, where the maximum potential penalty can include a five-year prison sentence.

#### 6.4.7. Dog Welfare

The *Animal Control Law 1977* and *Oregon Revised Statutes Chapter 609 2021* outline the required care and treatment of dogs, including setting out the duties of owners. For example, owners cannot leave an animal unattended for longer than 24 hours without minimum care and confining animals in motor vehicles is prohibited. Dog welfare is also informed by federal, and state laws. The *Animal Welfare Act 1966* (federal) sets out the minimum standard of care for animals and prohibits dog fighting. Oregon has laws against animal cruelty and neglect, including sexual abuse of animals. There are also regulations such as standards of care for dog breeders (Oregon Humane Society, 2014).

#### 6.4.8. Evaluation

No review of the *Animal Control Law (1977)* or the current approach to dog control has been undertaken, although an evaluation of the Multnomah County Animal Services is in progress. The review considers if the health and safety of people is balanced in relation to that of animals. For example, in the animal services

evaluation, it is already noted that improvements can be made in the adoption of dogs to better protect the health and safety of people. Behavioural notes provided for the dogs were limited in scope, but behavioural concerns were discussed with owners prior to adoption, the review suggests documenting and discussing the behavioural concerns of dogs with potential owners prior to adoption (Olympic Performance Inc., 2023).

## 6.5 Vienna, Austria

### 6.5.1. Key legislation

Austria has nine federal states, Vienna is both a city and a federal state. Each state is guided by national law and has limited powers to enact provincial legislation. The Federal law makes a distinction between two areas of regulation, dog keeping and welfare. Under the *Federal Act on the Protection of Animals 2004* (known as *Tierschutzgesetz [TSchG], 2004*), chapter one identifies general welfare provisions, chapter two regulates the keeping of dogs. The *Tierhaltungsverordnung (2004)* specifies the housing and care needs of dogs (e.g. shelter). Vienna-specific regulations include *Wiener Tierhaltegesetz 1987* (last revision 2024 and *Listenhunde 2010*, which specifically address the restrictions on dog keeping and restricted breeds in this state

### 6.5.2. Defining and regulating dangerous dogs

The *Wiener Tierhaltegesetz* details the requirements for listed and unlisted dog breeds. According to this legislation the local magistrate must provide a decree which designates listed dogs. The *Listenhunde 2010* lists 12 dog breeds (or any mix of these breeds) that are recognised as fighting and potentially dangerous dogs. Owners of these dog breeds must pass a dog licence test within three months, to receive their mandatory license. If owners repeatedly fail the mandatory test, within a certain number of tries, ownership of the dog must be forfeited. The test must be re-taken by all owners every two years. This period can be shortened or extended, or 10 hours of training requirements may be necessary dependent on the test results. Owners must be over 16 years, be within an alcohol limit when walking a listed dog and must not be convicted of serious violent and organised offences or cruelty to animals. Listed dogs, from six months and over, are required to always wear a leash and muzzle in public, except in completely enclosed dog zones.

The legislation also recognises that *any* dog can be dangerous. Thereby, all dogs with a biting history or that are reactive, are required to wear a muzzle in *all* public spaces. In some cases, dangerous dogs that are not *listenhunde* can be required to

have a dog license. While it was not possible to identify the specific scale used to determine the severity of dog bites, officials balance their response to dog bites according to the severity and outcome of the bite.

### 6.5.3. General dog restrictions

Under the *Federal Act on the Protection of Animals 2004* (known as *Tierschutzgesetz [TSchG], 2004*) it is a requirement for all dogs to be microchipped and registered on a federal database which covers the whole country (section 24a). The *Wiener Tierhaltegesetz* requires all dog owners to register and pay a dog tax and to take out liability insurance in case of injury or property damage by their dog (with an insured sum of at least €725,000). Since 2019, dog owners must complete a four hour (€40) dog ownership course, called the *Sachkundenachweis* (certificate of knowledge), prior to owning a dog (except in cases where they have owned a dog in the last two years). Muzzling and leashing rules apply to all dogs in certain public spaces, whereby all dogs must either wear a muzzle or be always held on a lead and under control in public. In busy public areas dogs are required to wear a muzzle. Local communities can also designate their area as a dog muzzle-required area for all dogs. A magistrate can declare certain areas as prohibiting dogs or as dog parks (off-leash). Under the federal legislation, *TSchG 2004*, you must not train a dog to be aggressive, for fighting, or encourage your dog to chase another dog. Owners must follow dog waste rules and provide the minimum care requirements for their dogs.

### 6.5.4. Enforcement

Enforcement is the responsibility of the Vienna State Police Department, especially in cases of injury to humans or property damage. The police can require owners to follow certain conditions to avoid future incidences (aggression, bites, etc) which can include a mandatory dog license. *Tierschutzombudsstelle Wien* (the Ombuds Office for Animal Protection) focused on issues of animal welfare and protection, but this is in tandem with other authorities. The Department of Veterinary and Animal Welfare for the City of Vienna also plays an important role with certain regulations, this department has a Dog Team that encourages cooperation between dog owners and non-dog owners and monitors compliance with regulations in public spaces.

### 6.5.5. Incentives

Dog owners are incentivised to source their dog responsibly. If a dog is purchased from an animal shelter, they are exempted from paying the dog licensing fee for three years. If owners successfully complete the dog license exam, which is mandatory for listed dogs) they are exempted from paying the dog registration fee for that year for their 'certified city dog'.

### 6.5.6. Penalties

Those who own a listed dog, found without a license, may be fined €1,000. Those who have dogs without a muzzle, may receive a fine of €100. If they are repeat offenders, owners face higher fines and possible seizure of their dog. The Vienna State Police Department can impose additional requirements identified to prevent future dog bites, including the requirements identified for restricted breeds. If a dangerous incident occurs and the owners do not possess a dog license or registration, the dog can (permanently) be removed from the owner. In serious cases, such as instances of injury or death, owners can face large fines and imprisonment. Penalties can increase based on factors such as the owner's ability to be in control of their dog at the time of the incident (e.g. if they were intoxicated) or if the dog wasn't muzzled in an area where it is a requirement to do so.

### 6.5.7. Dog welfare

The Federal Legislation provides for both welfare and control of dogs, with a particular emphasis on their basic housing needs. In Austria, until 2004<sup>9</sup>, animal welfare was legislated for at the state level. In 2004 the *Federal Act on the Protection of Animals 2004* (known as *Tierschutzgesetz [TSchG], 2004*) made state laws consistent by putting provisions in place for dog welfare and duties on owners. This legislation, for example, prohibits the ownership, use or sale of training materials which physically force or punish the dogs (e.g. shock collars). It also places an obligation on people to provide first aid to dogs they have harmed or jeopardized (e.g. in vehicle accident). Under the *Tierhaltungsverordnung (2004)* dogs must be walked once a day, have access to toilet facilities twice a day, and have contact with humans twice a day). Muzzles must be adjusted to the size and shape of the dog and allow them to pant and drink normally. To support this federal law, there is a wealth of information available from local authorities on dog welfare; including, but not limited to, issues such as 'torture breeding'. For example, it is illegal to import, sell or give away Brachycephalic breeds in Austria. In Vienna, education is a prime focus for promoting dog welfare, this is evident with the dog ownership course, but also through other available programmes. Advice is provided to owners to help protect their dogs from becoming aggressive, for example, the Viennese Government suggests avoiding purchasing squeaky toys for dogs as it could encourage biting behaviour (Stadt Wien, 2023).

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<sup>9</sup> Because of a Volksbegehren (public petition) in 1996, which requested consistency in the approach to animal welfare across the country, the Federal TSchG 2004 was enacted.

### 6.5.8. Evaluation

There is no recent evaluation available on the dog control approach in Vienna, but there are lessons to be learned from a report on security police dog legislation in Austria. In the report, the incisive points made question the balance of human and dog safety and welfare. Specifically, as there are general leash and muzzle requirements for all dogs in most public spaces, is it possible for dogs to have freedom of movement, social contact, and express natural behaviours (Binder, 2019)?

## 6.6 Calgary, Alberta, Canada

### 6.6.1. Key Legislation

The Alberta *Dangerous Dogs Act 2000* provides provincial legislation for dangerous dogs. It gives the power for the public and peace officers to make a complaint to a judge about a dog dangerous out of control and empowers judges to require a destruction order or restrictions for the dog. Otherwise, dog control in Canada is regulated by municipal bylaws. The *Responsible Pet Ownership Bylaw (RPOB)* outlines the legislation applicable to the City of Calgary. The bylaw advocates **for responsible dog ownership through maintaining a happy and healthy dog population and avoiding dog-related disputes** (Calgary, 2023). This policy focuses on 'deed' rather than 'breed' and does not restrict any breed or type (Mouton and Rock, 2021). Under the RPOB, dogs must be always under human control, thereby, dog owners must never allow their dogs to bite, attack, or chase people, other dogs, or wildlife. The bylaw also dictates that dogs must always be leashed when in a public place, except for designated off-leash areas within select parks (Rock *et al.*, 2016). The RPOB is framed around three overlapping actions – licensing, public education and enforcement and promotes five principles of responsible dog ownership:

1. "Licence and provide permanent identification for cats and dogs.
2. Spay or neuter pets.
3. Provide training, physical care, socialisation, and medical attention for pets.
4. Do not allow pets to become a threat or nuisance in the community.
5. Procure your pet ethically from a credible source."

### 6.6.2. Defining & Regulating Dangerous Dogs

The definition of a dangerous dog is based on the severity of the dog-bite incident, dogs with a documented history of biting may be subject to restrictions such as

exclusions from off-leash parks and mandatory muzzling (Mouton and Rock, 2021). Dogs involved in dog bite incidents are assessed using the Ian Dunbar Scale to determine the severity of the risk and response (see Appendix 3). There are two main categories of dangerousness, nuisance, and vicious animals. Nuisance animals require a Nuisance Animal licence (Part 5 of the RPOB) and are defined as:

- “the animal has engaged in repeated threatening or aggressive behaviours
- the animal has been found running at large more than once
- the animal is a dog that repeatedly barks, howls, or otherwise causes noise which disturbs any person; or
- the owner has demonstrated an inability to control the animal in an off-lease area or any other public area on more than one occasion.”

Conditions placed on a nuisance dog include a curfew on the dog between 10pm and 7pm, keeping the dog in a secure enclosure when outdoors on the owner’s property, and leashing and muzzling in public. Owners of nuisance dogs must also retain the services of a certified professional dog trainer who will provide specific education and training for a specified amount of time. Nuisance dogs are prohibited from entering or remaining in an off-leash area and can be issued with any condition that is expected to reduce nuisance behaviour.

Vicious dogs are defined as exhibiting more serious aggressive behaviours. They are subjected to the rules for nuisance dogs and additional restrictions, such as being marked by a tattoo and microchipped. Dogs regarded as a vicious animal (Part 6 of the RPOB) include where:

- “the animal has caused severe injury to a person, whether on public or private property.
- the animal has, while off its owner’s property, caused severe injury or death to another animal; or
- there are reasonable grounds to believe the animal poses a risk to the health and safety of persons in the city”.

### 6.6.3. General Dog Restrictions

All dogs regardless of breed must be licenced and should wear a City of Calgary licence tag as soon as they reach the age of three months. Dogs must always be leashed unless signposts indicate otherwise, or where the dog has the right of occupation. Dogs are prohibited from public areas such as school grounds, playgrounds, sports fields, golf courses, cemeteries, and wading or swimming areas. When in designated off-leash areas, dogs must remain under control, meaning that they must be in sight of their owners and respond to sight or sound commands. On pathways dogs must be on a shorter leash (no longer than two meters), on the

right-hand side of the path, and must be prevented from interfering with or obstructing other users. Guardians must not cycle, skateboard, or in-line skate with a dog on a leash while on a pathway. Dogs must be kept under control (e.g. not bite, injure, chase, threaten or attack a person or animal), avoid causing a noise disturbance or property damage. Owners of dogs with a history of biting must pay a higher licence fee (Mouton and Rock, 2021). All dog owners must ensure that they bring along a suitable means to pick up dog faeces and all remove dog faeces appropriately both on and off their property (Calgary, 2023).

#### 6.6.4. Enforcement

The Chief Bylaw Officer is responsible for overseeing enforcement of the bylaw and deciding the outcome of serious dog bite incidents. These outcomes may also be passed to an expert Tribunal panel. Under the RPOB, an 'officer' refers to a Bylaw Enforcement Officer, a peace officer, or police officer. Throughout the bylaw, differentiation is not made to which officer is responsible for enforcing different sections of the bylaw. Peace officers have the power to identify and assess aggressive dogs and to seize them, where necessary. They also ensure general compliance with bylaws and respond to incidents reported to the City. Where an officer believes that a person has violated a RPOB, they may commence proceedings by issuing a summons by way of a violation ticket. Police officers are mostly likely to engage in dog control if a serious attack or fatality occurs. The *Municipal Government Act 2000* allows city officers to enter premises to conduct inspections to determine whether a bylaw, or order issued pursuant to a bylaw has been complied with.

#### 6.6.5. Incentives

The review of the bylaw found that public respondents preferred an incentive over consequences approach. This approach has been adopted to encourage licencing compliance. For example, licence fees are reduced for neutered/spayed dogs and no/low-cost spay and neuter programmes are available for low-income pet owners (Calgary, 2023). For dogs adopted through the Calgary Humane Society, the City offers their owners a free six-month licence. This also means that when dogs are adopted, they are in the system and easy to track, and therefore licenced for life (ASPCA, 2007). Owners are encouraged to license their dogs to ensure they are promptly returned to them should they be at large. Approximately 89 per cent of dogs impounded by Animal Services were returned to their owners, and of those 85 per cent were returned to their owners within 24 hours. These services also ensure the health and wellbeing of recovered animals until they are reunited with their owners or adopted into new homes. Recovered animals are socialised and neutered/spayed prior to adoption. Approximately 97 percent of impounded



animals are effectively supported by Animal Services, with 3 percent being euthanised due to health or behavioural issues.

Licensing fees have also provided owners with vouchers for pet-related products and services provided by corporate sponsors, and public education programmes on responsible pet ownership.

#### 6.6.6. Penalties

Nuisance and vicious animals are subject to fines where a bylaw has been breached, and entire animals receive an increased fine (additional \$100). Officers can issue a Penalty Tag to a person who contravened a section of the bylaw, this must set out the specified penalty and may provide for early reduced repayment within a set timeframe. Early repayments are accepted in place of a prosecution under the *Provincial Offences Procedures Act 2000*. Where payments are not made, a violation ticket may be issued in accordance with the Act.

Remedial orders which set out the requirement for persons who have contravened any provision of the bylaw may be issued pursuant to section 545 of the *Municipal Government Act 2000*. Failure to comply with the order is an offence. City employees and agents may enter the owner's property upon reasonable notice to undertake removal and restoration work. Under the bylaws, multiple charges may be taken against owners whose dogs have engaged in a serious bite incident. For example, the owners of three dogs which attacked and killed an elderly women were jointly charged under the different offences: 1) three offences for an animal attack on a person causing severe injury, 2) three offences for an animal attack to a person, 3) three offences for an animal bite to a person, and 4) three offences for an animal running at large, resulting in a maximum possible penalty of \$120,000 (Moore, 2022). In September 2023, the owner of two dogs running loose, who injured a pregnant woman and killed her dog, faced four separate bylaw charges with a penalty of up to \$40,000 (Tran, 2023). Criminal proceedings can be brought against a person if negligence results in the death of a person, otherwise owners are subject to fines under the bylaws and imprisonment on non-payment of fines (Calgary Herald 2022).

#### 6.6.7. Dog Welfare

Animal welfare is layered through federal, provincial, and municipal legislation. Section 445.1 (1) of the *Criminal Code* (federal) makes it an offence to cause or allow someone to inflict or cause unnecessary suffering, pain, or death to dogs. This offence can include a guardian allowing a dog to suffer pain or injury (e.g. from another dog). Alberta's *Animal Protection Act (amended 2006)* (provincial) also

makes it an offence to not provide adequate food, water, shelter, ventilation, space, and veterinary care. The *Responsible Pet Ownership Bylaw* (municipal) places limits on how many dogs an individual can own (to avoid overcrowding or hoarding) and prohibits interfering with an animal (e.g. throw/poke an object in an enclosed space where an animal is being kept, cause or allow an animal to be at large). Dog welfare is also promoted through education and promoting the City's five principles of responsible pet ownership. The third principle being 'provide training, physical care, socialization, and medical attention for pets' (University of Calgary, 2018: 0).

### 6.6.8. Evaluation

A review of the bylaw was carried out by Leger on behalf of the City of Calgary. The review consisted of eight-hundred telephone interviews and four in-person focus groups with the city residents. The key recommendations from the review included limits on the number of pets a household should be allowed, with a maximum of two to three, and limits on the number of dogs being walked by a professional dog walker, particularly in off-leash areas (Leger, 2020). Suggestions were also made in respect of incentives to help improve licencing compliance, such as multi-year licencing fees, discounts on vaccinations, and pet insurance (Leger, 2020). These proposals are consistent with academic research by Rock *et al.* (2017), who suggested incentives should be extended to vaccinations due to the issue of inequitable access to veterinary services. It was also suggested that incentives around licence fees, such as including the microchipping costs, or offering multi-pet and senior pet discounts would encourage licencing compliance. Further details on the consultation are available in the Calgary empirical case study that follows.

## 6.7 Summary

These five case studies demonstrate the breadth of approaches to dog control and dog bites, emphasising it is not a 'one size fits all' and that some tools work well in certain locations, but not others. This is important when considering how these approaches may enhance the current UK response to dog control. The case studies share many of the general restrictions for dog owners. Each requires some form of registration or licencing, identification, and all make guardians responsible for ensuring their dog is under sufficient control in public (and some include private) spaces. There are notable differences in the definitions and expectations of effective control. This is consistent with the academic studies previously noted, which highlight differences in the understanding of responsible dog ownership among owners and enforcement agents. The terminology used in legislation and policy

should be considered, for example, is the legislation fundamentally about 'control', 'dangerous dogs' or 'responsible ownership'.

Identification and registration are managed differently, with compulsory microchipping a requirement in four locations, while the use of collars and identity tags was important for both the general and 'dangerous' dog population identification. The use of tags may be seen as less relevant in lieu of microchipping and technology. However, it is a useful visual aid in enforcement and where special tags are provided by authorities, it is an opportunity for education. Licensing and registration were used interchangeably, and while low compliance with licensing is widely acknowledged, they were valued in case study locations for four key reasons. They provide an essential funding stream for enforcement and enrichment of the dog control approach (especially those with added welfare and incentives goals). Where compliance is high (e.g. Calgary) it has provided valuable data on the dog population and owner demographics, it enhances the traceability of dangerous and 'at risk' dogs and provides a contact point for education and awareness raising among dog owners. Calgary is acknowledged to be unique in public compliance with licensing, with research highlighting the ease of identification has made Calgary safer and officers more efficient and effective (see Stella the Rottweiler in *The Conversation*, 2021).

The case studies evidence the different ways in which 'dangerousness' and 'responsible' dog ownership are conceived in law and practice. The Calgary and Multnomah County dog control approaches can be summarised neatly as 'deed not breed', whereas the approach in Ireland, Vienna, and Victoria acknowledge both deed and breed in their definitions of, and responses to, dangerous dogs. Each location identified 'dangerousness' based on deed, however, the additional restriction for certain breeds implies their dangerousness, regardless of their behaviour. In Vienna, the dangerousness of the owner is also considered, whereby, those involved in serious violent criminal offences are prohibited from owning a listed breed. This view not supported by the academic literature. Victoria, Vienna, Calgary, and Multnomah County take a more nuanced understanding of dangerousness than Ireland by categorising incidents and responses on the severity of the bite.

Each approach acknowledges the need for enhanced public safety and protection and share similar ideas of the effective restrictions and measures which should be in place for dogs who demonstrate dangerous behaviour (e.g. leashing, muzzling, prohibited spaces, age of guardians, additional training, and oversight). A tiered response, with stricter measures in place for the more serious attacks was available in locations which categorised the level of dangerousness. For example, destruction orders were a last resort and only used in the most serious cases in Calgary. While

Multnomah County clearly outlined extenuating circumstances, even for very serious dog aggression and provided alternative options for these dogs.

Enforcement powers and responsibilities vary across the case studies due to different governance structures. Broadly, the responsibility belongs to designated statutory agencies, such as the local authorities. However, due to the nature of dog-related problems, serious dog control issues often required police involvement. In their policy reviews, both Victoria and Ireland identified the value of increased interagency cooperation.

The use of incentives was evident in each case study, however, a clear balance between incentives and consequences (carrot and stick) was most evident in Calgary. In contrast, Ireland is primarily punitive, with few incentives promoting responsible dog ownership. Schemes such as low-cost spay/neuter programmes and reduced licensing fees were used to remove barriers to licensing compliance and enhance dog welfare (e.g. dog sourcing). The availability of education and training was also notable. Both Rock et al. (2017) and the Calgary bylaw review (Leger, 2020) identified that participants responded positively to incentivising schemes and preferred them over the consequences approach. Reviews in Ireland and Victoria, in contrast, identified the need for increased penalties for noncompliance (Government of Ireland, 2022; Government of Victoria, 2016). Consistently, the reviews concluded the need for greater education on responsible dog ownership and questioned the focus on breed as measure of dangerousness (Victoria, Ireland). Particular concerns over the practical implementation of BSL, the divisive nature of the topic and issues of terminology when it comes to restricted vs dangerous dogs were evident (Government of Ireland, 2022; Government of Victoria, 2016; Leger 2020).

It is difficult to judge the success of the dog control measures in the case study locations; many factors can influence effectiveness, there is generally limited evaluation and little robust data on dog bite rates. It is thereby not within the remit of this study to accurately measure the effectiveness of each of these approaches. However, these case studies offer valuable insights into the efficacy of these dog control strategies and the possible value in diversifying the UK approach. While caution is advised when seeking to apply findings from the case studies to the UK context, they certainly provide options for addressing the limitations identified by Nurse *et al.* (2021). In considering the UK alongside the case study locations, the UK approach appears punitive and crude.

The Calgary model stands out among these case studies, as it is known for its high licensing and social compliance rates, nuanced response to dangerousness, low pet euthanasia rates, and diverse toolbox in approaching dog control. Nonetheless, the bylaw review highlighted many areas for improvement, lessons which are also of

value to the UK. The next section provides a more detailed evaluation of the Calgary model.

## 7. Evaluating the Calgary response to responsible dog ownership

### 7.1 Context

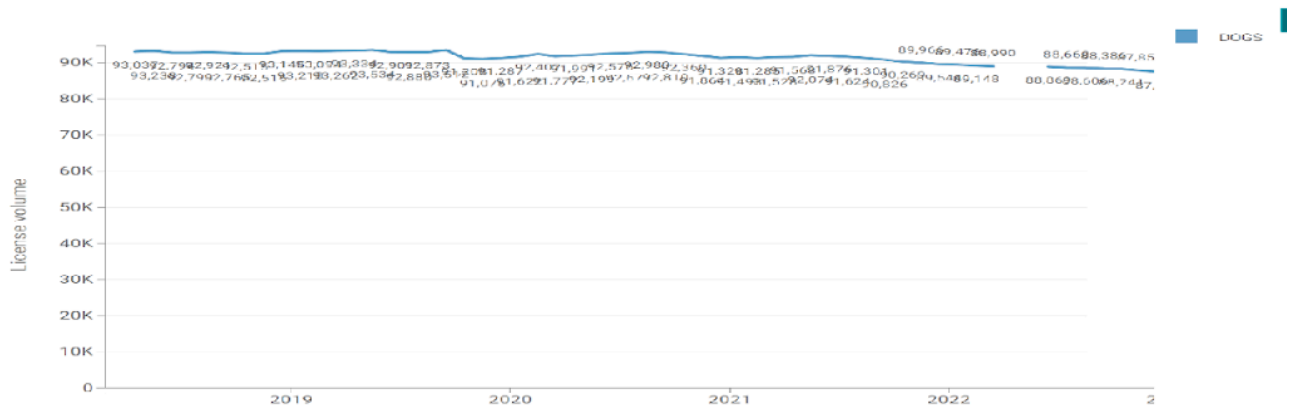
The following section provides a detailed narrative on the Calgary response to responsible dog ownership, utilising the empirical data analysis from interviews, documents, and dog bite data. The estimated population in Calgary in 2024 is 1.4 million people (Calgary City, 2023). It is recognised as having one of the highest dog ownership and off-leash park rates per capita ratios in North America. It is generally an affluent municipality, with low population density and some low-income neighbourhoods. Calgarians were described as generally conservative, law-abiding, engaged with the public authorities, and embracing a dog positive culture. Through policy and practice the authorities aim to balance the needs of dogs, their owners, and the community. Education, licensing, and enforcement are the core features of the Calgary approach, with education and compliance the primary response, and enforcement only when necessary. This is achieved through a focus on responsible dog ownership, the requirements for which are set out in the Bylaw. The bylaw is supported by a robust governance structure, enforcement approach and engagement with the community and stakeholders. This section explores each of these in turn and then evaluates the external factors which influence the approach, the evidence of effectiveness and key features which make it work. First, an overview of the dog population and dog bite data provided by Calgary City for this project is presented.

#### 7.1.1 Dog population and dog bite data

In January 2024, the licensed dog population in Calgary was 89,164, a decrease from 94,572 in January 2023. Although Figure 2 shows the licensed dog population on a general downward trend since 2018, interviewees identified an increased dog population and related concerns. Similar trends were identified in the UK, with problematic breeding and sourcing of companion dogs, prior to and during the Covid-19 pandemic (Maher and Wyatt, 2021), followed by a surge in relinquished and abandoned dogs. In Calgary, this was explained by the period of economic inflation and stress, lack of affordable pet-friendly housing and owners' inability to manage complex dog behavioural and medical issues. Interviewees noted the lower rates of licensing likely reflected reduced compliance and increased relinquishment of dogs, rather than an actual decline in the dog population.

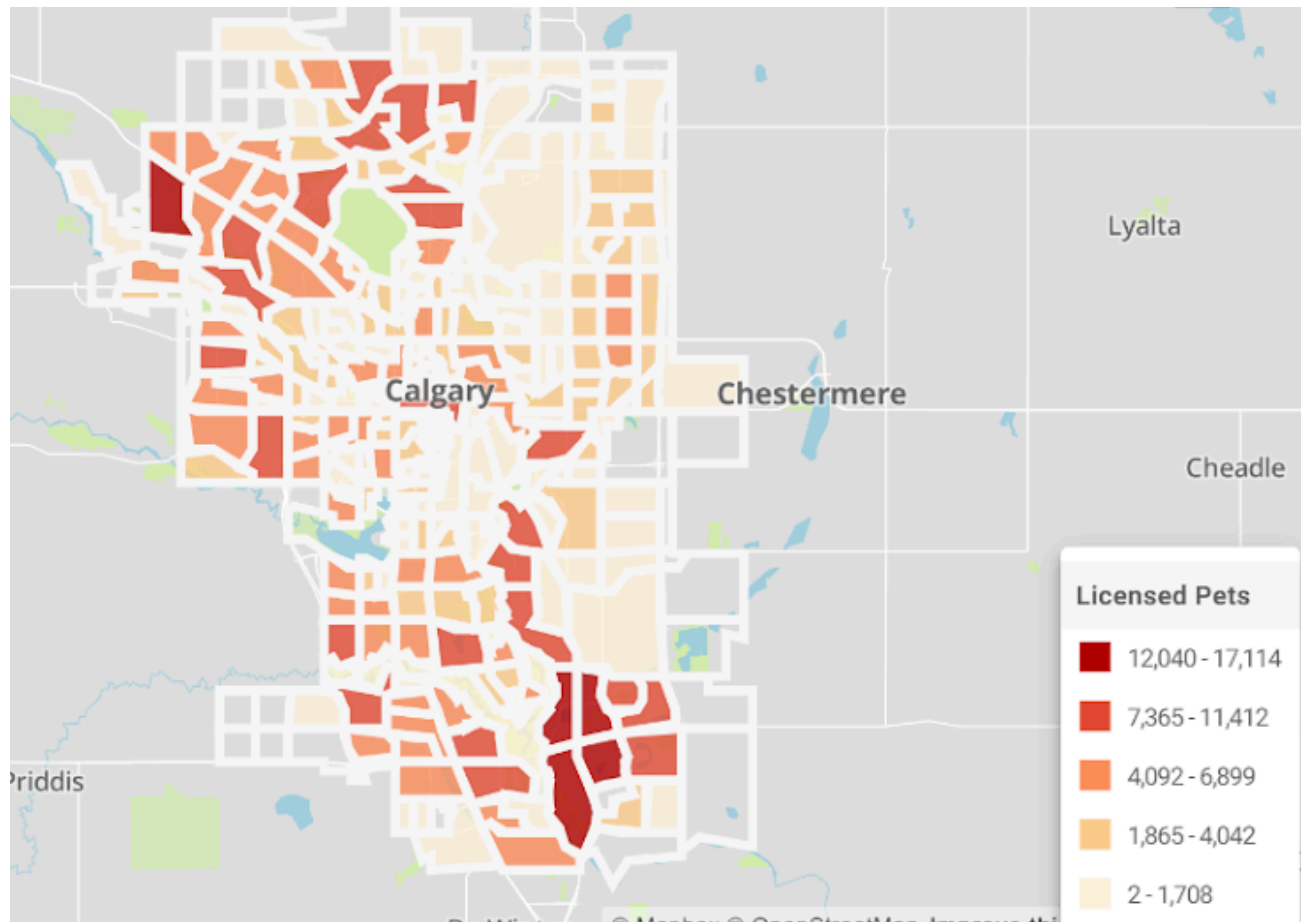
The licensing data also provides the geographical density of the dog population, showing significant differences between communities (Figure 3). Labrador Retrievers are the most licensed dog, followed by German Shepherds and Golden Retrievers (Figure 4). As Calgary is situated close to municipalities which ban 'bully breeds', it was noted by interviewees that there is a higher rate of these breeds than in other jurisdictions. Pit bulls, for example, are currently the 27<sup>th</sup> most licensed dogs in Calgary.

Figure 2: Licensed dog population 2012-2024



(Source: <https://data.calgary.ca/Services-and-Amenities/Total-Number-of-Licensed-Pets/gcw3-s66r>)

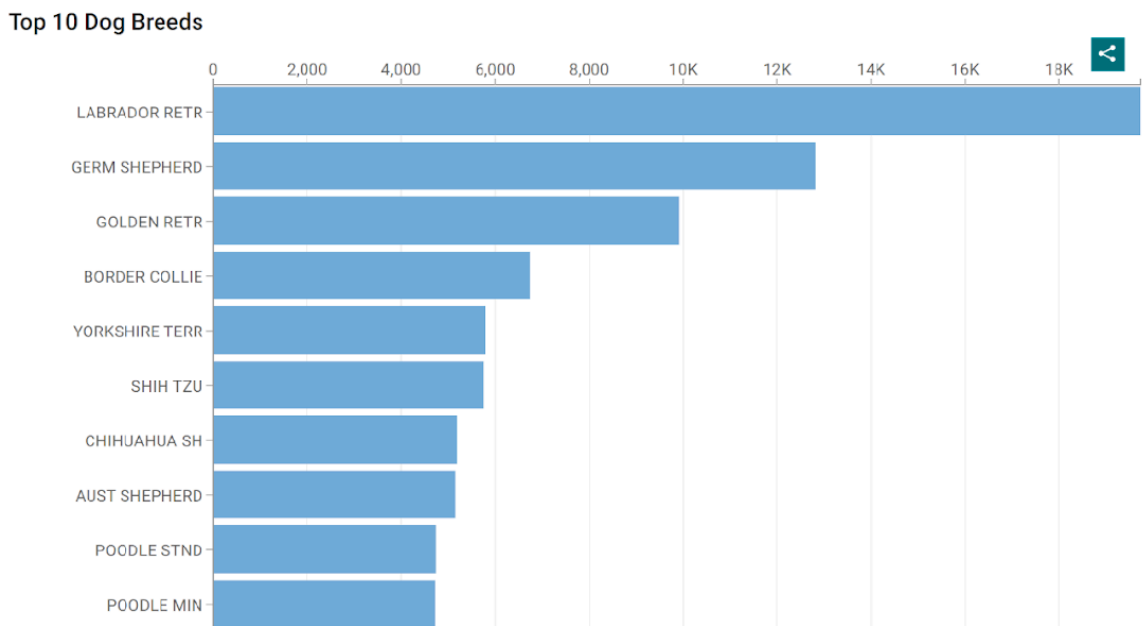
Figure 3: Geographical density of licensed dog population February 2023-24



(source: <https://data.calgary.ca/Services-and-Amenities/Licensed-Pets-Map/nrfm-bzhx>)



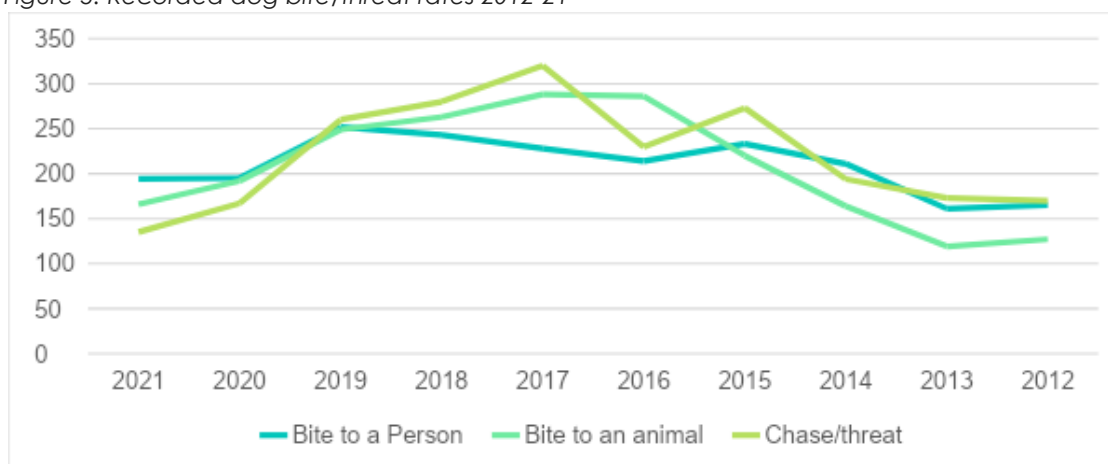
Figure 4: Licensed dog breeds 07th Dec 2023- 07th March 2024



(Source: <https://data.calgary.ca/Demographics/Top-10-Licensed-dog-breeds-chart-Last-90-days-/i6vk-zby9/>)

Interviewees identified a variety of irresponsible dog ownership issues, from dog waste, non-compliance in on-leash areas, irresponsible behaviour in off-leashed parks, and inappropriate breeding. The recorded incidents of dog bites and rates were of particular interest to this project. Figure 5 provides a longitudinal (2012-2021) view of bites to persons, chase and threat incidents to persons, and bites to other animals. Following a general increase in all bites and threats, these rates have reduced significantly since 2018. For example, from 194 dog bites in 2012, to a high of 243 in 2016 and low of 161 in 2020. No human fatalities were recorded during this period. While accurate breed identification is notoriously difficult in dog bite data, 136 different ‘primary’ breeds were recorded in the Calgary data. The most common breeds recorded in bites to persons were pit bulls and shepherds (both 13%), followed by labrador retrievers (8%) and border collies (6%). The subjectivity and difficulty in identifying primary breeds must be noted when considering these figures.

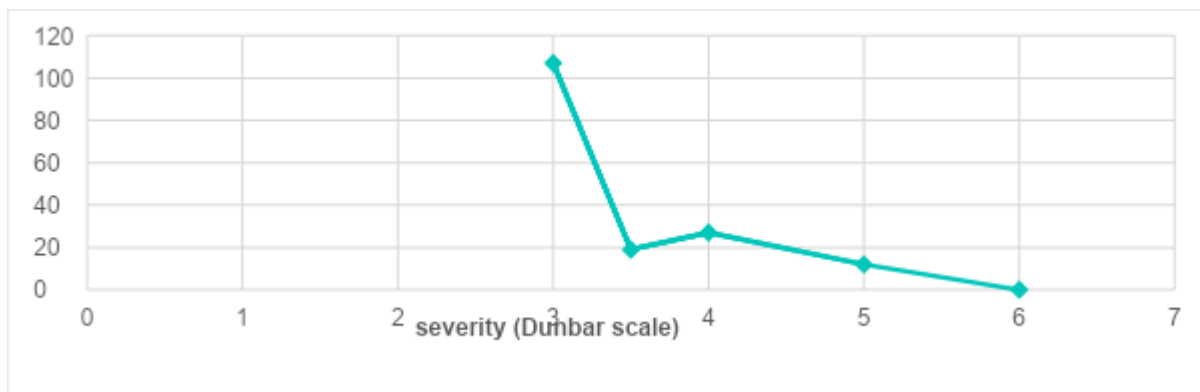
Figure 5: Recorded dog bite/threat rates 2012-21



(source: City data, 2023) [note: dog breed categories of the same name were combined to generate this data]

In considering the general profile of dog aggression incidents, the 165 recorded bites in 2021 (as the most recent complete year data available) were analysed further. Figure 6 presents the severity of the bites, almost two thirds of bites were registered level 3 (i.e. single bite, skin punctured) on the Dunbar Scale, with a significant decline in rates of more severe incidents (see Appendix 3 for further information on the levels of the Dunbar Scale). Level 1 & 2 incidents are reflected in the dog chase/threat data, above, which generally show slightly higher incident rates than level 3 (e.g. 170 in 2021). The data also records bites to other animals (127 in 2021) and rates these according to the Dunbar Scale.

Figure 6: Number of dog bites on persons in 2021 by severity rating



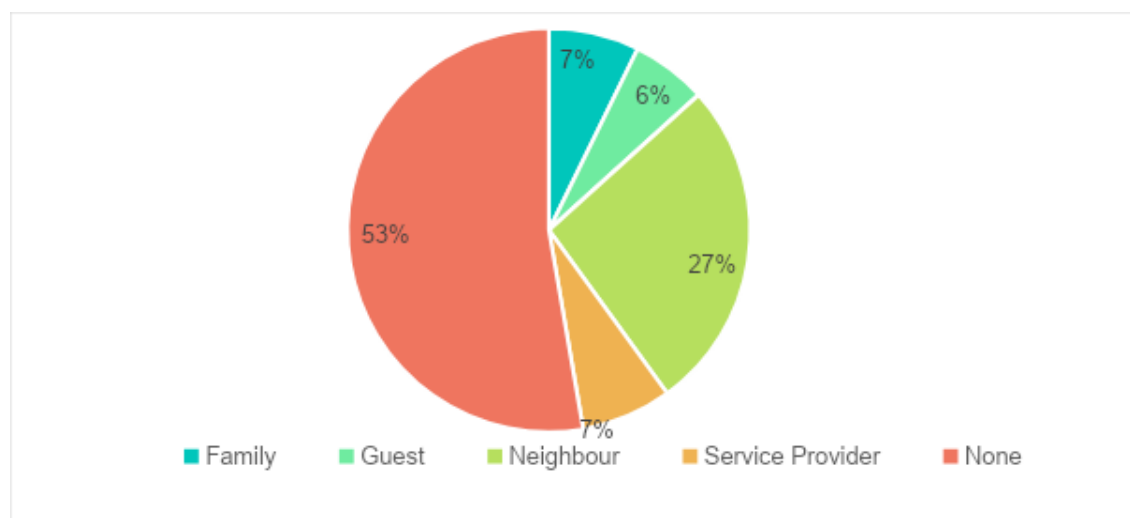
(source: City data, 2023)

Most recorded dog bites occurred in public (62%), with few (4%) within the off-leash parks. Just over a third (34%) were on the dog owner's property. The rate of public/private incidents is inconsistent with most other dog bite data. This could be a result of different categories and definitions applied, and/ or that enforcement agents may be more likely to witness or be involved in public incidents. For example, the Government of Canada's (2012) evaluation of CHIRPP data (Canadian Hospitals Injury Reporting and Prevention Program which records hospital treatment of dog bite injuries) in 1996 found most injuries occurred at the victim's own home (34%) or other home (30%). With incidents on the road making up 9% and park incidents 4%. The low number of bites in off-leash parks is notable and may indicate higher compliance with dog control regulations in these spaces. That said, 17% of bites to other animals occurred in these parks in 2021.

The offending dog was unknown to over half of human victims, with neighbours making up over a quarter of incidents (Figure 7). Family members were injured in 7% of cases. At the time of the bite, 19% of dogs were not under the control of a

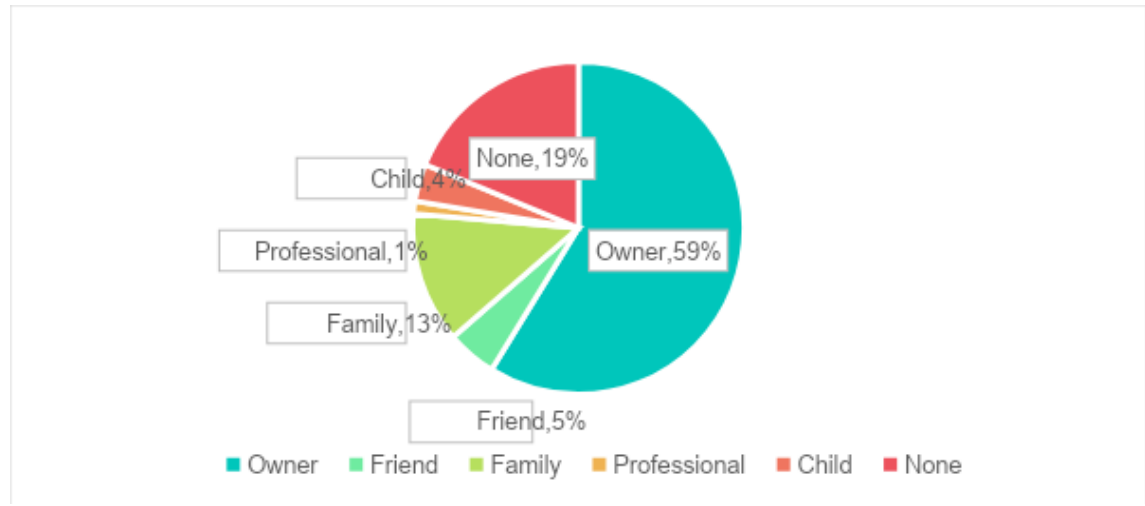
guardian (Figure 8). Almost three quarters of incidents occurred while the owner or family member was controlling the dog. The dog was in the care of a child in 3% of cases. Over half of the dogs were owned by their guardian for up to two years, which may reflect the increase in problematic dog behaviour associated with the rise in the puppy trade noted by some interviewees.

Figure 7: Percent of dog bites on persons by relationship of victim to dog in 2021



(source: City data, 2023)

Figure 8: Percent of dog bites on persons by those responsible for the dog at the time of the bite in 2021

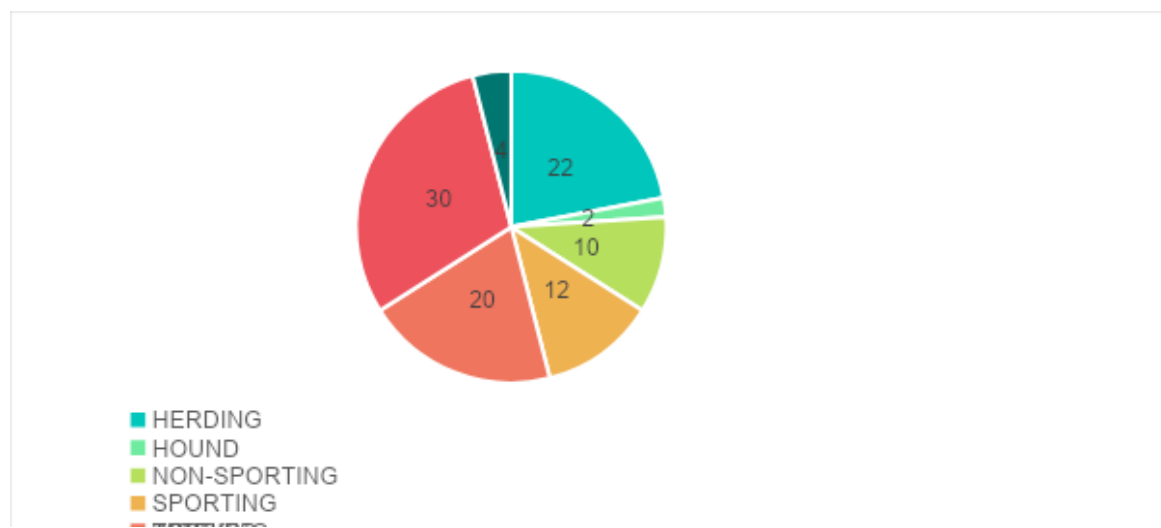


(source: City data, 2023)

Further information was provided on the offending dogs. Figure 9 provides an overview of bites recorded for each breed group. It evidences that dogs from all breed groups are capable of biting. Working dogs (e.g. rottweiler, husky, mastiff)

made up 30% (n=37) of the offending dogs, followed by herding dogs (22%, e.g. border collie, German shepherd) and terriers (20%, e.g. pit bull, akita). The popularity of breed groups will impact the number of incidents in that population. Likewise, it is important to note that the bite rates of breeds in each group vary considerably.

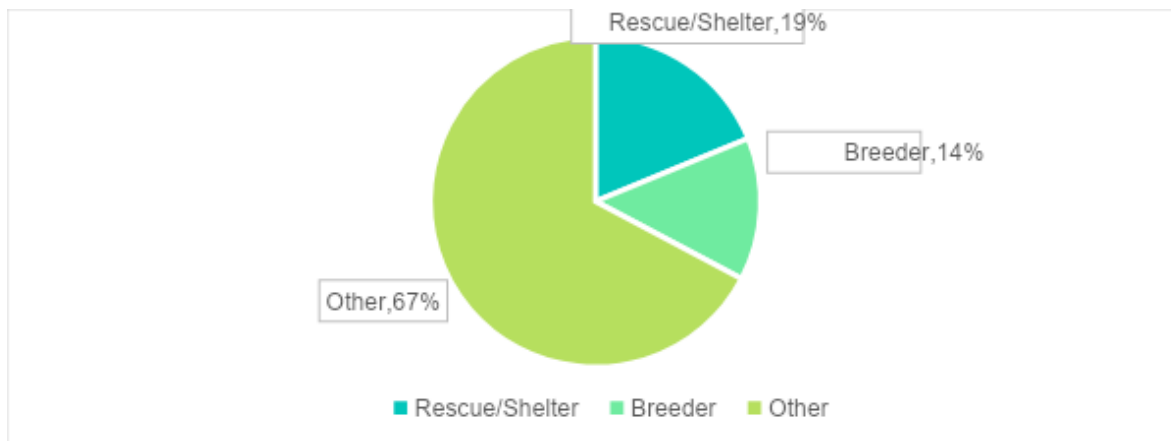
Figure 9: Percent of breed groups involved in dog bites on persons in 2021



(source: City data, 2023)

The gender of the offending dogs is consistent with other dog bite studies, whereby male dogs were recorded in 106 cases. However, the highest rate of bites occurred with neutered male dogs (39%) and the least number with female spayed dogs (14%). Entire male dogs were more commonly identified in other dog bite studies, which has given rise to the promotion of spay/neuter programmes and reduced fees for these dogs in Calgary and elsewhere. This figure may reflect a high uptake of this programme in Calgary, whereby, the neutered dog population is greater than that of entire males. Most (62%) of the offending dogs were compliant with the licensing regulations. Over a quarter (28%) were unlicensed, and 3% were from outside the area. While it is not possible to determine if the unlicensed number is higher than that in the general community, this figure may indicate owners of dogs involved in bite incidents are more likely to be noncompliant with Bylaw requirements. The origin of dogs was also recorded, 19% were rescued or from shelters, 14% from breeders and two thirds were acquired elsewhere (Figure 10).

Figure 10: Percent of dog bites on persons in 2021 by dog's origin



(source: City data, 2023)

The dog bite data demonstrates there are multiple factors which characterise dog bite incidents in Calgary. The centralised recording practices and granular dog bite data enable regulators to consider preventative measures which target key factors. For example, the data on bites to other animals and non-bite incidents on humans are important to capture, as dog on dog bites are commonly associated with bites to humans, and chase/threat incidents may provide an opportunity to prevent problematic behaviour escalating to biting. Further detailed analysis of City data between 2012-17 is provided by Caffrey et al. (2019).

## 7.2 The Responsible Dog Ownership Bylaw

### Licensing

Calgary is noted for high dog licensing compliance, which is a mandatory requirement for all dog owners under the Bylaw:

We strongly believe that having your animals licenced creates a safer environment. It helps us reunite lost animals with their owner, allows us to connect with licensees and provide education and information (C1).

Licences start at \$42 Canadian dollars (annually) and increase in increments, dependent on the neuter/spay status of the dog and its behaviour. For example, dogs designated as nuisance or vicious (see below) require a higher licensing fee to support the additional enforcement requirements and risks. Licenses can also be purchased biannually. City interviewees viewed licensing as a public good: “not just about caring for your own pet, it's about caring for the pet population in the city of Calgary, and it allows us to do a lot of good work” (C1).

This 'good work' includes looking after less fortunate dogs (through the Shelter and adoption service) and humans (through schemes for low-income households). Licensing compliance is incentivised as 'value for money' by providing 'a free ride home' and high return rates for 'at large' animals, subsidised neutering, and discounted rates through a 'responsible ownership card'. For example, one interviewee commented,

They created this really cool incentive model where they had a responsible pet ownership card...where they were like, 'hey, you spent X many dollars on licencing your pets, but now you're going to save this money (c2).

Academic interviewees noted in their review of the approach, "what we found to be a distinctive feature of the model was this traceability" due to the licensing approach and high compliance (C4). They noted the efficiency and accuracy of officers in holding problematic dogs and their owners accountable by searching their licensing database using basic information such as the dog breed, size and colour and location of the incident. This also helps to identify and respond to "frequent flyers", that is, dogs who had regular contact with enforcement.

Despite this, respondents to the Bylaw review (2020) largely viewed licensing as 'another tax'. City interviewees noted a decrease in licensing compliance and highlighted their intension to reverse this through education and positive messaging to ensure the public understood the value of licensing:

But our goal is to drive the licence numbers and we need to start doing a better job. That's step one, when we send out those renewals. Now it's a much brighter, happier, warning letter. We have a campaign; it's called lost families and it's a dog putting up posters of the lost families on trees (C1).

### Dog number limitations

The Bylaw review now requires limits on the number of dogs per household. This is a common feature in other municipal bylaws (usually up to three). By setting a limit on household dogs the bylaw provides a further tool for tackling hoarding and 'backyard' breeding, and edges towards a strategy to respond to safety concerns over the impact of 'pack mentality' in dog aggression (see below). A limit of six dogs also applies to dog walkers in public without a permit. However, as one participant noted on the household limit, "they've made it a six dog and six cat limit, which, is that even really a limit? I don't know" (C6).

## Barriers & Restrictions

Restricting the areas and way dogs engage in public spaces is a notable feature of the bylaw. Compliance with designated on-leash and off-leash areas is fundamental to keeping dogs under control. Off-leashed areas include fenced and non-fenced parks of various sizes in which dogs can be off-lead.

We're lucky in Calgary, I don't know if you've ever been here, but there's huge open natural spaces big as Hyde Park, if you like. And there is a fence all the way around it, but it's a huge expanse. And then you have these inner parks that are a bit smaller, quite a bit smaller, but still, they're not fully enclosed square spaces where dogs are just running around. (C8).

Outside these specified areas, dogs are not permitted off lead. Dogs cannot enter public spaces where there may be inappropriate engagement with humans (such as schools or playing fields). They must be always under adult supervision, meaning it is not permitted to tie them up outside buildings or leave unsupervised in off-leash parks. Interviewees, like bylaw review respondents, held opposing views on the value and appropriateness of these off-leash areas, with many choosing not to exercise their dogs there:

the wrong people take the wrong dogs to the dog park and ruin it for everybody (C6)

I'll go to the dog park. I am not a huge fan of dog parks because of the fact that it's a free-for-all (C7)

Despite the city dog bite data showing few dog-on-human bites in off-leash spaces, they were deemed problematic for various reasons. 'Reactive' dogs need space and engagement on their own terms with people and dogs. One reactive dog owner explained they were unable to go to off-leash parks due to other dogs not being under control and approaching their dog: "So yeah, it's very minimal when you can't actually do off-leash unless at a friend's home or we rent a facility or a space [\$45-50 per hour]". Their dog spends most of their public life on a lead, which is unlikely to meet their physical and mental health needs. An NGO interviewee argued,

certainly those people that have aggressive, reactive dogs are at a disadvantage and there's less availability of enclosed parks that might be better for those dogs. We have, actually, one on our property that's fenced that I think just naturally we've brought in the reactive community to utilise, so that they're not having to deal with other dogs, which is responsible (C6).

Off-leash spaces were identified as possibly contributing to inequality and unfairness, whereby, not all areas in the city had equal access to large open off-leash spaces. Furthermore, one interviewee observed the possible limitations for older residents and their dogs who may not be able to access these spaces. Further concerns were raised over multiuse sites, which required cyclists and dog walkers to share public spaces.

Defining dangerous dogs

The Bylaw clarifies how Calgary defines and responds to dangerous dogs, which it terms 'nuisance' or 'vicious' dogs. There are three notable features of this approach: i) the focus on deed rather than breed, ii) dangerousness assessment, and iii) the response to reactive and vicious dogs. As detailed in section 4, the focus on deed rather than breed is not unique to Calgary, although Calgary was identified by interviewees to have influenced the repeal of BSL in other Canadian municipalities, such as Montreal and Edmonton. The Bylaw review asked respondents to consider BSL as a possible enforcement tool. A City employee explained,

I thought it would be irresponsible for us to do this review and not ask the question as to whether Calgarians would support a breed specific legislation or not ... I knew it was gonna be controversial. I don't think anybody could have expected the blowback that we got from the public (C1).

The divisive nature of BSL was apparent in public comments to the review. Rather than a ban, the review proposed special licensing, muzzling in public, increased insurance requirements and restricting the number of these breeds per household. Another City employee commented that the Bylaw "is always a mix of best practice and public palatability...and Calgary very vehemently said hell no" (C5). That said, one interviewee noted that by allowing housing societies to restrict dogs based on their size, they were employing an approach similar to BSL:

based on unsubstantiated views that, you know, perhaps large dogs cause more damage or are louder or, you know, that other residents would be more fearful (C4).

All interviewees commented on the effectiveness of BSL and the common points for debate among city employees, professionals, and academics. The argument for adopting BSL was driven by those who had "personal traumatic experiences" of being attacked by pit bulls and the apparent capacity of these dog types to cause more severe injury. Linked to this, is the concern that certain owners may intend to



use them as a 'weapon' and the ownership of multiple dogs of this type may escalate an incident of aggression through a "pack mentality"<sup>10</sup>.

In the absence of strong evidence that BSL is effective, interviewees argued on balance this approach was problematic, unfair, and influenced by media stereotypes of certain breeds (discussed further below). Comments on the problems with BSL included, it was unsuccessful in other locations (e.g. Edmonton), in part due to the complexities of enforcing it, and inaccuracy and difficulty in breed identification, even amongst experienced officers. It would also reduce compliance, as owners of these dogs would not licence their dogs and would 'flee' incidents, which would impede the enforcement response. Linked to this, was the belief that BSL marginalised certain people, who the authorities would not be able to reach (for education, etc.). It resulted in inequalities, whereby a significant cost was paid by responsible owners of these dogs (and their dogs) due to a few irresponsible owners. It was also argued, this is counterproductive to peaceful inhabitation of different species in public spaces, for which the Calgary Model is celebrated. Both the public consultation and interviews demonstrates there is little public appetite for this approach, as owners are encouraged and supported in managing various risks, rather than improbably removing all risks. Linked to this is the expectation, evidenced in breed ban locations, that as one problem breed is removed another will take its place, and removing breeds will create a black market among certain dog owners.

### Assessing dangerousness and risk

Dogs who are involved in an aggressive scenario may be designated as nuisance or vicious dogs. The Dunbar Scale provides Bylaw officers guidance on how to assess bite and injury severity and the most appropriate action to take. For example, one interviewee explained:

So, the Dunbar scale is really helpful, especially in court, to demonstrate the severity of a bite...it also includes these near misses, not just punctures. So, there's a lot of value. And in some of the court cases I've observed, I think sort of operationalizing or quantifying bites using that scale has actually been really helpful (C2).

When an incident occurs, an officer can issue a notice to contain the dog, if the owner agrees to adhere to the conditions. The dog can return home with the owner under strict conditions, while the Bylaw officer reviews the case. Officers provide this

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<sup>10</sup> The concern over 'pack mentality' influencing an attack arose due to numerous incidents, including one recent fatality, involving multiple dogs. It is notable that multiple-dog incidents were also recently noted in dog-related human fatalities in the UK and Vienna (2023), which has given rise to discussions on how to prevent incidents which escalate due to 'pack mentality', such as household and walking limits.

information to the Chief Bylaw Officer who can designate the dog as vicious or nuisance. A letter is sent to the owner, who has two weeks to respond by accepting the designation or stating it does not apply. Mitigating circumstances (such as the animal was abused or teased) will be considered at this stage. If the rejected designation is accepted a letter is sent to the owner, alongside information on taking steps to reduce the probability of future incidents. If the designation is accepted a letter will be sent outlining the conditions that the dog owner must adhere to, including those in the Bylaw and additional conditions at the discretion of the Chief (based on contextual factors). The Chief Bylaw Officer responds to approximately 15 such cases a year, of which approximately five will choose to appeal the decision to a Tribunal Board. Should a destruction order be required, as the owner refuses to euthanise their dog, officers will apply to the Court under the federal Dangerous Dog Act.

Some interviewees criticised the ability of officers and trainers to assess dog behaviour, as it is very subjective and trainers are unregulated: "I would have some concerns about, caution against, who might be qualified to do that, and this is especially true, for example, when there's the potential for euthanasia" (C2). Consequently, only qualified trainers with a Certification Council for Professional Dog Trainers will assist in assessing dog behaviour and their details are provided to owners of designated 'nuisance' or 'vicious' dogs. The complexity of some cases was explained by one such trainer:

When I was younger and more naive, I used to think that every dog could be saved and every dog we could train it and find the right environment and do management. But the problem is that management fails. We are human and we're going to mess up. We're going to not have the gate up or whatever, not have the leash on properly or whatever it is, they're going to fail. So, if you have an actual dangerous dog sometimes, unfortunately behavioural euthanasia is a thing, but there's a lot of things to try before you get to that point (C7).

Importantly, the Dunbar Scale offers transparency, defends the actions of the city, and supports the decision to rehabilitate the dog. Similar assessments are required on shelter and Humane Society dogs prior to rehoming or the decision to euthanise the dog:

Yeah, we use the Dunbar scale as well. A Level 4 would be the hard no [for rehoming] for us, Level 4 and up, anything below Level 4 is a conversation

So just trying to help the community really. I guess if we're doing any dog control, that's it, we're trying to assist the public with getting the

safety concern out of their homes and unfortunately that does mean euthanasia in that [red] case. (C6).

It was clear from interviewees that euthanasia is a last resort for the City and Human Society alike, and this approach is largely supported by the community. For example, one interviewee said

I really like that we can have a dog who's deemed a vicious dog, but they don't automatically get put to sleep. They just have restrictions...And instead of just jumping right to 'you bit somebody or you killed a dog', now you have to die too'. (C7).

The acceptance of problematic dogs as part of the dog community was also clearly illustrated when interviewees spoke about 'reactive' dogs. These dogs are not necessarily nuisance or vicious but need to engage with people and dogs on their own terms (e.g. not to be approached uninvited). This suggests a high threshold for the management of risk, which is consistent with the Bylaw response and refusal to adopt breed ban/restrictions.

Interviewees provided their understanding of the main causes of dog bites in Calgary. These included:

- Irresponsible dog owners allowing their dogs off-lead in a leashed area, or out of control in unleashed areas.
- Public engagement with dogs as public property (lack of education among non-dog owners in how to engage with dogs).
- Inexperienced owners or owners unable to control problematic dog behaviours.
- Pack mentality among dogs, whereby multiple dogs escalate the potential for dangerous behaviours and more serious outcomes.
- A dog with a high prey drive for small animals, with medical or mental illness, including fear aggression.
- Abusive training techniques.
- Over-stimulation of dogs (for example, in off-leash areas) leading to unbalanced dog behaviour.
- Lack of understanding by owners and the public of reactive dogs' needs. An interesting example was provided by one interviewee, detailing the moment they realised they were in fact the irresponsible owner of a reactive dog:

Right. I was the asshole at the dog park with a dog that shouldn't have been there for a bit until I realised that I was, and then I stopped immediately. So, that was a tough pill to swallow, knowing that I made so many other people feel as wildly uncomfortable as I did, was kind of crummy. So, you just correct and move on and hopefully you know other people are going to do this (P1).

## 7.3 Governance Structure

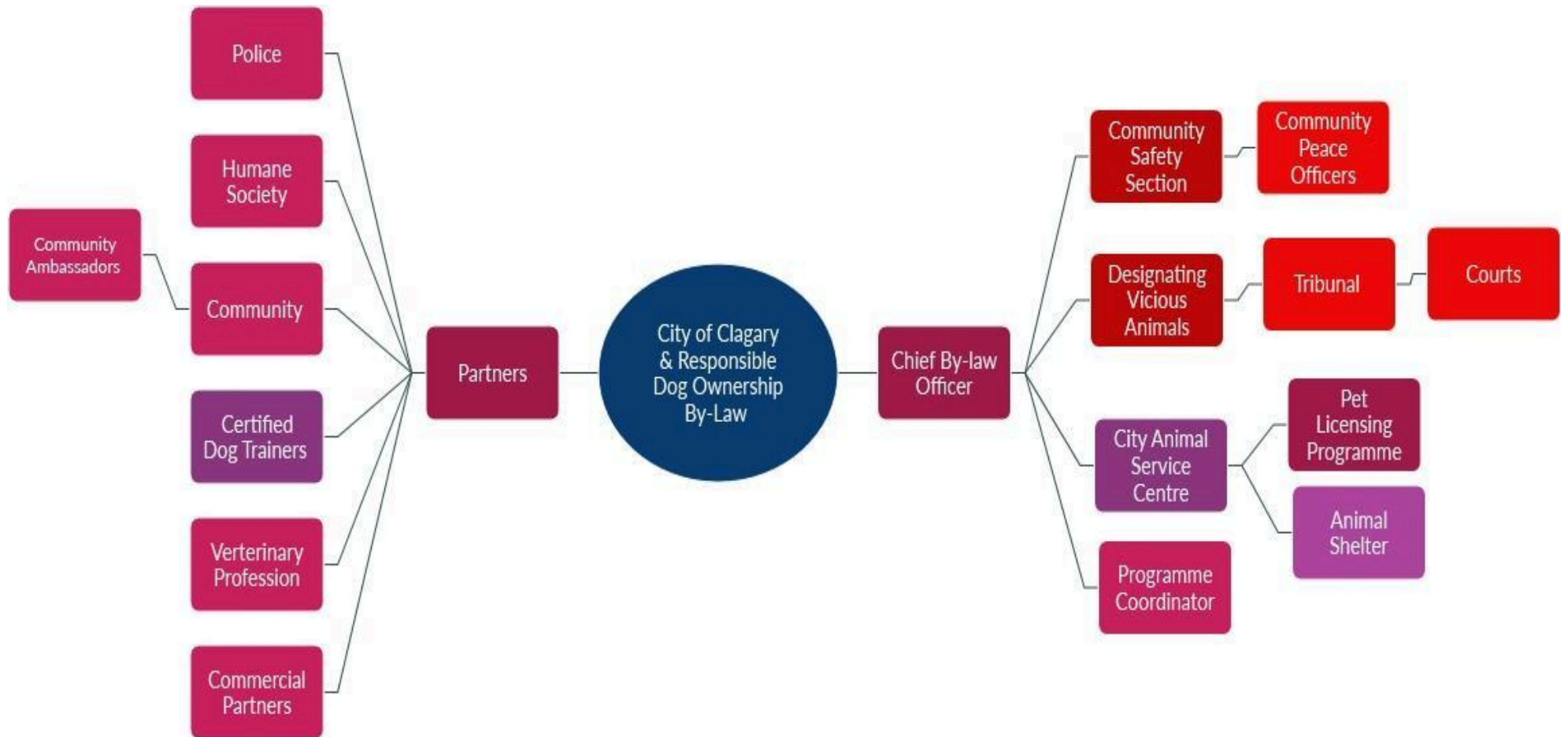
The Municipal Government Act empowers the City of Calgary to pass, regulate and enforce bylaws. As shown below in Figure 11, the Chief Bylaw Officer is responsible for overseeing the Responsible Dog Ownership Bylaw. There are three relevant sections within their portfolio: Community Safety, Animal Services and designating an animal as a vicious animal. The Chief Bylaw, also, importantly, makes a case to the Council for budget funding each four-year cycle. Recently, this budget was increased to almost \$10 million, compared to just over \$1 million in 2019 (C1 - see enhanced enforcement, and sustainability below). The role of the Chief Bylaw officer is integral to the approach, as participants noted, the previous Chief Bill Bruce was instrumental to incentivising compliance and balancing human and dog wellbeing.

Community Safety employ over 90 Bylaw enforcement and peace officers who are primarily responsible for enforcing the Bylaw. Officers respond to the Responsible Pet Ownership Bylaw and the Community Standards Bylaw, resulting in a much wider remit than dog control. Officers aim to encourage compliance with the Bylaw through educating dog owners, investigating complaints, responding to dog attacks and dogs 'at large' and enforcing licensing by checking compliance and issuing penalties. Evaluating the dangerousness of dogs is central to the Calgary approach to community safety. As detailed above, this is first addressed by Bylaw officers who assess the dog and compile information on the attack or incident. For serious attacks it is the role of the Chief Bylaw Officer to designate an animal as a vicious animal and determine the conditions of their licence. Should owners challenge the designation, since 2021, they may appeal to the Licencing Community Standards Appeal Board (see below).

Interagency collaboration was a noted feature in governance, whereby, peace officers may respond to cases which involve Bylaw, provincial statutes and federal code violations, and so, require the police, Humane Society and the fire department, for example, to jointly respond: "So, you know, maybe it's a barking complaint, but the barking complaint is because it's a breeding operation, that's involved in white collar [crime], or that's involved in dog fighting, you know" (C2). Law enforcement provide support to Bylaw officers for serious incidents involving dogs, such as deploying a police helicopter to track 'at large' dangerous dogs.

Animal Welfare was originally envisioned in the Calgary model as a caring environment for animals through collaboration with animal interest groups (CatandBirds, 2015). A clear distinction exists in Calgary between bylaw enforcement (Community Safety) and animal welfare enforcement (Humane Society). Bylaw officers are not required to respond to animal cruelty offences (they can enforce the Animal Protection Act but don't have the mandate for it). Nonetheless, the Humane Society collaborates with Bylaw officers by providing training to frontline officers to enable them to identify and report animal abuse issues, by accepting and treating dogs needing rehoming, by promoting responsible dog ownership and through collaborative enforcement activities. According to an interviewee "if the Calgary model and bylaw is still the gold standard, I would venture to say that the animal protection model in Calgary is the same" (C6). Both the Bylaw officers and Animal Services Centre directly and indirectly support the education of responsible dog ownership. To extend the reach of their educational approach, a new Programme Coordinator role was introduced in 2023, to develop programming and education focused on reducing dog bites.

Figure SEQ Figure \\* ARABIC 11: City of Calgary Responsible Dog Ownership By-Law Governance Structure



The City Animal Services Centre are responsible for administering the pet licensing programme and running the shelter for impounded 'stray' dogs, including rehoming unclaimed and relinquished dogs. Interviewees noted the importance of the Animal Services partnership with key animal NGOs (Humane Society and AARCS), who facilitate the adoption of shelter animals. The Animal Services Centre house lost and relinquished animals and provide veterinary services as part of the 'fair entry programme'. These services result in over 1,200 surgeries annually, including no-cost neutering for low-income families, orthopaedic and dental surgeries. There are two animal behaviour coordinators available to assess dogs for adoption and rehabilitation. Their role is key to achieving the stated Calgary Model goal of 'No homeless pets', by stopping the euthanasia of healthy adoptable animals and with behavioural modification and clinic and veterinary skills to help dogs to be adopted (CatsandBirds, 2015). Although the facilities were described as "probably state-of-the-art 23 years ago" and in need of modernisation, other interviewees recognised it was fit for purpose and considered the wellbeing of the dogs. Calgary, like many other locations have experienced a surge in 'COVID dogs" and an increase in "dogs with behavioural issues" relinquished to the shelter, which negatively impacts facility and staff capacity, and has put: "a lot of stress on our staff and on our facility. I heard just the other day we had 180 animals in our shelter, which is, that's at the upper limits of what we can hold in terms of our capacity" (C1).

Other specialist and nonspecialist stakeholders support the Bylaws. The Licencing Community Standards Appeal Board (Tribunal Board) have a key role in both community safety and animal welfare, when responding to dangerous dogs. When the Chief Bylaw Officer designates a dog as a vicious animal, since 2021, owners may challenge the designation by appealing to this board. Tribunal board members have the appropriate skill set (e.g. animal experts such as veterinarians, dog trainers and those with expertise in dog behaviour) to review these cases. The Tribunal can uphold, amend, or cancel the Chief's decision. Should there be cause for further appeal, the case can go to the Court of King's Bench. The Tribunal system aimed to add transparency and fairness to the decision process, as it included "folks that have been vetted for this specific purpose" (C5). This positive move was supported by other interviewees:

I think having multiple people to have their input is much better than just a single person being able to make that kind of decision, because this is somebody's family member (C7).

to me it just made sense because of the delays within the courthouse. We wanted to expedite these. We can't have animals in our facility for a year in a kennel. I mean, it's not good from an animal welfare perspective even though we take them for walks and have some enrichment (C1).

Owners with nuisance and vicious dogs are referred to certified dog trainers as part of their licensing or designation requirements, making professionals key to the governance approach. In addition to the mandatory reporting of suspected cases of animal cruelty, for example, vet clinics will hold stray dogs until Bylaw officers can pick them up and provide subsidised medical treatments for low-income dog owners.

In addition to these key statutory and non-statutory agencies and professionals, the governance model is supported by business partners and the public. Commercial partners have previously supported licensing incentives by providing rewards and reducing cost for animal-related services. As part of the Off-Lesh Ambassador programme, the public can apply and train to become Ambassadors. Ambassadors support By-law officers by engaging the public, educating dog owners, and modelling responsible dog ownership. The public have a significant influence on governance, arguably evidenced by the response to the public consultation review of the Bylaws:

110,000 people that took our survey, that we put out in a city of 1.4 million people, which, by my understanding, smashed all the previous public engagement standards or records (C1, City of Calgary employee).

The challenges and opportunities of collaboration is further explored below in compliance, community, and cooperation. Despite the limitations and challenges of multi-agency work, collaboration is at the heart of the Calgary approach to responsible dog ownership. Statutory agencies are dependent on other agencies and people to deliver an effective approach.

## 7.4 Enhanced Enforcement Approach

### Community and Multi-agency Engagement

Two interviewees who observed frontline offers commented on the multifaceted and interagency nature of officer's roles, and how impressive the infrastructure (e.g.



car equipment and data systems) and positive community engagement was. They noted that although Bylaw officers have not traditionally been “taken seriously” or “the most respected”, their role was as risky and complex as other law enforcement officers (C2). Although Bylaw officers were viewed as having an important role in public safety and their engagement with the public markedly positive, this did not prevent conflict with some members of the community. It was noted that public engagement is ‘brutally difficult’ due to the competing interests of the community. The question of officer safety was at the forefront of many interviews, due to the murder of a peace officer responding to a dog control issue, and incidents of aggression by members of the public towards officers. One interviewee explained that a bylaw call may originate “from a barking complaint but oftentimes these issues are so interrelated with other types of criminal activity or concerns around human violence, family violence, IPV” (C2). Consequently, Bylaw officer collaboration with law enforcement officers, including their data systems, was seen as crucial to officer safety.

Three notable limitations in the Bylaw enforcement response were underlined by interviewees: formal multi-agency partnerships, prioritisation, and reactive enforcement. Although multiagency collaboration is patent, it is not always formalised and lacked ‘standard operating procedures. Consequently, as core people left positions, key relationships and collaboration was lost. The approach in Edmonton municipality was recommended:

The Edmonton police is the first in Canada, actually, has formalised an animal abuse investigation unit through Edmonton police in partnership with these other agencies. So, in partnership with bylaw, and the Humane Society as well (C2).

In moving from animal control officers to ‘generalist’ peace officers with a much wider remit, some interviewees suggested this had unhelpfully “watered down” the expertise, network and focus of officers. Commonly social disorder offences (e.g. homelessness) were prioritised over dog control offences, meaning officers mainly focus on the most serious incidents involving dogs:

any dog incident that affects public safety, it becomes number one... we’re on police radio channels and we’re monitored by the police dispatchers. So, they’re looking for the closest vehicle to that incident and you drop everything and go. So, in terms of us being able to respond to somebody who’s being attacked, there’s no higher priority that we have (C1)

Consequently, many of the interviewees commented on the lack of enforcement of unlicensed dogs, unleashed dogs (in on-leash areas) and nuisance offences (e.g.

barking, dog waste). The limited enforcement of these issues was similarly criticised in the public response to the bylaw review. While this may seem at odds with the Calgary model's focus on compliance, the approach presented by Bill Bruce envisioned 95 percent compliance through education, awareness, and fairness, with enforcement being the last (5 percent) step (CatandBirds, 2015). This is consistent with the current programme strategy, as noted below, which involves additional focus on enforcement prevention and intervention activities. Likewise, the programme intends to address resource limitations, also noted by interviewees:

“I know it's hard because everywhere is just short-staffed for everything and we just don't have enough people for everything that needs to be done” (C7)

“And, so we're much faster in terms of our response, but because we're spread so thin, it leaves less time to do licencing checks or patrols in off-leash parks”(C1).

The enforcement approach, nonetheless, provides a suitable deterrent value as non-compliance is costly and increases with repeat offences (see Appendix 4).

### IT Infrastructure

A modernised IT infrastructure was argued to be central to improving the enforcement approach in Calgary. Currently, there are two systems – ALPO and Chameleon - specifically used in the enforcement of dog control and one general EMS system. ALPO is the public-facing system for dog licensing, Chameleon captures dog-related incidents. ALPO was identified by interviewees as accessible for those required to license their dogs (similar systems were argued to be barriers to compliance in other municipalities such as Edmonton due to the dated platform – C3). However, both ALPO and Chameleon lack ‘integration’ and ‘a business intelligence component’ (C1) believed necessary for safe, efficient, and effective enforcement, and community compliance. Information and data have been critical to the success of the Calgary programme, resulting in a \$10 million budget to, in part, fund modernisation. This modernisation will include the development of an integrated bespoke system, with greater data and analysis capacity. The diffuse benefits outlined were:

- reduced time and resources burden on city administration, including the delivery of incentives with businesses and programme marketing to the community to enhance compliance and education.
- making officers more efficient: “it takes us 26 minutes for every call that we go to. And I would say 70% of that is officers handwriting warning notices, putting in data entry, waiting for the screen to switch, this little wheel of death that spins around...if we can cut that in half, we've essentially increased our

workforce significantly" (C1). "So, for their day-to-day jobs, it's a very practical system. If you want to have a much more analytical use of the system, then it becomes very difficult because it's not data that is very searchable, so you'll have to try and find keywords and I'm not even sure it's possible given the system" (C3).

- enhancing officer safety through better data sharing and integration with the triage system (e.g. police, fire service): One of the officers went to a residence for a barking complaint...very standard. Showed up, did his normal, you know, discussion, investigation and then was leaving the property and actually got a call from police jurisdiction...[saying] what on Earth are you are you doing? Do you have any idea that we're actively surveillancing that residence for...guns, drugs, gang-related, whatever, human trafficking" (C3).
- enhancing community wellbeing and safety through, for example, the use of facial recognition, whereby images of dogs can be input into the system to identify lost dogs, enable officers to identify stray or offending dogs. Likewise, the ability to send push notifications to communities where dogs have been found or to alter the community to a dangerous dog at large.
- enhancing animal and human welfare by reuniting more dogs with owners and holding better health records on dogs in their facility, including behavioural warnings.
- accessing a real time dashboard on all animal-related issues to support intelligence-led deployment and preventative enforcement, and enhance data analysis by identify trends or emerging issues: "Just last year I asked our corporate analytics team, can you provide me with the maps of the most problematic off-leash parks? So... we can send peace officers to those parks at certain times. And they were like, we'll get back to you in four weeks. Well, that doesn't help. We're in the middle of the summer" (C1).
- removing barriers to licensing compliance and responsible dog ownership by developing tiered licensing options to provide low-income families and senior citizens with discounted rates. For example, those wanting to neuter their dog using the subsidised programme cannot do so if they cannot afford a license.
- enhancing proactive intervention by using time freed up by process improvement and modernization to "go meet people and educate them, whether it's in parks or schools or wherever. So that's the vision, is to do more proactive work so" (C1).

## 7.5 Sustainability & Effectiveness

## Sustainability

The original vision of the Calgary Model was to be “self-supporting without tax dollars” (CatsandDogs, 2015). Apart from funding Peach Officers, animal (e.g. dog and cat) licensing fees are ring-fenced to generate the funding necessary to support all animal services operations - licensing, incentives and animal shelters. Licensing revenue generates approximately \$5.7 million each year, covering the \$4.5 million in operation costs. The surplus \$1.2 million offsets the Bylaw enforcement costs (approximately £4 million), resulting in around \$3 million in public taxes to deliver the whole Programme. Licensing fees must be balanced against the expectations and needs of the community, by considering economic factors, such as inflation and affordability; “if you set this [fee] too high, you see your licence numbers just drop” (S1). Financial stability is thereby closely linked to public support and compliance. It is also dependent on political support and City Council eagerness to finance expansion and modernisation. According to one interviewee, initially, resources were increased in response to the founder of the Calgary model highlighting its achievements. This support has continued with the recent \$10 million modernisation fund.

Modernisation of the IT infrastructure, including the enforcement and licensing systems is central to enhancing sustainability and reducing the burden on the city administration:

we need more time and that time comes from process improvement and modernization and use of data to have a more intelligence-lead deployment model... So, if we can cut that [response time] in half, we've essentially increased our workforce significantly, right?... It's gonna allow us to move from a reactive enforcement model to more proactive and more preventative measures, which is good. And then it's also gonna increase value for citizens as well (C1).

Strong interagency collaboration supports programme sustainability. Partnerships with key stakeholders has reduced and spread the burden and costs to the city. For example, in rehoming and veterinary care, and providing opportunities to deliver education and awareness. However, some interviewees questioned the sustainability of these partnerships due to their informal nature. While there is an established agreement on provisions for shelter dogs with the Humane Society, the lack of standard operating procedures identified above' creates vulnerabilities. Opportunities to capitalise and merge expertise among specialist staff, such as the specialist force in Edmonton was argued to contribute to programme sustainability.

## Effectiveness

The Chief Bylaw Officer in 2015 indicated the effectiveness of the approach was measured on the following performance indicators: reduced impound and euthanasia rates, aggressive animal incidents and bylaw infractions charged. Concurrently, the programme expected increased return to owner rates, percent of animals licensed and financial buoyancy. He reported on 2010 City data, an approximate 90% licensing compliance rate, with a slight increase (from 2010-2022 of 4330-4576) in impounded dogs, of which 87% were returned to owners (36% directly driven home), 8% adopted and 5% euthanised. Aggressive dog incidents had increased slightly from 2010-2011, alongside a more significant rise in the dog population. As reported, above, the dog bite date provided by the City on recorded incidents in dog bites to a person and to an animal has reduced overall between 2012 and 2022. Reported dog impound rates have reduced significantly in this period to 1,214 dogs in 2022 (Calgary City, 2024). 63 percent of these dogs were returned to their owners, 8 percent adopted and 4.6 percent euthanised. These rates are notable at a time of significant fluctuations in the scale and nature of the dog population, and additional environmental and social stressors.

The question of effectiveness is both complex and subjective. Two City interviewees highlighted the complexities of reviewing the Calgary approach:

So, I'm sure you've run into this before where finding good data can be very tricky. Right? And so, when we were looking at an evaluation in terms of what needed to be changed, we looked at a lot of different inputs because when we looked, we had the numbers of complaints, and we had the outcomes of those investigations and that sort of thing. But, you know, we couldn't always pull the data in ways that we thought would help for different sort of questions (C5).

Yes, our licencing while, for whatever reason, everybody thinks that we're the gold standard. I mean, there's so many animals that aren't licenced and we should acknowledge that we might be doing better in comparison with other cities. But I think we still have a long ways to go (C1).

The Bylaw review engaged with key stakeholder, including targeting 400 randomly chosen households, and conducting a "pretty thorough" review of 33 different municipalities to identify alternative approaches and challenges. Without a formal evaluation of the updated Bylaw available, the city interviewee concluded: "I've heard a lot of positive feedback on some of the changes we've made" (C5).

In support of this, there was a consensus amongst interviewees that the Calgary approach is effective at reducing dog bites and public safety. However, some

directed this to effectiveness prior to the 2020 review, suggesting the current Bylaw was not necessarily an improved response. The success highlighted focused on responsible dog ownership, bite reduction, compliance and balancing interspecies needs:

I mean, we definitely had the, I guess, marketable model in the early 2000s, mid 2000s, under Bill Bruce. It was quite celebrated internationally and it really was pretty simplistic. It was putting the onus back on the owners rather than the dogs themselves, because ultimately the owners are responsible for the behaviour of their animals and for controlling their own animals (C6).

I think historically, yes. We did have some concerns with some of the amendments to the bylaw that just took effect in January"... "Yeah, so absolutely the model can work. (C2).

there is a little bit of evidence ...they have been able to show a reduction in the number of dog bite incidents per capita following the implementation of their new policy. So that's the policy that he put in place that refuses breed specific legislation, while also promoting licencing ... But in any case, they argue that it is and I'm actually quite willing to think that it worked in terms of dog bite reduction... if you're asking me personally. Yeah, I think it worked quite well. (C3).

I do think that Calgary's model, in the iteration that I really was engaged with and understood, I do think it does a good job of balancing different people's needs. I think that you have high enough levels of compliance (C4).

## 7.6 Why it Works?

### Balance and Transparency

In considering why the Calgary approach to dog control is effective, balance and transparency is a repetitive theme. The approach recognises the complexities of responding to dog bites and irresponsible dog ownership and seeks to balance the needs of dogs and their owners with that of other human (e.g. the community, park users) and nonhuman (e.g. wildlife, domestic) animals. In doing so, it identifies the various types of stakeholders, including potential victims, their competing priorities, and diverse needs. Based on feedback from the community, the approach plans to deliver services that the community want, which provide value for money. Licensing revenue removes a significant financial burden from public funds and balances the

cost of dog services among dog owners and public taxes. This can only be achieved with high licensing compliance from dog owners, which presents a significant barrier for other Canadian municipalities. Compliance is achieved through a balance of prevention, intervention, and enforcement, with the enforcement response focusing on the 'few' who offend.

Transparency is provided through publicly available prevalence data collected on dog licensing and incidents. The limitations of which were readily acknowledged by City interviewees. The governance and processes in place are transparent, with opportunities for stakeholders and the community to inform both. For example, in concluding the Bylaw review, one City interviewee explained:

Yeah, we want to make sure all of our decisions are defensible, right? And as a government, we probably have to go a little above and beyond what some others [do]... It was really making sure that we were thorough in the review, that we were able to defend what those decisions were and why we didn't go a certain way. And I think that was really critical to actually getting legislation passed. (C5).

Consequently, the new Bylaw was described as "a mix of best practise and public palatability" (C5). While some interviewees acknowledged the balance was not yet found, especially with recent changes, there was general support for the approach and understanding of the associated difficulties. For example,

with community engaged research, it can be very difficult even with the best of intentions to create an equitable engagement opportunity. It just can be very difficult to give those who you know tend to typically have, you know, less status or be less empowered, opportunities to engage. And the city of Calgary, as we talked about in that paper, they have a very well-meaning engagement policy (C4).

Despite both the interviews and public consultation highlighting tensions exist – dog control is an emotive and divisive issue - there is evident support for what the approach seeks to, and has, achieved.

### Recognising the differing needs of the community

In providing a 'fair entry programme' and subsidised veterinary treatment through the licensing scheme, the needs of lower-economic dog owners are considered. The move to introduce reduced licensing rates for seniors and families on income assistance programmes also recognises the barriers economic factors can have in compliance. Similar consideration is evident in the requirements for nuisance and vicious dogs:

with a nuisance animal, you know, we might mandate training, but we want to make sure that that's sensitive to what's actually attainable, right? Because you get some problematic behaviours in the dog and you could be spending thousands of dollars and hundreds of hours trying to get that in, right? And there are some folks that that might not be feasible for, you know, time reasons, financial reasons, those sorts of things. So, that is sort of considered although sometimes hard decisions need to be made there for public safety (C5).

Socio-economic status is also important to consider in preventing dog bites, which is reported in some studies to be unevenly distributed by geography and socio-economic status: "I think in some of our work, we talk about this entanglement. I don't think we can separate issues around municipal bylaws with welfare issues and public health" (C2). This holistic thinking is, in part, evident in Calgary, resulting in academics arguing it can and should commit to developing a one health/one welfare model (Rault et al 2020; Rock et al. 2009).

#### Animal welfare within dog control

The original Calgary model sought to 'protect animals from people', 'create a humane animal management strategy' and a peaceful and respectful coexistence between humans and animals (CatsandBirds, 2015). Interviewees views differed on how effectively the Bylaw and approach supported good dog welfare, largely because welfare is not specifically within the remit of the Bylaw services or officers. Nonetheless, the goal of supporting animal welfare and the protection of humans evidently overlap and complement each other. This was evident in the Bylaw review whereby the Calgary Humane Society were invited to provide "a line-by-line review of it and put in recommendations of which half were adopted" (C6). Welfare is implicit in the language and intension of the Bylaw approach, suggesting the dog's wellbeing is an important consideration in community safety. In other respects, it is explicit, such as the emphasis on rehabilitation and restrictions rather than euthanasia for many dogs identified as vicious or dangerous (that is, for those dogs who can live a fulfilled safe life within the restrictions). The attention to nuisance and related issues, such as problematic dog breeding and acquisition, and stray and abandoned dogs also enhances dog welfare.

The use of public space was one area of conflict repeatedly reflected on. Due to the requirement to leash dogs in all public areas, except designated off-leash parks, the competing needs of park users was a key debate. In particular, the difficulty of providing a mutually respectful and accessible environment for owners of well-behaved dogs, reactive and dangerous dogs, cyclists, public fearful of dogs, the aging population, and those in underserved communities. There are clearly



limitations in the accessibility and desirability of off-leash public spaces for some dogs and owners, which does significantly impact dog welfare. Interviewees were generally supportive of the approach; however, they recognised improvements were required to ensure leashed and off-leash public areas could accommodate social and reactive dogs and members of the public. Effectively delivering this approach with animal welfare in mind, requires considerable infrastructure investment.

### Understanding and responding to dangerousness

The Bylaws and City practice demonstrate understanding for the complexities and nuance in dog aggression. This is evidenced in the use of a scale to determine levels of dangerousness and subsequent responses, which use destruction orders and euthanasia as a very last resort: "here on the Dunbar scale, here's what these dogs have done', right? And we want them to be able to live and have the best sort of life possible, but we need to keep the public safe" (C5). The individual assessment of dangerous dogs, include the circumstances surrounding the dog aggression and providing a tailored response. This approach does not shy away from the potential risk in allowing vicious and reactive dogs to engage in public, as one interviewee reasoned: "it's hard because there's feelings on both sides...somebody wants justice, but somebody else wants their dog to be able to live" (C7). They also confirmed that, in their experience, owners of designated dogs comply with the requirements as they recognise failure to do so is likely to endanger their dog and community, suggesting many owners can be trusted to manage the risk.

The tiered licensing system and mandatory insurance for vicious and dangerous dogs, and incremental rise in penalties for repeat and more serious offences, recognises the additional cost of balancing community safety when adopting this approach. Likewise, by recognising that dogs are individuals with differing boundary space requirements, rather than a 'common good' or commodity, it places a responsibility on both owners and the community for responsible dog engagement. The interviewees were clear that the acceptance of reactive dogs as part of a peaceful and respectful interspecies community was certainly not universal.

### Collaboration and partnership

The Calgary approach was originally established by bringing various partners to the table to work out a mutually effective response. The research has highlighted that multi-agency work is not straightforward, each agency has its own priorities and may be competing with their partners for resources. Difficulties were highlighted,

indicating the Calgary approach has not entirely navigated these waters. Nevertheless, the relationships within and between statutory and non-statutory agencies is central to the effectiveness of the response.

The changes to Bylaw enforcement, from specialist to generalist officers was questioned by interviewees, with most recognising, on balance, that there is merit in both. The need for a certain level of expertise was agreed:

I think you just sacrifice a little bit of the expertise in that one particular area. And if there is an area that you want that expertise, you know, I think it probably is in dealing with these potentially aggressive animals, if only for the officer's safety (C6).

Others recognised that the necessary expertise could be achieved if enough rigour was built into the system through effective partnerships with professionals. Thereby, engagement with the professional community (e.g. certified trainers to conduct aggression assessments, veterinarians as part of the Tribunal Board) has become even more crucial to effective dog control. Likewise, without the support of key NGOs the City would not be able to effectively provide their services to dogs, their owners and the community. One further desired collaboration, noted by academic interviewees keen to develop a one health model, was engagement with public health: "And I think it would be a missed opportunity to not engage public health because the research is lacking. The surveillance is lacking..." (C5).

Infrastructure supporting enforcement

Calgary City utilises two data systems to support the enforcement approach. Both of which will be updated to bespoke systems, to facilitate greater data collection on the licensed dog population and on dog-related incidents and offences. As demonstrated above, high public compliance with licensing bridges the notorious dog population and dog bite data gap evident in other locations. It provides vital information on the nature and prevalence of the dog population and owners. Concurrently, the City centralises and provides rich granular data on recorded dog owner offences. The new system will enhance data granularity, providing further information on the nuance and factors common to dog incidents.

The value of this data is evidenced herein, whereby incidents can be analysed by type of victim (human and nonhuman animal), dog breed, group and characteristics, owner characteristics and compliance with Bylaw regulations, and situational factors. Furthermore, the use of the Dunbar scale provides essential information on the shades of aggression, including lower-level incidents which may identify 'at risk' dogs. This scale is also applied to dog-on-dog incidents, which may

be helpful in preventing bites to humans. By linking these data systems, Bylaw enforcement is more effective, efficient, and certain (e.g. tracing owners, identifying unlicensed dogs, responding to aggressive dogs and repeat offenders). Whereby the Calgary approach emphasises willing compliance and incentives, the IT infrastructure provides an effective 'stick'. The goal of the modernised IT infrastructure and robust granular data collection is intelligence-led and preventative enforcement, resource management and compliance monitoring. Furthermore, the modernisation is intended to facilitate equitable and accessible services for the community, by further developing a tiered licensing options for low-income and vulnerable owners. This modernisation is only possible as the City prioritises dog control and dedicates appropriate resources.

### Compliance

Historically, the Calgary model has achieved high licencing compliance among the public. Although interviewees struggled to explain why compliance is high, it was recognised as fundamental to the success of the Calgary approach: "it doesn't matter if there's an actual bylaw, it depends on whether there's community buy-in" (C2). Licensing has not only provided essential financial support, but critically, it has also facilitated robust data and traceability, which is central to effective enforcement. Furthermore, compliance with licensing is believed to enhance compliance with the Bylaws, as licensing provides a point of contact for education, training and enforcement messaging.

Barriers and facilitators to compliance were identified by interviewees. The recent reduction in licensed dogs was linked to socio-economic stress resulting in noncompliance, the public not understanding the true value and benefits of licensing, and a lack of resources for proactive enforcement. City interviewees shared their intension to respond to these barriers by making licensing affordable for those in need (e.g. tiered licensing fees), changing the messaging on the value of licensing to the public (e.g. emphasising personal and community benefits) and improving the enforcement infrastructure through modernisation (e.g. bespoke databases and systems), to create resources for proactive enforcement.

Despite these barriers, licensing and Bylaw compliance in Calgary remains high when compared to other Canadian municipalities and dog licensing elsewhere. Academic participants explained this was believed to be due to the social acceptability of licensing among Calgarians, the lower licensing fees (compared to other municipalities) and the convenience of the licensing system. The accessibility of information on the cost, benefits and use of licensing revenue was also noted. The general affluence of residents was also pointed to as a possible factor. More

generally, compliance with the Bylaws (e.g. leashing) was believed to be stimulated by social (peer) pressure at the neighbourhood level. The role of community associations and groups (online and in the neighbourhood) were described as “self-governing” within the broader city structure. Non-local participants described it as a cultural norm and expectation accepted by most dog owners. This norm is capitalised in the use of park Ambassadors, who act as role models and informally support the enforcement approach. When asked how they felt about licensing their dog, one member of the public stated:

Neutral, you know, you have a fee to pay to register your dog. You can do it in annual or biannual. So, I just always do two years at a time. Put the tag on her and that's it. I don't see it as a hindrance, I don't think it's that expensive. On top of that, she's microchipped and all of her shots are always up to date and stuff. Yeah, I don't feel any of that stuff is an annoyance or anything. It's just part of how it is, as simple as buying food, right? (P1).

Establishing a community of care was set out in the original vision of the Calgary model as ‘creating willing agents’. The overall message from the City, which was reflected in the interviews, is that licensing is a ‘public good’ which can facilitate the care of all dogs and safety of humans. The tools said to facilitate this include: creating a government department that citizens want to work with; guiding the community with information and education to make better choices; ensuring citizens know why the rules are in place and how they benefit them, and providing opportunities for citizens to be heard. Where this does not work, there is a perception of zero-tolerance and harsh penalties for offenders. In crime prevention, situational factors are known to influence offenders’ intentions to commit crime and perceptions of risk. Through the lens of Broken Windows Theory, by addressing lower levels of irresponsible dog ownership, a message is sent to the community that this is an area that cares. Thereby, problematic behaviour is identified, and compliance sought before it escalates to more serious harms. Although most participants recognised enforcement lacked ‘certainty of punishment’ (due to the perceived minimal level of enforcement), the severity of punishment was a concern.

Role modelling was also notable, whereby, adopted dogs from the Humane Society and City Shelter arrive with a free license, nudging owners to re-licence once it expired. Furthermore, owners without a license cannot avail of doggy daycare, dog sitting or walking services or the subsidised neutering and medical treatment available to supported dog owners.

Interviewees discussed situational factors, such as the local wildlife. Bears, Cougars and mountain lions in the mountains around the city and coyotes in and around the city, present a real threat to people and their dogs. Consequently, Calgarians may

be safety conscious but not risk adverse, that is, dangerous wildlife cannot simply be destroyed, so there is an acceptable level of risk in engaging in these spaces. Furthermore, the public may readily accept leashing as part of being a responsible dog ownership to protect their dogs from wildlife. Among the other incentives, the value of Bylaw officers “for keeping coyotes under control” (C8) was apparent.

While there is no simple explanation for the higher compliance among Calgarians and no panacea for making it work elsewhere, there are clear elements of reward and punishment, social norms and situational factors at play. One factor particularly evident is the effort to foster a culture of care, whereby, there is room for considering the needs of different species and individuals, even those found to be dangerous.

### Enough Tools in the Toolbox

Despite the central focus on education and licensing compliance, interviewees noted the Calgary approach provides a variety of enforcement tools to respond to the complexities of irresponsible dog ownership:

that's really what that bylaw change was about, is trying to come up with enough tools in that toolbox to deal with the variety of situations. Because there's so many different things that can be happening with that whole spectrum of responsible pet ownership, right? (C5)

Possible tools were identified in the review of 33 municipalities and in feedback from respondents to the Bylaw review. While it is important to review the use of each tool to determine its viability, the range of tools available allow flexibility and officers to tailor their response to individual cases. This is evident in the assessment of aggressive dogs, whereby, the spectrum and severity of aggression can determine the level and range of responses. In recognition that irresponsible dog ownership is a multifaceted problem, a multipronged approach is likely to best serve officers and the public. One interviewee cautioned that having a range of instruments is not effective if an officer lacks willingness to act (example given was a hoarding situation, which falls under the Bylaw and Animal Welfare). Thereby, enforcement agents must be enabled and encouraged to use the right tool for the job.

## 8. Lessons learnt from other countries for reducing dog bites in the UK

This section considers the key messages from the empirical data analysis and literature reviews which may be of relevance to the UK. Despite the many examples of good practice provided in the case studies, it is neither practical nor feasible to suggest transferring any one approach to the UK. Rather, the aim here is to highlight the notable features which may be useful tools in enhancing the UK response to dog control. These features, could for example, be piloted in the UK, to determine their viability. Importantly, the research evidence there is no panacea or silver bullet for reducing dog bites or promoting responsible dog ownership. Likewise, there are many complicated factors influencing these issues and the subsequent responses adopted in other countries. Thereby, care must be taken when considering how they may be implemented in the UK context. Essentially, the challenge is to identify what the response is trying to achieve and then finding the right tools for the job. The following should be considered:

The core focus of the case study approaches is on **responsible dog ownership** or moving towards a model which emphasises this. This means directly targeting dog owners. As evidenced in the research, wanting responsible dog ownership is not the same as implementing a strategy which develops this. The findings indicate it can be achieved, for example, by making owners accountable through traceability (e.g. registration, licensing, ID), enforcement (e.g. robust and intelligence-led), restrictions (e.g. age, behaviour, activities with the dog) and compulsory training or competency tests (e.g. Vienna). Incentives (e.g. via licensing) and education and training provision are also important tools for encouraging responsible ownership. Importantly, the approach must be of value and beneficial to dog owners to facilitate compliance from “willing agents”. Furthermore, regulation must consider the complexities of responsible dog ownership and vulnerabilities in the community, to avoid barriers. For example, some case study areas used tiered fees for dogs and subsidised or free neutering programmes to encourage compliance. A focus on responsible dog ownership in the UK is emphasised by Nurse et al. (2021) and evident in Government narratives on dog control.

Developing a **culture of care and dog-positive culture**. This may require the community accepting a higher level of risk and greater awareness and respect for dogs' needs (wants and preferences), to ensure better outcomes for dogs. This is consistent with the tiered approach and scale of aggression used to assess dogs and determine the outcome of aggression incidents, employed in many of the case study areas. The RSPCA and Scottish SPCA (2023) kindness index survey reveals a positive shift in public attitudes towards animal welfare, suggesting the setting is right

for enhancing a culture of care. For example, these NGOs have changed the terminology used and their core mission statements (e.g. joy and value of, kindness and compassion, respect to dogs). The **importance of such messaging coming from those in authority**, was noted in Calgary and employed in their new Bylaw, whereby terminology was altered to reflect changes in, and management of public expectations. The RSPCA (2020) resource for AWERB members argues a culture of care requires “an establishment-wide, demonstrable commitment to improving animal welfare, scientific quality, care of staff and transparency for all stakeholders, including the public. It goes beyond simply complying with the law”.

Linked to the above is **promoting the safe and harmonious use of public spaces**. For example, managing expectations around dog behaviour by educating dog owners and the community will support people in making better decisions when engaging with dogs. In this way, **positive inter-species engagement is the responsibility of dog owners and the wider community**. This is consistent with the dog bite research which notes inappropriate human behaviour is a key feature of bite incidents and, thereby, highlights the importance of educating potential victims (and their families) on how to engage with dogs safely and respectfully. Likewise, many of the case study areas recognised such mitigating factors in assessing the severity and outcomes for dogs that bite. Greater owner accountability is noted in the case studies and dog bite research. Case study authorities require or encourage owners to prove competence to own a dog (e.g. Vienna owner exam and training course). Nurse et al. (2021) suggest dog awareness courses for UK owners with dog control issues, however, this could be extended further through voluntary or compulsory courses for all dog owners (see also Nurse 2023). Dog bite research emphasises the importance of owners understanding their responsibility to appropriately control (e.g. restricting their dogs at home and in public) and train their dogs (e.g. education, socialisation). Both also highlight the important role authorities play in supporting owners and the community. For example, by prohibiting the use of harsh training and punishment measures with dogs, environment modifications in public space, including restraining or prohibiting dogs in ‘at risk’ public areas, and promoting awareness schemes (e.g. yellow ribbon for reactive dogs). The subsidised licensing proposed in Calgary for lower-income families is also compatible with the dog bite research, which suggests lower socio-economic communities are more vulnerable to such incidents. To ensure dog control is welfare compatible, it is vital that restraints on dogs are balanced with dog welfare, specifically their ability to engage in natural behaviours.

The use of **public education and online and other points of information** were identified in all case study areas. These programmes appear to be effective in facilitating compliance and reducing dog bite incidents. However, the dog bite research reveals there are few evaluations available on these approaches to identify what works. Baatz et al.s (2020) evaluation of two educational programmes

for children on responsible dog ownership, identified they had positive attitude outcomes, but this does not directly result in positive behavioural change. The education and information approaches in case study areas may be usefully adopted in the UK, however, evaluation and ongoing impact assessment of existing or new responses are necessary.

Addressing **dog control as a “public good”** highlights the holistic approach taken to dog and human wellbeing in some case study areas. This was a core argument underpinning Calgary licensing compliance, whereby the benefits of licensing were argued to be broad and diverse (e.g. diffused costs, benefiting individual and community dogs). Many animal welfare issues, such as vaccines, breeding and acquisition of dogs, dog behavioural issues, stray and abandoned dogs and hoarding overlap with dog control and public health concerns. Thereby, collaborative attention to improving animal health and welfare directly and indirectly, through targeted programmes, will inform better public health and safety, and may reduce other social harms (e.g. criminality). One notable feature in the case studies which captured this, was restrictions on the number of dogs per household (for general and/or dangerous dogs). The prominent role registered dog trainers and veterinarians play in Calgary is also of interest. This is crucial as dog bite research identify the mental and physical health of dogs to be factors in bite incidents. The use of accredited dog trainers – Certification Council for Professional Dog Trainers in Calgary – was highlighted, as dog trainers are not regulated in the UK. A similar concern was raised regards dog walkers in Calgary, which now requires those walking more than six dog to have a permit (for which they need to evidence they have competence and/or training to do so). **A one health model** was proposed for Calgary, as it already provides the many benefits of governments, statutory organisations, civil society, businesses, communities, families, and individuals working together for positive change. The need for a collaborative approach was argued by Nurse et al. (2021), through promoting better information sharing and introducing model guidance. This measure should consider enhancing multiagency work with a broad range of stakeholders who inform dog and public health and safety.

The benefits of **establishing an effective monitoring system by competent authorities** is evident in Calgary. Robust data collection and monitoring must be facilitated by a modernised IT infrastructure which accurately records granular data on the dog (and dangerous dog) population, owners, and dog attack and nuisance incidents. The dog bite research stresses the need for relevant and accurate dog bite data to inform effective public health and safety strategies. A centralised and comprehensive system would also enable intelligence-led and preventative enforcement, resource management and monitoring. Nurse et al. (2021) highlighted the pressing need for improved UK recording of dog attack data and incident



characteristics. Directly linked to effective monitoring and enforcement is **robust traceability, through licensing or registration**. While compulsory microchipping provides some traceability, it is not comprehensive enough to provide robust data and monitoring. As noted above, in addition to data, licensing or registration supports animal services and responsible dog ownership.

Linked to the above is the significance of **consistent and robust enforcement with consequences**. In addition to multi-agency collaboration, clear enforcement roles and responsibilities were evident in the case studies. Nurse et al. (2021) suggest introducing a statutory enforcement duty in the UK to facilitate this. Evidence in Calgary and elsewhere (see Carvelli 2020) indicates **a balance between incentives and punishment is key to effective dog control**. Calgary utilises a tiered approach to punishment and is perceived to be consequential by the public. Financial penalties increase for repeat offenders and riskier behaviour. It was noted that the penalties were impactful as they covered low to high level noncompliance (no ID tag to dog attack: \$50-3,000), can be accumulative (for each incident and dog), were expensive and enforcement was consistent (when caught – see Appendix 4).

As highlighted in the scoping of 45 countries dog control legislation, there are many different approaches to defining and responding to dangerous dogs. Most case study areas **adopt a nuanced and measured approach to defining and responding to dog aggression**. This is achieved in many ways. Although the dog bite research does not support breed specific restrictions as a measure to reduce dog bites, this approach is adopted in many countries. It can, however, be implemented in a more nuanced manner, through additional restrictions (e.g. muzzling, housing) and requirements (e.g. licensing, training, insurance), rather than bans on and/or euthanasia of specified breeds. Of note, is the focus on dog behaviour and bite incidents. The tiered approach to designating dogs as vicious or dangerous and the use of the Dunbar (or other) scale to assess the severity of a dog bite incident, permits a tailored approach to prevention and intervention. This recognises the complex factors involved in dog bites (supported by the dog bite literature) and balances the needs of individual dogs and the public. It also recognises aggression as a normal behaviour, that can be displayed by any dog of any breed. The use of independent experts and tribunal boards to decide the outcome for the dog, facilitates transparency and a measured response.

The **ability of regions, states, and communities to determine dog control policy that is bespoke to their needs** is notable in the findings. This facilitates flexibility to attend to local issues, to recognise and address vulnerabilities in the community and to tailor a response which allows for the complexity and nuance of dog bite incidents. It was noted by interviewees that this approach brings its own challenges (e.g. displacement, confusion, public pressure), nonetheless, independence was greatly

valued. This is relevant to the UK as the nature and prevalence of dog bites differs across the country (Tulloch et al. 2023) and the focus of each devolved nation varies in dog control.

In summary, measures which may enhance the UK response include:

- Making positive human-dog engagement the responsibility of dog owners and the wider community
- 'Responsibilize' dog owners using incentives, punishment, education and engendering a culture of care and compliance
- An evidence-based education and information approach
- Attention to wider dog welfare concerns and harms as part of the dog control response
- A holistic and collaborative approach or One-Health Model
- Licensing or registration to support traceability, enforcement, and service costs
- IT infrastructure which supports robust data collection and monitoring and enforcement
- Consistent and robust enforcement with consequences
- Flexibility to attend to local issues through legislation & bylaws
- A tiered and nuanced approach to identifying and responding to dangerous dogs

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## Appendices

### Appendix 1: List of Legislation

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## Appendix 2: Case Study Licensing and other information

### Ireland - Licensing

There are different types of licences available:

- an individual dog licence costs €20 and is valid for one year.
- a 'lifetime of dog' licence costs €140 and is valid for the dog's lifetime.
- a general dog licence costs €400 for one year but covers multiple dogs at one location (Citizens Information, 2023).

### Victoria – Licensing & Incentives

#### Licensing costs

D01	Dog Desexed	\$40.00	C01	Cat Desexed	\$40.00
D02	Dog Desexed – Pensioner	\$20.00	C02	Cat Desexed – Pensioner	\$20.00
D03	Dog Over 10 Years Old	\$40.00	C03	Cat Over 10 Years	\$40.00
D04	Dog Over 10 Years Old - Pensioner	\$20.00	C04	Cat Over 10 Years Old - Pensioner	\$20.00
D07	Dog Working Stock	\$40.00	C07	Cat A - Org Registered	\$40.00
D09	Dog Obedience Trained	\$40.00	C08	Cat A - Org Registered Pensioner	\$20.00
D10	Dog Obedience Trained- Pensioner	\$20.00	C09	Cat Breeding at Registered Business	\$40.00
D11	Dog A - Org Registered	\$40.00	C11	Cat Not Desexed	\$120.00
D13	Dog Breeding at Registered Business	\$40.00	C12	Cat Not Desexed - Pensioner	\$60.00
D15	Dog Not Desexed	\$120.00			
D16	Dog Not Desexed - Pensioner	\$60.00			
D17	Declared dogs, and Guard dogs (dangerous, menacing and restricted breeds) - no discounts apply	\$120.00			

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(Central Goldfields Shire Council (2022) Domestic animal Registration Notice)

#### Incentives

The Responsible Dog Ownership Course is designed to give dog guardians some basic information about their legal responsibilities as a dog owner. The course covers 4 main topics, with tests at the end (90% pass rate required):

- Section 1 — Rights and responsibilities
- Section 2 — Dog welfare and management
- Section 3 — Dog behaviour
- Section 4 — Dog training
- Section 5 — Tests

The e-learning course is available at: [animalwelfare.vic.gov.au](http://animalwelfare.vic.gov.au)

#### General Dog Restrictions

- keeping the dog adequately restrained when on their premises, including within a prescribed enclosure when outside but still on the premises
- Clearly display warning signs on their property.

- Ensure the dog is wearing a prescribed collar
- Keep the dog under effective control when off the property by way of leash and muzzle.
- Ensuring that a minor does not have control of the dog off the property
- Not transfer ownership of the dog (unless the owner has died, or the owner decides to surrender the dog to a council pound or shelter)
- Have the dog neutered/spayed.

## **Multnomah County Dangerousness Levels & Licenses:**

### **Licensing and ownership requirements for dogs designated Levels 1-4**

- Level 1 - \$50
- Level 2 & 3 - \$100
- Level 4 - \$150

Level 1 dogs shall be restrained so as not to be at large by a physical device or structure in a way that prevents the dog from reaching any public sidewalk or adjoining property and must be located so as not to interfere with the public's legal access to the owner/keeper's premises, whenever that dog is outside the owner/keeper's home and not on a leash.

Level 2 dogs should be confined within a secure enclosure whenever the dog is not on a leash. The secure enclosure must be located so as not to interfere with the public's legal access to the owner/keeper's property. In addition, the director may require the owner/keeper to obtain, maintain, and provide proof of public liability insurance. Furthermore, the owner/keeper may be required to complete a responsible pet ownership program as prescribed by the director or hearings officer.

Level 3 & 4 dogs shall be confined within a secure enclosure whenever the dog is not on a leash. The secure enclosure must be located so as not to interfere with the public's legal access to the owner/keeper's premises where the dog is kept. Additionally, the director may require the owner/keeper to obtain and maintain proof of public liability insurance. The owner/keeper shall not permit the dog to be off their premises unless muzzled and restrained on an adequate leash under the control of a capable person. Additionally, the director may require the owner/keeper to satisfactorily complete a pet ownership program. The owner/keeper of a dog classified as dangerous shall not permit warning signs to be removed from the secure enclosure and shall not permit the special tag or collar to be removed from the classified dog. The owner/keeper of a potentially dangerous dog(s) shall not permit the dog to be moved to a new address or change

owners/keepers without providing the director with ten days' prior written notification.

### **General License Fees**

- A one-year licence costs \$42 for fertile dogs and \$27 for spayed/neutered dogs
- A two-year licence costs \$77 for fertile dogs and \$47 for spayed/neutered dogs
- A three-year licence costs \$107 for fertile dogs and \$62 for spayed/neutered dogs

### **General Restrictions**

- permit any animal to be at large
- permit any animal to trespass upon property of another
- fail to comply with requirements of the chapter that apply to keeping an animal or dangerous animal or any facility where such animals are kept
- permit an 'in season' dog to be accessible to a male dog not in the persons ownership except for intentional breeding purposes.
- permit any animal to unreasonably cause annoyance, alarm, or noise disturbance to any person or neighbourhood by barking, whining, screeching, howling, baying or other like sounds which may be heard beyond the boundary of the owner/keeper's property under conditions where the animal sounds are shown to have occurred either as an episode lasting for a minimum of 10 minutes or repeated episodes of intermittent noise lasting for a minimum period lasting a minimum period of 30 minutes.
- leave an animal unattended for more than 24 consecutive hours without minimum care.
- deprive an animal of proper facilities/care including but not limited to items prescribed at 13.153 of the chapter. Proper shelter must provide protection from the weather and is maintained in a condition to protect animals from injury
- physically mistreat any animal by abuse, neglect, or failure to provide minimum care.
- permit any animal to leave the confines of any officially prescribed quarantine area
- permit any dog to engage in any behaviours prescribed in 13.401(A) through (D) or in any behaviour described in 13.402.
- harbour any dangerous animal that is not otherwise exempted under 13.154. Provided any persons who owns or is keeping a dangerous animal on the effective date of this chapter in that persons jurisdiction shall have 180 days from the effective date to provide for the animal's removal from the country or other lawful disposition.



- permit any dog to be tethered for more than 10 hours in a 24-hour period (unless provided under MCC 13.300(b)(2)). Or permit any dog to be tethered in a manner or method that allows the dog to become entangled for a period of time detrimental to the animal's wellbeing.

## Calgary – Licence and permit fees & education

### Licence and permit fees

Cats and dogs three months or older are required to have a City of Calgary licence.  
[Learn more about the Responsible Pet Ownership Bylaw.](#)

Fee description	2022	2023	2024	2025	2026
Male or Female Unaltered Dogs	\$68	\$69	\$70	\$70	\$71
Neutered Male or Spayed Female Dogs	\$43	\$43	\$44	\$44	\$45
All Unaltered Dogs Under the Age of 6 Months at the Time the Licence is Purchased	\$43	\$43	\$44	\$44	\$45
Vicious Animal Licence Fee	\$300	\$305	\$310	\$310	\$315
Nuisance Animal Licence Fee	\$119	\$121	\$123	\$123	\$125
Male or Female Unaltered Cats	\$41	\$42	\$43	\$43	\$44
Neutered Male or Spayed Female Cats	\$20	\$20	\$21	\$21	\$22
All Unaltered Cats Under the Age of 6 Months at the Time the Licence is Purchased	\$20	\$20	\$21	\$21	\$22
Replacement Tag	\$5	\$5	\$5	\$5	\$6
Urban Livestock Licence – Bee Colonies	\$10	\$10	\$11	\$11	\$12
Urban Livestock Licence - Hens	\$69	\$69	\$70	\$70	\$72
Urban Livestock Licence - Pigeons	\$10	\$10	\$11	\$11	\$12
Livestock Emotional Support Animal Permit	\$69	\$69	\$70	\$70	\$72
Temporary Livestock Permit	\$69	\$69	\$70	\$70	\$72

Pets



HELPING LOST PETS FIND HOME

## Pet licences and

## Appendix 3: Dunbar Scale

Levels of severity of dog bites and associated outcomes.


# Canine Bite Levels

Designed by Dr. Sophia Yin, Illustrated by Lili Chén\*

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**Level 1 (Pre-Bite)**

Snapping (air bite, no contact)





Get help before it progresses to an actual bite. Do not punish these warning signs or the dog may progress to biting without warning. Instead, learn the signs of fear and anxiety that the dog may show prior to this situation and the common human actions that might contribute.

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**Level 2 (Near-Bite)**

Tooth contact on skin but no puncture






This near-bite is concerning even though it is inhibited and has not yet broken skin. Ask yourself what earlier signs (i.e. of fear/anxiety) you missed.

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**Level 3**

3A. Skin puncture, single bite (all punctures shallower than the length of the canine tooth)

Even though the bite may not be severe it is still reportable. Reporting is mandatory if the victim is treated in a hospital. Once your dog has actually bitten at this level (or higher) he will always be considered a liability, even if, with behavior modification he is 99.9% improved.

3B. Skin puncture, multiple bites (all punctures shallower than the length of the canine tooth)






Multiple bites generally mean the dog is in a higher arousal state. The dog is reacting without thinking in between bites.

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**Level 4 (Very Serious)**

Single bite with punctures deeper than the length of the canine (the dog bit and clamped down) or with slashes in both directions from the puncture (the dog bit and shook his head)






This is a harder bite than a level 3 bite. It's no longer inhibited. Therefore, it represents a much higher liability. This level bite can kill a child.

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**Level 5 (Very Serious)**

Multiple-bite attack with deep punctures, or multiple attack incidents





Dogs that bite at this level have generally two practice biting at levels 3 and 4 already. Some dogs are so fearful that a scary event triggers such a high arousal state that they get stuck in a reactive mode and continue to bite.

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**Level 6 (Death)**

Victim killed or flesh consumed



It's important to realize that even little dogs and puppies can kill infants and small children and that death may be due to overly aroused play rather than viciousness or fear. It's best to seek qualified help before the dog even reaches a level 2 bite.

\*These levels are based on the levels developed by Dr. Ian Dunbar

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## Appendix 4: Calgary List of Financial Penalties

Example information from Schedule C and D

**SCHEDULE "C"**  
**OFFENCE PENALTIES**

<b>Section</b>	<b>Offence</b>	<b>Early Payment Amount 1</b> (if paid within 15 days after the date of the offence)	<b>Early Payment Amount 2</b> (if paid 16 to 45 days after the date of the offence)	<b>SPECIFIED PENALTY</b>
3(1)	Unlicensed dog	\$ 100.00	\$ 150.00	\$ 250.00
3(2)	Unlicensed cat	\$ 100.00	\$ 150.00	\$ 250.00
7(1)	Give false information when applying for licence	\$ 250.00	\$ 325.00	\$ 500.00
8(2)(a)	Dog or Cat not wearing <i>Tag</i> identification	\$ 50.00	\$ 60.00	\$ 75.00
9(1), (2)	Own more than 6 <i>Animals</i> or permit more than 6 in one dwelling unit	\$ 100.00	\$ 150.00	\$ 250.00
11(1)	<i>Animal Running at Large</i>	\$ 75.00	\$ 110.00	\$ 150.00
11(4)	<i>Animal</i> other than dog in <i>Off Leash Area</i>	\$ 50.00	\$ 70.00	\$ 100.00
11(5)	Dog not under control at <i>Off Leash Area</i>	\$ 50.00	\$ 70.00	\$ 100.00
11(7)	More than 6 dogs off <i>Leash</i> in <i>Off Leash Area</i>	\$ 50.00	\$ 70.00	\$ 100.00
11(8)	Fail to restrain/remove dog from <i>Off Leash Area</i>	\$ 50.00	\$ 70.00	\$ 100.00

**SCHEDULE "D"**

**NUISANCE & VICIOUS ANIMAL OFFENCE PENALTIES**

<b>Section</b>	<b>Offence</b>	<b>Early Payment Amount 1</b> (if paid within 15 days after the date of the offence)	<b>Early Payment Amount 2</b> (if paid 16 to 45 days after the date of the offence)	<b>Specified Penalty</b>
43	Unlicensed <i>Nuisance Animal</i>	\$ 200.00	\$ 300.00	\$ 500.00
46(3)	Failure to disclose <i>Nuisance Animal</i> designation when selling, giving away or transferring <i>Animal</i>	\$ 200.00	\$ 300.00	\$ 500.00
46(4)	Failure to disclose <i>Nuisance Animal</i> designation to <i>Person</i> providing temporary care	\$ 200.00	\$ 300.00	\$ 500.00
47(1)(a), (b), (c), (d), (e), (f), and (g)	Failure to comply with a <i>Nuisance Animal</i> condition	\$ 500.00	\$ 700.00	\$ 1000.00
50	Unlicensed <i>Vicious Animal</i>	\$ 250.00	\$ 325.00	\$ 500.00
54(3)	Failure to disclose <i>Vicious Animal</i> designation when selling, giving away or transferring <i>Animal</i>	\$ 500.00	\$ 700.00	\$ 1000.00
54(4)	Failure to disclose <i>Vicious Animal</i> designation to <i>Person</i> providing temporary care	\$ 500.00	\$ 700.00	\$ 1000.00
56(1)(a)	Fail to tattoo or implant <i>Vicious Animal</i> with microchip	\$ 500.00	\$ 700.00	\$ 1000.00
	Fail to neuter/spay <i>Vicious</i>			