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A DEAD HORSE, YOU CAN'T BEAT IT: EQUINE CARCASS DISPOSAL LAWS AND PRACTICES

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I. INTRODUCTION

It is a fact of life that every living thing will eventually die, and when the time comes, these bodies must be disposed of responsibly. Of specific interest to Kentucky is the problem of equine carcass disposal, because Kentucky is known as the "Horse Capital of the World."¹ The equine industry has a significant effect on Kentucky's economy, with an estimated impact of four billion dollars annually.² The horse industry is attributed with directly and indirectly creating between 80,000 and 100,000 jobs across the state.³ With an estimated 320,000 horses living in the state, Kentucky must find ways to deal with the significant number of equine mortalities every year.⁴ A succinct multi-jurisdictional survey is incorporated into this Article, but the Article primarily focuses on the disposal of equines in Kentucky. While Kentucky has a much revered and thriving horse industry, the Authors find that many horse owners are unaware of carcass disposal options, despite thorough statutes and regulations in this area.⁵

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¹ *Horse Attractions*, LEXINGTON CONVENTION & VISITORS BUREAU, <http://www.visitlex.com/whattodo/attractions.php?SubCat=324> (last visited Nov. 1, 2011).

² *Industry Facts: Kentucky Equine Economy*, *supra* note 1.

³ *Id.*

⁴ *Id.*

⁵ *See, e.g.*, KY. REV. STAT. ANN. § 257.160 (West 2011) (outlining lawful disposal methods in Kentucky); 302 KY. ADMIN. REGS. 20:052 (2011) (regulating composting of livestock carcasses); *see also infra* Section V.A.1. (discussing nuisance law and state police power with regard to state regulation of equine carcass disposal).

Kentucky's horse owners have dealt with carcass removal in a wide variety of ways. One particularly reverential example is that of thoroughbred champion Man O' War, who won 20 of his 21 starts in 1919 and 1920.⁶ The champion horse died on November 1, 1947 and his body was embalmed and buried in a custom built coffin.⁷ Man O' War is the first horse believed to be treated in this manner.⁸ Between 500 and 2,000 people reportedly attended the Man O' War funeral.⁹ The open-casket ceremony lasted thirty minutes, and included nine eulogies.¹⁰ Further, the funeral was broadcast to the public on the radio.¹¹ Kentucky's unique and historic relationship with horses provides a particularly relevant lens for examining the important problem of equine carcass disposal.

Unwanted horses are an increasing concern. In June of 2008 the United States Department of Agriculture held a national forum to discuss this problematic issue.¹² On July 19, 2011 in Lexington, Kentucky the Kentucky Equine Networking Association held a meeting to further discuss the issue of unwanted horses and how this problem affects the equine community.¹³ The event featured a panel of experts, including veterinarians and representatives from equine humane organizations, along with a keynote presentation entitled "*Unwanted Horses: Why we still have them and how it affects you.*"¹⁴ Unwanted horses may be sick, injured, old, unmanageable, or dangerous.¹⁵ They may be horses that the owner is no longer economically able to care for, or that no longer meet the owner's expectations.¹⁶ Owners may try to find a new home for the animal, but when a new home is unavailable euthanasia may become the chosen method of disposal.¹⁷ Horse owners may euthanize horses due to disease or old age.¹⁸ It is estimated that every year over 200,000 equine carcasses must be disposed of in the United States.¹⁹ The University of Kentucky

⁶ Barbara Livingston, *Man o' War's Funeral: Remarkable Final Tribute for Majestic Champion*, DAILY RACING FORM (Feb. 24, 2011), <http://www.drfr.com/blogs/man-o-wars-funeral-remarkable-final-tribute-majestic-champion>.

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² James J. Hickey Jr., *Introduction*, in THE UNWANTED HORSE ISSUE: WHAT NOW? FORUM, REVISED PROCEEDINGS 2, 2 (Camie Heleski et al. eds., 2008).

¹³ Kentucky Equine Networking Association, KY. HORSE COUNCIL, <http://www.kentuckyhorse.org/kena-meetings/> (last visited Nov. 1, 2011).

¹⁴ *Id.*

¹⁵ Tom R. Lenz, *The "Unwanted" Horse in the U.S.: An Overview of the Issue*, in THE UNWANTED HORSE ISSUE: WHAT NOW? FORUM, REVISED PROCEEDINGS 24, 24 (Camie Heleski et al. eds., 2008).

¹⁶ *Id.*

¹⁷ *Id.* at 25.

¹⁸ *Id.*

¹⁹ Nat T. Messer IV, *The Plight of the Unwanted Horse: Scope of the Problem*, AM. ASS'N OF EQUINE PRAC., http://www.aaep.org/health_articles_view.php?id=291 (last updated Jan. 2009).

Livestock Disease Diagnostic Center in Lexington, Kentucky estimates that it disposes of 60,000 animals annually, and that sixty percent of these animals are horses.²⁰ This amounts to two and a half million pounds of animal tissue processed yearly.²¹ Carcasses pose potential risks to the environment not only because of the sheer volume, but because these carcasses may be contaminated with various drugs or disease.²² Horse owners may be unwilling or unable to properly care for a living horse, and therefore are less likely to follow proper procedures for disposal after an animal dies.

The problem of carcass disposal is not limited to equines. All commercial animal productions must deal with the decision of how to dispose of carcasses. If the animal is contaminated with an infectious disease, its carcass will poses serious contamination risks.²³ Recently foot and mouth disease plagued the United Kingdom, and many animals were killed in efforts to stop the spread of disease.²⁴ Over the course of this outbreak over 3,854,000 animals, including sheep, cows, and deer, were destroyed in efforts to stop the spread of the disease.²⁵ This created massive logistical issues, one issue being the disposal of carcasses in a safe and effective manner.²⁶ Natural disasters, such as floods and hurricanes, create similar problems in dealing with the disposal of animals that fall victim to weather events.²⁷ In addition to commercial animal production, there are vast numbers of personal pets that upon death will necessitate disposal. According to recent estimates, there are over 163 million dogs and cats owned in the United States.²⁸ The question then becomes, what to do with the remains?

Lawful methods for disposal of diseased livestock in Kentucky currently include: complete incineration, boiling the carcass for two hours or more, burial, removal by a licensed rendering establishment, removal to a sanitary landfill, and composting.²⁹ Additionally, an owner can dispose of

²⁰ Interview with Craig Carter, Dir., Univ. of Ky. Veterinary Diagnostic Lab., in Lexington, Ky. (Apr. 22, 2009).

²¹ *Id.*

²² Cf. Tom R. Lenz, *An Overview of Acceptable Euthanasia Procedures, Carcass Disposal Options, and Equine Slaughter Legislation*, in AAEP 50TH ANNUAL CONVENTION PROCEEDINGS 191, 192 (2004) (stating that carcasses of animals that have been euthanized must be disposed of in a safe manner so as not to pose a hazard to people or other animals).

²³ Marty Vanier et al., *Ruminant Carcass Disposal Options for Routine and Catastrophic Mortality*, CAST ISSUE PAPER NO. 41 (Council Agric. Sci. & Tech., Ames, Iowa), Jan. 2009, at 2.

²⁴ Dee B. Ellis, *Carcass Disposal Issues in Recent Disasters, Accepted Methods, and Suggested Plan to Mitigate Future Events* 20 (Dec. 1, 2001) (unpublished applied research project, Southwest Texas State University), available at <http://ecommons.txstate.edu/arp/68/>.

²⁵ *Id.* at 1.

²⁶ *Id.*

²⁷ *Id.*

²⁸ U.S. *Pet Ownership Statistics*, HUMANE SOC'Y U.S. (Aug. 12, 2011), http://www.humanesociety.org/issues/pet_overpopulation/facts/pet_ownership_statistics.html.

²⁹ KY. REV. STAT. ANN. § 257.160(1)(a)-(f) (West 2011).

a carcass using a combination of approved methods, or any other "scientifically proven method" approved by the Board of Agriculture.³⁰ Finally, the governing statute mandates that an owner dispose of a carcass within forty-eight hours after the carcass is found, "unless the carcass is otherwise preserved in cold storage."³¹ Disposing of diseased livestock in violation of this statute can result in a fine of up to five hundred dollars.³² Multiple offenses can result in fines of up to one thousand dollars, or imprisonment for up to thirty days, or both.³³ The environmental effects associated with each of these disposal methods varies greatly.³⁴ Please refer to Table 1 below, which compares the environmental impacts of different disposal methods.

| Comparison of Environmental Impact of Disposal Methods | | | | | | | |
|--|---|--|--|---|---|---|---|
| Method | | | | | | | |
| Burial and Landfill | Contamination of surrounding soil and ground water, problem exacerbated if proper procedures not followed | Space taken up by carcasses in landfill/ground | Airborne bacteria | Offensive odors | Potential contact with birds and vermin | If diseased, potential spread to humans in contact with carcass | If not buried on site, biosecurity concerns with transport |
| Rendering | Environmentally sound method | Possible capacity constraints | Some geographic areas not served | Process requires electric or propane energy | | Byproducts can be used for fertilizer, animal feed | Biosecurity concerns with transport |
| Composting | Environmentally sound method, when performed properly | Method best suited to small numbers of carcasses | Potential for contact with animals and/or humans if area is not properly constrained | | | End product used for soil amendment | If not composted on site, biosecurity concerns with transport |

Table 1. Comparison of Environmental Impact of Disposal Methods³⁵

³⁰ *Id.* at § 257.160(1)(g)-(h).

³¹ *Id.* at § 257.160(2).

³² *Id.* at § 257.990(7).

³³ *Id.*

³⁴ Ellis, *supra* note 27, at 26-34.

³⁵ Ellis, *supra* note 27 at 37-42.

This Article uses qualitative research to gain insight into the decision-making processes endemic in the treatment and disposal of physical remains. Section II of this article examines existing academic marketing literature on consumers decision-making concerning product disposal. Section III introduces original qualitative research conducted by the authors. In Section IV, the Authors survey the landscape of state and federal legal issues surrounding the disposal of dead animals. This research examines the decision-making process of Kentucky horse owners faced with the disposal question. Finally, in Section V, the Article presents strategies and recommendations for environmentally sound and sustainable disposal methods, and addresses the question of how to most effectively promulgate laws that will encourage consumers to make environmentally sound decisions.

II. CONSUMER PRODUCT DISPOSITION

In the following section, the authors discuss academic literature concerning sustainable and lawful equine mortality disposition. The marketing studies here presented suggest that greater education and consumer awareness can make proper disposal more likely. Recommendations made in section III for better dissemination of information to consumers reflect these market research findings.

The Environmental Protection Agency (EPA) classifies certain leftover household products, such as batteries, cleaners, oils, paints, and pesticides, as "household hazardous waste."³⁶ These leftover products contain "corrosive, toxic, ignitable, or reactive ingredients," having the potential to contaminate the environment and pose a threat to human health.³⁷ Marketing literature is limited regarding used product disposal. The majority of literature concerning consumer behavior focuses on the pre-purchase and purchase stages of consumer product purchasing. One of the earliest papers to include disposition as part of the consumer product lifecycle was authored by Jacoby, Berning, and Dietvorst in 1977.³⁸ This publication developed a framework for consumer disposal behavior, which occurs after the pre-purchase, acquisition, and usage stages.³⁹ Jacoby, Berning, and Dietvorst identified three factors influencing disposal behavior: psychological characteristics of the decision maker, such as personality, attitudes, emotions; factors intrinsic to the product, such as age, size, value; and extrinsic factors, such as finances, storage space, urgency,

³⁶ *Household Hazardous Waste*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/epawaste/conservation/materials/hhw.htm> (last updated Sept. 22, 2011).

³⁷ *Id.*

³⁸ Jacob Jacoby et al., *What About Disposition?*, 41 J. MARKETING 22, 22 (1977) (discussing factors that affect consumer product disposal behavior).

³⁹ *Id.*

circumstances of acquisition.⁴⁰ Subsequent authors have since considered the problem of product disposal.

Boyd and McConocha expanded upon the integration of disposal into the product life cycle, and explored how consumers might be encouraged to make better decisions about product disposal.⁴¹ These researchers concluded that marketing professionals, consumer educators, and policy makers should work to increase consumer awareness about the implications of purchases that might lead to "premature burial" of usable goods.⁴² Boyd and McConocha argue that social responsibility necessitates consideration of the entire life cycle of products, as well as consideration of the environmental implications of wasted products.⁴³ Similarly, Tanner and Wölfling Kast found that in order to make sustainable decisions consumers must be equipped with sufficient knowledge to make informed decisions.⁴⁴

Studies suggest that lack of awareness negatively impacts sustainable behaviors and decision-making.⁴⁵ Research conducted by Birtwistle and Moore found that study participants might modify disposal behavior when they are "more aware of the social and environmental consequences."⁴⁶ However, efforts to educate the public on more environmentally friendly practices must be focused on the right actions. A study conducted by de Coverly concluded that successful anti-litter campaigns in the United States and the United Kingdom encourage the public to put litter in the proper place, as opposed to emphasizing environmental stewardship and the adverse effects of pollution.⁴⁷

Schwartz, Jolson, and Lee researched the effects of funeral services marketing on consumer product disposal decision-making.⁴⁸ This study is of particular relevance, as it is one of the few studies to consider death, and concludes that consumer emotions factor into decision-making when consumers purchase death-related services.⁴⁹ The Schwartz, Jolson, and Lee study also echoes the above discussed studies, finding that lack of

⁴⁰*Id.* at 26 (discussing factors that affect consumer product disposal behavior).

⁴¹See generally Thomas C. Boyd & Diane M. McConocha, *Consumer Household Materials and Logistics Management: Inventory Ownership Cycle*, 30 J. CONSUMER AFF., 218, 218-49 (1996).

⁴²*Id.* at 220.

⁴³*Id.* at 247-48.

⁴⁴Carmen Tanner & Sybille Wölfling Kast, *Promoting Sustainable Consumption: Determinants of Green Purchases by Swiss Consumers*, 20 PSYCHOL. & MARKETING, 883, 886 (2003).

⁴⁵Louise Canning, *Rethinking Market Connections: Mobile Phone Recovery, Reuse, and Recycling in the UK*, 21 J. BUS. & INDUS. MARKETING 320, 327 (2006); G. Birtwistle & C.M. Moore, *Fashion Clothing - Where Does it All End Up?*, 35 INT'L J. RETAIL & DISTRIBUTION MGMT. 210, 214 (2007).

⁴⁶Birtwistle & Moore, *supra* note 48, at 214.

⁴⁷Edd de Coverly, et al., *The Social Avoidance of Waste*, 28 J. MACROMARKETING 289 (2008).

⁴⁸Martin L. Schwartz, et al., *The Marketing of Funeral Services: Past, Present, and Future*, 29 BUSINESS HORIZONS 40, 41 (1986).

⁴⁹*Id.*

awareness affects consumers' decision making ability.⁵⁰ The general social attitude of denying or ignoring death means that people often make decisions about final disposition of a loved one without knowledge of "needs, requirements, costs, or available alternatives."⁵¹ This research reveals that most people make decisions about death and burial based on incomplete information, a problem compounded by the fact that people are typically clouded by grief and other emotions.⁵²

Our review indicates that analysis of product end-of-life exist, yet significant questions remain to be answered. Jacoby Berning, and Dietvorst identified psychological, intrinsic, and extrinsic factors thought to influence disposal behavior.⁵³ Subsequent literature suggests that significant awareness problem inhibit consumers from making environmentally friendly disposal choices, and questions remain concerning effective ways to enhance awareness. Additionally, Schwartz, Jolson, and Lee recognize that disposition decisions for loved ones may be undertaken with great emotional shock and vulnerability.⁵⁴ The lack of knowledge about end-of-life decision-making warrants further examination. This study proceeds by first presenting qualitative finding from interviews with relevant consumers to document their knowledge of equine carcass disposal methods, and proceeds by discussing legal and environmental considerations and implications.

III. DEFINING THE PROBLEM

A. Research Methods

Review of consumer production disposition literature suggests that education and awareness encourages consumers to make more sustainable decisions regarding product disposition. Prior to this study no research existed that specifically concerned end-of-life disposition of horses. The authors conducted the following study based on the Glaser and Strauss grounded theory approach.⁵⁵ The grounded theory approach facilitates discovery of thematic problems and motivations related to an issue through qualitative methodology.⁵⁶ The purpose of this qualitative study is to provide more insight into individuals' decision-making processes when disposing of equine carcasses. The qualitative method is appropriate in this

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.*

⁵³ Jacoby et al., *supra* note 41, at 26.

⁵⁴ Schwartz et al., *supra* note 51, at 40.

⁵⁵ BARNEY GLASER & ANSELM STRAUSS, THE DISCOVERY OF GROUNDED THEORY: STRATEGIES FOR QUALITATIVE RESEARCH (2008).

⁵⁶ *Id.*

situation for several reasons. First, there is very little marketing literature addressing issues related to death and carcass disposal. With very few exceptions, existing literature has not yet established a theoretical framework to address this important problem.⁵⁷ Research conducted for this Article was developed from the ground up, and specifically tailored theories were generated from qualitative data.⁵⁸ The second reason for employing a qualitative methodology is that qualitative research allows the researcher to "get at the inner experiences of participants, to determine how meanings are formed through and in culture, and to discover rather than test variables."⁵⁹ Qualitative research allows the researcher to step into research participants' world and learn from their perspective.⁶⁰ Literature on product disposal and on human funeral services suggests that emotions play a role in how consumers decide to dispose of a product or loved one.⁶¹ Disposal can be an emotionally laden process, and qualitative methodology allows the researcher to explore the complex relationships and considerations concerning disposal of a loved one.

B. Data Collection and Analysis

Data were obtained via in-depth interviews with thirty-four Participants in Kentucky. Participants were selected based on their ability to provide an understanding of the topic of equine mortality disposition. The theoretical sampling technique used is in line with other qualitative marketing research methods, such as those employed by Kohli and Jaworski,⁶² and Malshe and Sohi.⁶³ Theoretical sampling is not random, but is appropriate for qualitative research as Participants must be capable of providing insight into the phenomenon in question.⁶⁴ Authors built the sample as analysis was conducted, with responses from each sampled individual building upon previously collected data and analysis. Sampling continued until it was determined that no new or significant data would emerge and each category of study was well developed.⁶⁵ Each Participant was involved in the equine industry in some capacity and had experience

⁵⁷ Schwartz et al., *supra* note 51 (study of funeral services marketing).

⁵⁸ See GLASER & STRAUSS, *supra* note 55.

⁵⁹ JULIET CORBIN & ANSELM STRAUSS, *BASICS OF QUALITATIVE RESEARCH* 12 (3rd ed. 2008).

⁶⁰ *Id.*

⁶¹ E.g. Jacoby et al., *supra* note 41, at 26; Schwartz et al., *supra* note 51, at 41.

⁶² Ajay K. Kohli & Bernard J. Jaworski, *Market Orientation: The Construct, Research Propositions, and Managerial Implications*, 54 J. MARKETING 1, 2 (1990).

⁶³ Avinash Malshe & Ravipreet S. Sohi, *What Makes Strategy Making Across the Sales-Marketing Interface More Successful?*, 37 J. ACAD. MARKETING SCI. 400, 402 (2009).

⁶⁴ *Id.* at 402.

⁶⁵ GLASER & STRAUSS *supra* note 55, at 61-62 (discussion of Theoretical Sampling technique in qualitative research).

dealing with equine carcass disposal. Informants included individual horse owners, small farm managers, and large farm managers, as well as equine industry professionals such as veterinarians.⁶⁶

QSR International's NVivo 8 software was utilized to manage, code, and model the data. The general process for coding and analyzing data follows Corbin and Strauss' methods.⁶⁷

Humans often grow strong bonds with their animals, and experience much of the same grief when making the decision of how to dispose of their animals as they do with human loved ones. For example, it is possible to have a pet buried in a pet cemetery, cremated, or taxidermy via freeze-drying.⁶⁸ The existence of web sites and books offering support for grieving pet owners is evidence that people go through similar processes during the loss of a loved animal as with the loss of a loved human.⁶⁹

⁶⁶ Participants were recruited using personal contacts and referrals from interviewees. The interviews were conducted over three months and lasted between fifteen and fifty-five minutes. All thirty-four interviews were conducted in person. The interview process employed a semi-structured format beginning with general, open-ended questions and moving to more specific questions, following procedures as outlined in JAMES P. SPRADLEY, *THE ETHNOGRAPHIC INTERVIEW* (1979). Interviews began with "grand tour" questions regarding, or general questions about Participants' experience with equines. The Researcher interviewer then proceeded with a semi-structured set of questions. Please see Appendix A for an overview of the questioning route. Each interview followed a basic framework of exploratory themes to be explored, as well as individual routes of questioning based on each Participant's personal responses and experiences. Participants were asked to share any personal examples that were relevant to the line of questioning. Any ambiguous responses were clarified with further questions from the researcher to ensure that the researcher was clear on the true intent of the Participant. All interviews were audiotaped and transcribed verbatim, which resulted in just over seventeen hours of audio and 127 pages of single-spaced transcripts.

⁶⁷ Coding began after the first interview was transcribed and added as a source in Nvivo 8. This early data provided a foundation for further collection and analysis, with the initial ideas and themes identified guiding subsequent collection. Coding began by sorting the information by codes, and taking notes on the data as analysis continued in a series of memos. As each new interview source was added to the project, the material was examined with previously collected data sources and codes. If the data fit within existing categories, the researcher considered how new data further contributed to the understanding of the topic in question. If the data did not fit within existing categories, then a new category was created. The first stage of coding led to a series of 25 initial codes representing the main themes or topics emergent in the interviews. The next step was to further code for conceptual connections. During this second stage, each concept was related to other observations from other data sources. Each transcript was scrutinized for relationships between and within the initial categories. This process led to seven first-order categories which represented higher order similarities. Once the first-order categories were established, further analysis searched for relationships between these items, and from this analysis similar first-order categories were grouped into three main second-order themes, or dimensions, which served as the basis for the emergent framework. Appendix B outlines the initial codes, first-order categories, and second-order themes. Each code or category is represented within one of these three main themes. Once enough data were collected and analyzed to demonstrate that each category was adequately described in terms of its properties and dimensions, data collection ended.

⁶⁸ E.g., Moira Anderson Allen, *The Final Farewell: How to Handle a Pet's Remains*, PET LOSS SUPPORT PAGE, <http://www.pet-loss.net/funeral.shtml> (last visited Nov. 2, 2011); Weston Phippen, *With Taxidermy, Pet Disposal Doesn't Have to Mean Goodbye*, DENVERPOST.COM (Aug. 30, 2011), http://www.denverpost.com/lifestyles/ci_18783146.

⁶⁹ E.g., Anderson Allen, *supra* note 71; GARY KOWALSKI, *GOODBYE, FRIEND: HEALING WISDOM FOR ANYONE WHO HAS EVER LOST A PET* (2006).

In conducting qualitative research it is necessary for the researcher to have background, experience, and knowledge of the research topic.⁷⁰ A researcher should be sensitive to themes within the data, and able to see connections between concepts.⁷¹ Author Emily Plant, as a life-long horse owner and researcher who conducted previous research on persons in the equine industry, has the necessary background to conduct qualitative research in this context.

C. Reliability and Validity of Analysis

The Researcher employed a variety of procedures to assess the reliability and validity of data and resulting analysis. The Researcher followed procedures as outlined by Rust and Cooil to assess the reliability of the data.⁷² Next, the validity of the data was considered based on David Silverman's five strategies for increasing the validity of findings including the refutability principle, constant comparison method, comprehensive data treatment, searching for deviant cases, and making appropriate tabulations.⁷³

D. Findings

The data revealed three second-order themes, or dimensions, which underlie decision-making in the disposition of equine carcasses: (1) emotional attachment, (2) awareness, and (3) the role of expertise. First, dealing with death is often emotional, and these emotions can have a strong impact on decision-making processes.⁷⁴ Like decisions made concerning the death of a loved one, equine disposal can be an emotionally taxing process. Second, people should be aware of their options in order to make an environmentally conscious choice in carcass disposal. Third, people rely on expert information as a source of advice regarding their horses. As most veterinarians still make house calls, they are often called in to evaluate illness or injury of horses. People rely on veterinarians' advice regarding the health and wellness of their horses, and also rely on their advice regarding death. The following sections detail these three second order

⁷⁰ CORBIN & STRAUSS, *supra* note 62, at 34.

⁷¹ *Id.*

⁷² Roland T. Rust & Bruce Cooil, *Reliability Measures for Qualitative Data: Theory and Implication*, 31 J. MARKETING RES. 1, 3 (1994) (outlining the proportional reduction in loss approach to measure the reliability of data. Under this approach independent judges evaluate coded interviews, calculate a proportional reduction in loss based on similarities and differences between the codes of the researcher and the independent judges. Based on this method, the proportional loss for this study was calculated at .84, well above the suggested level of .70).

⁷³ DAVID SILVERMAN, *DOING QUALITATIVE RESEARCH* 278 (3rd ed. 2010).

⁷⁴ Schwartz et al., *supra* note 51, at 40-41.

themes. Verbatim quotes are presented from the research to provide evidence of each finding. Names have been disguised to ensure anonymity.

1. Emotional Attachment

In making the decision of how to dispose of a horse carcass, human emotion is at play. While some horses are simply "pasture ornaments" whose only role in life is to look lovely while eating grass, many horses become loved as pets or cherished as performance animals. Consumers can develop intense emotional attachment to objects or even brands.⁷⁵ There are over 163 million dogs and cats owned as pets in the United States,⁷⁶ and studies show that having a pet enhances and enriches quality of life.⁷⁷ People deeply mourn the loss of pet animals. While horses do not typically live inside the family home as dogs and cats do, humans may develop deep emotional bonds to their horses. Literature on consumer product disposal suggests that the psychological characteristics of the decision maker, including emotions, plays a role in resultant disposal behavior.⁷⁸ Dealing with death makes people very emotional, and these emotions can significantly impact decision-making process.⁷⁹ K, a farm manager, had this to say:

I guess it depends on how connected people are to the horse, I suppose, because there's some here that we've buried on the farm that were raised with the farm and people have had a little bit more emotional attachment to them. So that's a little bit different than just sending them to the diagnostic lab, which is what we usually do here.⁸⁰

Note that K made a distinction between what is *usually* done with the average horse versus what disposal method is chosen for those horses to which people are emotionally attached. Horse owner B spoke about his sentiment and attachment for certain horses and how this attachment influences how he disposes of carcasses:

⁷⁵ Matthew Thomson, et al., *The Ties That Bind: Measuring the Strength of Consumers' Emotional Attachments to Brands*, 15 J. CONSUMER PSYCHOL. 77, 77 (2005).

⁷⁶ U.S. Pet Ownership Statistics, *supra* note 31.

⁷⁷ Pat Sable, *Pets, Attachment, and Well-Being Across the Life Cycle*, 40 SOCIAL WORK, 334, 334 (1995).

⁷⁸ Jacoby et al., *supra* note 41, at 26.

⁷⁹ Schwartz, et al., *supra* note 51, at 41.

⁸⁰ Interview with K, Farm Manager, in (location redacted) (date redacted) (redacted interview transcript on file with the Researcher).

It's a sentimental deal more than anything. A horse that provides you with entertainment and satisfaction and enjoyment can be properly laid to rest on the property that it was raised or on the farm it resided on at its death as opposed to going to a rendering plant where it's a lot colder way of being disposed of.⁸¹

In some cases, respondents referenced a specific situation in which they dealt with the death of a special animal. J, a farm manager at a family farm, spoke about when a breeding stallion was humanely euthanized due to the infirmities of old age. He said that this horse "kept us alive for a long time," meaning the revenue generated from his stud fees kept the farm operating and people in work when there was little other income.⁸² J stated:

It's obviously a terrible thing to have to do. It was very sad. We were all there. The whole family was there. I stayed around to actually see the horse be put down. But it's very emotional, a lot of tears. Dad was in tears. Our stallion groom was in tears. It's a tough day.⁸³

J took the researcher to see this horse's grave, and explained the significance of the grave location and why burial was chosen. The grave was located near the barn where the horse lived, and the gravesite overlooked the pasture where the horse grazed.

In summary, human emotion plays a role in the choice of carcass disposal method. Horses to which people are bonded are often given different burial treatment in honor of the service, joy, or satisfaction that the horse provided. Human emotion was cited by twenty-six of thirty-four Participants as a factor influencing their choice method of carcass disposal. Participants would rely on a heuristic, choosing the most convenient option disposal of for animals to which they or other people were not emotionally attached. The animals that people were emotionally attached to were given different treatment at the time of disposal. Communication designed to encourage consumers to choose environmentally conscious disposal method should consider emotional connections that an individual might have with the item.

⁸¹ Interview with B, Horse Owner, in(location redacted) (date redacted) (redacted interview transcript on file with the Researcher).

⁸² Interview with J, Farm Manager, in (location redacted) (date redacted) (redacted interview transcript on file with the Researcher).

⁸³ *Id.*

2. Awareness

The next second-order theme or dimension identified is awareness. This finding is not surprising, given that awareness, or lack thereof, is commonly cited in product disposal literature as an antecedent of sustainable consumer behavior. Many studies identify awareness as a contributing factor to environmentally conscious behaviors such as recycling, reuse, and the purchase of eco-friendly products.⁸⁴ This awareness problem is also relevant in situations where consumers are emotionally attached to a potentially harmful product. Even when individuals care very much about something, they do not necessarily take the time to become educated on disposal options, as grief may cloud their decision-making.⁸⁵ To make an environmentally friendly choice in disposal, decision-makers must be aware of their options.⁸⁶

H, a lifelong horse owner who grew up on a family farm with horses, discussed how carcasses were disposed of on her family farm. She stated that while all of their family horses were buried on the farm, this was not always the case at surrounding farms.⁸⁷

I mean we know people...my parents didn't...but we knew people that would haul them off to a dump with other animals. I guess it's just what options you think are available to you. I think it's a matter of just options. You don't know that you have that many.⁸⁸

As previously discussed, there are six predominant methods for disposing of an animal carcass in Kentucky which include burial, rendering, composting, incineration, and chemical digestion such as alkaline hydrolysis.⁸⁹ When asked their thoughts on these various methods, many Participants were not aware or had not heard of some of these options. For example, W, a horse owner, said, "I've never heard of composting a carcass before."⁹⁰ D, a farm owner, was shocked to hear that carcasses were

⁸⁴ See e.g., Birtwistle & Moore, *supra* note 48, at 214; Boyd & McConocha, *supra* note 44, at 218; Canning, *supra* note 48, at 327; D. I. Gilliland & K. C. Manning, *When Do Firms Conform to Regulatory Control? The Effect of Control Processes on Compliance and Opportunism*, 21 J.PUB. POL'Y & MARKETING, 319, 328 (2002); Kieren Mayers, et al., *The Use and Disposal of IT Products Within Commercial Markets*, 17 J.BUS. & INDUS. MARKETING 357, 371 (2002).

⁸⁵ Schwarz et al., *supra* note 51, at 41.

⁸⁶ Tanner & Wölfling Kast, *supra* note 47, at 893.

⁸⁷ Interview with H, Horse Owner, in (location redacted) (date redacted)(redacted interview transcript on file with the Researcher).

⁸⁸ *Id.*

⁸⁹ KY. REV. STAT. ANN. § 257.160(1) (West 2011).

⁹⁰ Interview with W, Horse Owner, in (location redacted) (date redacted)(redacted interview transcript on file with the Researcher).

disposed of in landfills, stating "disposal in a landfill... people actually do that?"⁹¹ K, a veterinarian, was not aware of the laws regarding disposal in her home state. She said, "To be honest with you, I'm not sure if you can bury a horse. I think you cannot, but I'd have to check."⁹²

Perhaps even more telling, many respondents were not aware of how their own animal carcasses were disposed of once they were taken away from their farm. S, a farm manager, was asked how the farm he manages disposes of carcasses. He said, "[t]here's a service where a guy comes and picks up horses."⁹³ He was further questioned regarding his knowledge of the disposal process after the carcasses were picked up, to which he responded:

I'm not sure what happens with them after that . . . But, no, I have no idea what happens once it leaves the farm. All I know is it goes in that trailer with the wench and goes somewhere else. I would imagine it...hopefully, it doesn't get used for like dog food or something weird, seriously. I imagine it gets incinerated. But I don't know. Do you know?⁹⁴

Even veterinarians referenced the lack of awareness of what happens to the carcasses. E, a veterinarian, was asked to describe a typical scenario involving a horse owner who must dispose of a carcass. She said:

Well, usually we don't get into the conversation about how the animal is ultimately disposed of. But generally they'll say if we put them down what do I do with them? I can give them a phone number of somebody that will haul them away . . . But he gets them off the client's hands. That's been my primary interest.⁹⁵

E's statement demonstrates the reluctance many people have in discussing a sensitive topic. Owners want the carcasses removed from their property, and do not want to think more about it. An interview with A, another veterinarian, revealed a similar sentiment toward getting carcasses out of the sight of owners or farm managers.

⁹¹ Interview with D, Horse Farm Owner, in (location redacted) (date redacted)(redacted interview transcript on file with the Researcher).

⁹² Interview with K, Veterinarian, in (location redacted) (date redacted) (redacted interview transcript on file with the Researcher).

⁹³ Interview with S, Horse Farm Manager, in (location redacted) (date redacted) (redacted interview transcript on file with the Researcher).

⁹⁴ *Id.*

⁹⁵ Interview with E, Veterinarian, in (location redacted) (date redacted) (redacted interview transcript on file with the Researcher).

You know, right now there are a few guys that are what we call "dead wagons." You call them up and they come and pick up the horse. I think you pay them 150 bucks. It's easy. It's relatively inexpensive. It removes the issue from the farm manager. That's why they have a thriving business.⁹⁶

These findings suggest that people are not aware of the options available to them, and they often do not consider what happens to a carcass after it is removed from their farms. Many people do not want to dwell, preferring to remedy the situation as quickly and conveniently as possible. Author's research suggests that people are not aware of disposal options. Communications with consumers must be improved to raise awareness of (1) the current state of carcass disposal and (2) environmentally sound options available to horse owners.

3. Role of Expertise

The third second-order theme or dimension identified is the role of expertise. Twenty-five out of thirty-four Participants cited their veterinarian as someone whose advice they would seek regarding equine carcass disposal.⁹⁷ Twenty Participants cited the United States Department of Agriculture (USDA) as a trusted source of such advice, and sixteen noted their trust in university research.⁹⁸ The previously cited study on funeral services marketing cites funeral service providers as responsible for providing information and education to consumers regarding options in human disposal.⁹⁹ The authors' study presented in this Article reveals the important role of experts as sources of information regarding disposition of carcasses. For example, farm manager B said, "it's probably some of the older veterinarians who have dealt with both the university equine department, maybe, and diagnostic on an in-depth basis who'd probably have the most experience and knowledge."¹⁰⁰ H, a horse owner, referred generally to the notion that she would rely on professionals with expertise and knowledge to make recommendations on this topic.

Well, in my interest[ed] role I would trust professionals

⁹⁶ Interview with A, Veterinarian, in (location redacted) (date redacted) (redacted interview transcript on file with the Researcher).

⁹⁷ Interviews on file with Researcher.

⁹⁸ Interviews on file with Researcher.

⁹⁹ Schwartz et al., *supra* note 51, at 44.

¹⁰⁰ Interview with B, Farm Manager, in (location redacted) (date redacted) (redacted interview transcript on file with the Researcher).

around me that I've learned stuff from. So for me that would be professionals at LDDC [Lexington Disease Diagnostic Center], somebody like Steve Higgins, who is doing a composting project that's pretty interesting. The vet... I mean people that you know and trust their expertise, I think that's important. So I'd probably do those. I mean the professionals around me that I knew had some kind of expertise or work in this area, and then also my vet.¹⁰¹

Participants cited veterinarians, the USDA, and universities as trusted sources of information. Equine veterinarians are called upon to render advice on the care of both the living and the dead. More equines are euthanized than die of natural causes.¹⁰² As veterinarians are typically called on to euthanize animals, they are often directly involved in the death of animals. Each state has individual laws regarding animal carcass disposal, but there is no formal communication system for distributing such information to animal owners. One possible solution would be creation of a formal control systems aimed at increasing compliance with sustainable behaviors. Another possibility would be to institute informal controls. Gilliland and Manning find informal controls effective where such controls focus on ensuring access to information so that consumers may better comply with regulations.¹⁰³ Veterinarians should be considered a channel of information for encouraging consumers to make more environmentally-minded decisions regarding the disposition of equine carcasses.

E. Discussion of Qualitative Research

Disposal decisions have potential environmental impacts. As the results of this research indicate, there is a general lack of knowledge about available disposal options. Results indicate that decisions regarding carcass disposal are impacted by emotional attachment to the equine, awareness regarding existing disposal options, and the role of experts in disposal decisions. Existing literature on product disposal identifies a need for education to encourage more sustainable behavior, but does not consider products to which humans are emotionally attached. Emotional decisions made upon the death of a loved one are not always based on reason and education, and are often clouded by grief.¹⁰⁴ The disposition of equine

¹⁰¹ Interview with H, *supra* note 90.

¹⁰² U.S. DEPARTMENT AGRICULTURE, DEATHS IN U.S. HORSES, 1997 AND SPRING 1998-SPRING 1999, 2 (2001) (info sheet concerning veterinary services).

¹⁰³ Gilliland & Manning, *supra* note 87, at 328.

¹⁰⁴ Schwartz et al., *supra* note 51, at 41.

carcasses provides a unique opportunity to research sustainable disposition behavior for a product to which people are emotionally attached, and which is potentially harmful to the environment. This qualitative research, along with the study of current literature regarding disposition of potentially harmful products is useful in informing lawmakers. It would behoove lawmakers concerned with this issue to consider the above qualitative research and environmental concerns associated with equine carcass disposal in drafting more effective legislation.

IV. LEGAL AND ENVIRONMENTAL CONSIDERATIONS AND IMPLICATIONS

Both state and federal authorities regulate equine carcass disposal, their chief concern being the impact of various disposal methods on public health and the environment. This section reviews state and federal regulations that directly or indirectly govern animal carcass disposal.

A. State Regulation of Equine Carcass Disposal

1. Nuisance Law and State Police Power

The control state authorities exercise over carcass disposal is founded in the state's police power to regulate nuisances in the interest of public health, welfare, and safety.¹⁰⁵ *Black's Law Dictionary* defines a nuisance as a "condition, activity, or situation (such as a loud noise or foul odor) that interferes with the use or enjoyment of property."¹⁰⁶ It is difficult to imagine a condition more apropos than a rotting animal carcass.¹⁰⁷ The United States Supreme Court held that "government is vested with the responsibility of protecting the health, safety, and welfare of its citizens."¹⁰⁸ This interest in protecting the public is the basis for a government entity's authority to regulate disposal of livestock mortalities. As held by the Supreme Court of New Jersey:

That the transportation through the streets of a city of a dead carcass emitting blood and offensive matter upon the

¹⁰⁵ See *Fertilizing Co. v. Hyde Park*, 97 U.S. 659, 667 (1878).

¹⁰⁶ BLACK'S LAW DICTIONARY 1171 (9th ed. 2009).

¹⁰⁷ See, e.g., *Schoen Bros. v. City of Atlanta*, 25 S.E. 380, 382 (Ga. 1895) (holding that a dead animal necessarily becomes a nuisance of a very offensive and dangerous character unless preventative measures are taken).

¹⁰⁸ *United Haulers Ass'n v. Massachusetts*, 550 U.S. 330, 342 (2007) (citing *Metropolitan Life Ins. Co. v. Massachusetts*, 471 U.S. 724, 756 (1985) ("The States traditionally have had great latitude under their police powers to legislate as to the protection of the lives, limbs, health, comfort, and quiet of all persons." (internal quotation marks omitted))).

pavement is a proper subject matter for municipal regulation by a board constituted by law with the powers to regulate the business of issuing of a permit would seem to be indubitable.¹⁰⁹

However, as Kentucky's highest court has held, an animal does not become a nuisance immediately upon its death, and thus a dead animal is not *per se* a nuisance.¹¹⁰ Moreover, an owner's property rights in a deceased animal do not terminate at the animal's death.¹¹¹ Case law indicates that municipal ordinances and regulations are invalid if they deny the owner of a dead animal the right to dispose of the carcass within a reasonable time after the animal's death.¹¹² As stated by Virginia's highest court:

The doctrine fairly deducible from the authorities is that an ordinance which immediately upon the death of a domestic animal, and before it becomes a nuisance or dangerous to public health, deprives the owner of the property therein, and invests it in the public contractor, is a taking of private property without due process of law, within the meaning of the fourteenth amendment of the Constitution of the United States, and therefore void.¹¹³

Thus, laws regulating the disposal of animal carcasses must balance the property rights of the owner with the government interest in protecting the well-being of its citizens.

Kentucky courts have utilized this balancing test. In *Knauer v. Louisville* the court held a city ordinance unconstitutional where it granted the privilege of removing dead animal carcasses exclusively to a public contractor, and allowed fees that amounted essentially to a confiscation of property.¹¹⁴ In *Meyer v. Jones*, Kentucky's highest court held that "a city ordinance providing for the removal of animal carcasses and fixing charges for removal was void unless it gave the owner of the dead animal the right to remove it, or have it removed, within a prescribed time."¹¹⁵ The court held that a valid ordinance should "give the inhabitants of the city full

¹⁰⁹ *Jersey City v. Foster*, 79 A. 1052, 1053 (N.J. 1911).

¹¹⁰ *Knauer v. Louisville*, 45 S.W. 510, 511 (Ky. 1898); *accord* *Kirk v. McTyeire*, 95 So. 361, 362 (Ala. 1923); *Schoen Bros.*, 25 S.E. at 382; *State v. Morris*, 18 So. 710, 711 (La. 1895); *Kellam v. Newark*, 75 A. 548, 550 (N.J. 1910); *Richmond v. Caruthers*, 50 S.E. 265, 265-66 (Va. 1905).

¹¹¹ *Knauer*, 45 S.W. at 511; *accord* *Morris*, 18 So. at 711; *Whelan v. Daniels*, 143 N.W. 929, 930 (Neb. 1913); *Kellam*, 75 A. at 550.

¹¹² *See, e.g., Campbell v. District of Columbia*, 19 App. D.C. 131, 140 (D.C. Cir. Dec. 4, 1901); *Meyer v. Jones*, 49 S.W. 809, 810 (Ky. 1899).

¹¹³ *Richmond*, 50 S.E. at 266.

¹¹⁴ *Knauer*, 45 S.W. at 511.

¹¹⁵ *Meyer*, 49 S.W. at 809.

protection from the danger of dead animals becoming nuisances” and “fully respect the property rights of the owners of dead animals.”¹¹⁶ In Kentucky, this standard was codified by statute as a forty-eight hour time period for disposal.¹¹⁷ In other jurisdictions, this time period can range from twenty-four¹¹⁸ to seventy-two hours.¹¹⁹

2. The Current State of Unlawful Disposal Statutes

In *Hill v. State of Indiana*, the plaintiff appealed a trial court decision convicting him of twelve counts of Class A misdemeanor cruelty to an animal and one count of Class D felony improper disposal of an animal that has died.¹²⁰ Hill’s neighbors observed underweight horses on Hill’s property without adequate food or water.¹²¹ Unable to contact Hill, the neighbors then reported Hill to the local sheriff’s department, which obtained a warrant to search Hill’s property.¹²² There the officers found emaciated horses and “the decaying carcass of a horse or cow in Hill’s barn.”¹²³ A jury found Hill guilty of the improper disposal charge and twelve counts of cruelty to an animal, sentencing him to 545 days for improper disposal of a dead animal and 365 days for each of the animal cruelty convictions.¹²⁴

On appeal, Hill argued that the trial court lacked sufficient evidence. Specifically, he argued that the state was required and failed to prove that the dead animal’s body *actually* constituted a nuisance.¹²⁵ The court disagreed, quoting Indiana Code Section 15-17-11-20 which provides a “person who owns or cares for an animal that has died from any cause shall dispose of the animal’s body not later than twenty-four (24) hours after knowledge of death *so as not to produce a nuisance*.”¹²⁶ The court rejected Hill’s argument, finding it inconsistent with the legislature’s intent to prevent the spread of disease in animals and protect the public health and welfare of the citizens of Indiana.¹²⁷ “[T]he punishable criminal act here,”

¹¹⁶ *Id.* at 810.

¹¹⁷ KY. REV. STAT. ANN. § 257.160(2) (West 2011).

¹¹⁸ *See, e.g.*, CONN. AGENCIES REGS. § 19-13-B23(b) (2011); GA. CODE ANN. § 4-5-5 (West 2011).

¹¹⁹ *See, e.g.*, IDAHO ADMIN. CODE r. 02.04.17.030 (2011); N.Y. AGRIC. & MKTS. LAW § 377(1) (McKinney 2004).

¹²⁰ *Hill v. State*, No. 01A02-1002-CR-181, 2010 Ind. App. LEXIS 1759, at *6-7 (Ind. Ct. App. Dec. 15, 2010). This formatting is strange- 2010 is in middle of line

¹²¹ *Id.* at *2-3.

¹²² *Id.* at *3.

¹²³ *Id.*

¹²⁴ *Id.* at *6-7 (ordering that animal cruelty sentences be served concurrently with one another, but consecutive to the sentence for improper disposal of a dead animal).

¹²⁵ *Id.* at *7-8.

¹²⁶ *Id.* at *8 (emphasis in original).

¹²⁷ *Id.* at *10-11.

the court stated, "is delay, not the actual occurrence of the feared contingency – a hazard to human and/or animal health."¹²⁸ Evidence in the record demonstrated that the horse had died of strangles, a highly contagious streptococcal infection, and that the horse had been dead for about a year.¹²⁹ The court found this evidence sufficient to support the conviction.¹³⁰

Baxter v. State of Indiana also involved an appeal from a conviction for failure to properly dispose of a dead animal.¹³¹ In *Baxter*, a man was convicted of four counts of failure to properly dispose of a dead animal and twelve counts of Class B misdemeanor neglect of an animal after four dead horses and numerous malnourished horses were found on his property.¹³² The horses "appeared to have been dead at least several days, judging by the flies and maggots covering them and how they lay in the mud."¹³³ The central issue on appeal was the constitutionality of the dead animal disposal statute, which requires a person owning or caring for an animal that dies from any cause to dispose of the body within twenty-four hours after learning of the death by one of the following means: disposal at an approved disposal plant, burial, incarceration, or composting.¹³⁴ The court rejected *Baxter's* argument that the statute at issue was unconstitutionally vague and held that the legislature "clearly delineated that failure to dispose of a dead animal is a crime."¹³⁵

Both *Baxter* and *Hill* contrast with *State v. Hinkle*. This North Carolina case involved two employees of People for the Ethical Treatment of Animals, who were charged with unlawful disposal of dead animals, felony cruelty to animals, obtaining property by false pretenses, second-degree trespass, and littering, after they acquired numerous dogs and cats from animal shelters, euthanized them in the back of their van, and dumped the bodies behind a Piggly Wiggly grocery store.¹³⁶ The state voluntarily dismissed the unlawful disposal charges, as well as one count of second-degree trespass.¹³⁷ The *Hinkle* Court noted that it was "not clear why the State chose to prosecute defendants for littering instead of unlawful

¹²⁸ *Id.* at *11.

¹²⁹ *Id.* at *12.

¹³⁰ *Id.*

¹³¹ *Baxter v. State*, 891 N.E.2d 110, 114 (Ind. Ct. App. 2008).

¹³² *Id.*

¹³³ *Id.* at 113.

¹³⁴ *Id.* at 114 (citing IND. CODE § 15-17-11-20(2011)).

¹³⁵ *Id.* at 115-16.

¹³⁶ *State v. Hinkle*, 659 S.E.2d 34, 35-36 (N.C. Ct. App. 2008).

¹³⁷ *Id.* at 36; see also N.C. GEN. STAT. § 106-403 (2005) ("[i]t is the duty of the owner of domesticated animals that die from any cause and the owner or operator of the premises upon which any domesticated animals die, to bury the animals to a depth of at least three feet beneath the surface of the ground within 24 hours after knowledge of the death of the domesticated animals, or to otherwise dispose of the domesticated animals in a manner approved by the State Veterinarian.").

disposition of dead domesticated animals or second degree trespass.¹³⁸ However, a violation of the North Carolina unlawful disposal statute results only in a Class 2 misdemeanor,¹³⁹ and second-degree trespass is a Class 3 misdemeanor.¹⁴⁰ The statutes that the State proceeded with included felony cruelty to animals, which carries a higher penalty.¹⁴¹ In *Hill*, *Baxter*, and *Hinkle* it is conceivable that state prosecutors proceeded under the statutes carrying the highest penalties.

In at least one case, prosecutors proceeded against defendants on misdemeanor charges for unlawful disposal of animals. In *State v. Larson*, a veterinarian was convicted of fifty counts of misdemeanor animal abuse and fifty counts of misdemeanor failure to dispose of dead animals after the sheriff found approximately 250 dead hogs and numerous malnourished hogs on his property.¹⁴² *Larson* is distinguished from other unlawful disposal cases because here the veterinarian requested a diminished capacity jury instruction regarding whether he had a mental disease or defect that made him incapable of knowing and appreciating the nature, quality, or wrongfulness of his conduct at the time of the alleged offenses.¹⁴³ *Larson* claimed to be "physically unable to dispose of the dead carcasses or to arrange for someone else to do it because he was depressed."¹⁴⁴ The court noted that, under Missouri law, a defendant must demonstrate "(1) that he had a mental disease or defect; and (2) that, as a result of the mental disease or defect, he did not know or appreciate the nature, quality or wrongfulness of his conduct or was incapable of conforming his conduct to the requirements of law."¹⁴⁵ The *Larson* court then held that the defendant's evidence of depression, poor judgment, and inability to make good decisions was not substantial evidence of a mental disease or defect warranting a diminished capacity instruction.¹⁴⁶ The *Larson* case may have particular import in cases where a "hoarder" is charged with unlawful disposal, demonstrating that, at least in Missouri, the burden of establishing a diminished capacity defense is set fairly high.

In March 2010 a Missouri woman was charged with twelve counts of improper disposal of a dead animal, and twelve counts of animal abuse. These charges came after the local sheriff's department found 55 emaciated dogs and twelve dead dogs, including a partially-eaten puppy in a rubber

¹³⁸ N.C. GEN. STAT. § 106-405 (2011).

¹³⁹ N.C. GEN. STAT. § 14-159.13 (2011).

¹⁴⁰ N.C. GEN. STAT. § 14-360 (2011).

¹⁴¹ *Hinkle*, 659 S.E.2d at 36.

¹⁴² *State v. Larson*, 941 S.W.2d 847, 850 (Mo. Ct. App. 1997).

¹⁴³ *Id.* at 854.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.* at 855 (citing *State v. Scott*, 841 S.W.2d 787, 790 (Mo. Ct. App. 1992)).

¹⁴⁶ *Id.* at 855.

container, behind her home.¹⁴⁷ The woman later pled guilty to animal abuse and improper disposal of a dead animal.¹⁴⁸ Unfortunately, cases of large-scale animal mistreatment, neglect, or abuse, are not uncommon. This is especially true in the context of the "unwanted horse" problem. Unlawful disposal statutes can deter such heinous acts by increasing penalties for offenders, providing another avenue for prosecution in addition to the animal abuse statutes that do not carry heavy penalties.

Florida's improper disposal statute was enforced in the recent prosecution of a ring of illegal horse slaughterers. In January, 2011, a Florida man was charged with improper disposal of dead animals after he and two other men were caught with coolers full of freshly slaughtered horse legs.¹⁴⁹ In December, 2010, another man was sentenced to five years imprisonment after he admitted to sneaking into Miami-Dade farms to kill horses for their meat, intending to sell the meat on the black market.¹⁵⁰ This rash of brutal killings spurred the Florida legislature to pass H.B. 765, making it a third degree felony to unlawfully slaughter horses for human consumption.¹⁵¹ Where such laws have not been enacted, unlawful disposal statutes allow states to prosecute these crimes. If violation of an unlawful disposal statute were a felony offense carrying higher penalties, the statute could better serve as a deterrent against black market horse slaughter or other extreme instances of animal abuse.

3. Legal Disposal Options

Horse owners faced with an equine mortality must not only cope with the emotional loss of a horse, but they must also navigate the legal waters surrounding choice of disposal methods. Turning again to this Article's model state, the Kentucky statute governing the disposal of deceased livestock is set forth in full below:

- (1) All carcasses of domestic livestock, poultry, and fish which have died or which have been destroyed on account of any

¹⁴⁷ *Human Society of Missouri Animal Cruelty Task Force Rescues 55 Mistreated Dachshunds and Other Breeds from Unlicensed Breeder in Stone County HUMANE SOC'Y MO.* (Mar. 22, 2010), http://member.hsmo.org/site/PageNavigator/Stone_Cty_Rescue_3_22_10.

¹⁴⁸ *Id.*

¹⁴⁹ Todd Wright, *Man Arrested for Having Bloody Cooler Full of Horse Meat*, NBC MIAMI (Jan. 5, 2011), <http://www.nbcmiami.com/news/local/Man-Arrested-for-having-Bloody-Cooler-Full-of-Horse-Meat-112955459.html>.

¹⁵⁰ Brian Hamacher, *Man Sentenced to Five Years in Horse Slaughters*, NBC MIAMI (Dec. 18, 2010), <http://www.nbcmiami.com/news/local/Man-Sentenced-to-5-Years-in-Horse-Slaughters-112082159.html>.

¹⁵¹ Laura Allen, *FL Gov Signs Horse Protection Law*, ANIMAL LAW COALITION (May 17, 2010), <http://www.animallawcoalition.com/horse-slaughter/article/1165>; see generally FLA. STAT. ANN. § 500.451 (LexisNexis 2011).

disease, except as determined and permitted by the state veterinarian or other representative of the board, shall be disposed of by:

- (a) Complete incineration of the entire carcass and all of its parts and products;
 - (b) Boiling the carcass and all of its parts and products in water or heating it with steam at a temperature above boiling, continuously for two (2) hours or more;
 - (c) Burying the carcass and all of its parts and products in the earth at a point which is never covered with the overflow of ponds or streams and which is not less than one hundred (100) feet distant from any watercourse, sinkhole, well, spring, public highway, residence, or stable. The carcass shall be placed in an opening in the earth at least four (4) feet deep, the abdominal and thoracic cavities opened wide their entire length with a sharp instrument, and the entire carcass covered with two (2) inches of quicklime and at least three (3) feet of earth.
 - (d) Removal of the carcass by a duly-licensed rendering establishment;
 - (e) Deposition of the carcass in a contained landfill approved pursuant to KRS Chapter 224;¹⁵²
 - (f) Composting of the carcass in a facility according to the board's administrative regulations and approved in accordance with KRS Chapter 224;
 - (g) Any combination of the methods set forth in paragraphs (a) to (f) of this subsection; or
 - (h) Any other scientifically-proven method of disposal approved by the board.
- (2) The owner shall dispose of the carcass of domestic livestock, poultry, and fish as provided in subsection (1) of this section, within forty-eight (48) hours after the carcass is found unless the carcass is otherwise preserved in cold storage.
- (3) The Board is authorized to promulgate administrative regulations to implement this section.¹⁵³

¹⁵² KY. REV. STAT. ANN. § 224 (West 2011) (Kentucky Environmental Protection Act).

¹⁵³ KY. REV. STAT. ANN. § 257.160 (West 2011).

The Kentucky statute also establishes penalties for violations. A horse owner who violates a provision of KRS 257.160 "shall be fined not less than one hundred dollars (\$100) nor more than five hundred dollars (\$500) for the first offense. For each subsequent offense, he shall be fined not less than five hundred dollars (\$500) nor more than one thousand dollars (\$1000), or be imprisoned not more than thirty (30) days, or both."¹⁵⁴

Regulation of animal carcass disposal varies greatly from state-to-state. In the following multi-jurisdictional table, the authors set forth the methods of disposal expressly permitted by the statutes or regulations in a sample of twenty states.

| State | Statute or Regulation | Methods Allowed | Time Period |
|------------|----------------------------------|--|-------------------|
| Alabama | Ala. Code § 3-1-28 | Burial; burning | 24 hours |
| California | Cal. Food & Agric. Code § 794.3 | Burial; cremation; rendering | 24 hours |
| Georgia | Ga. Code Ann. § 4-5-5 | Burial; burning; incineration; rendering | 24 hours |
| Idaho | Idaho Admin. Code § 02.04.17.030 | Burial; burning; composting; digestion; decomposition; landfill; rendering | 72 hours |
| Indiana | Ind. Code Ann. § 15.17.11.20 | Burial; composting; disposal plant (rendering); incineration | 24 hours |
| Iowa | Iowa Code § 167.18 | Burial; burning; composting; cooking; licensed disposer (rendering) | "reasonable time" |
| Kansas | Kan. Stat. Ann. § 47-1219 | Burial; delivery to disposal plant / renderer; incineration | 24 hours |
| Kentucky | Ky. Rev. St. Ann. § 257.160 | Boiling; burial; composting; landfill; incineration; rendering | 48 hours |
| Michigan | Mich. Comp. Laws § 287.671 | Burial; burning; composting; delivery to licensed individual | 24 hours |

¹⁵⁴ KY. REV. STAT. ANN. § 257.990(7) (West 2011).

| | | | |
|----------------|-------------------------------|---|---|
| Missouri | Mo. Ann. Stat. § 269.020 | Burial; composting; delivery to licensed individual; landfill; incineration | 24 hours |
| Nebraska | Neb. Rev. Stat. § 54-744 | Burial; composting; incineration; landfill; rendering | 36 hours |
| New York | N.Y. Agric. & Mkts. Law § 377 | Burial or other sanitary manner | 72 hours |
| North Carolina | N.C. Gen. Stat. § 106-403 | Burial or other manner approved by State Vet | 24 hours |
| Ohio | Ohio Rev. Code § 941.14 | Burial; burning; composting; rendering | 24 hours |
| Pennsylvania | 3 Pa. Cons. Stat. § 2352 | Burial; composting; fermenting; incineration; rendering | 48 hours |
| Utah | Utah Code Ann. § 4-26-1 | Burial; other approved method | 48 hours |
| Washington | Wash. Admin. Code § 16-25-025 | Burial; composting; digestion; incineration; landfill; natural decomposition; rendering | 72 hours |
| West Virginia | W. Va. Code § 19-9-34 | Boiling; burial; composting; cremation; landfill; rendering | 24 hours |
| Wisconsin | Wis. Stat. Ann. § 95.50 | Cannot leave dead animal exposed | 24 hours, except 48 hours Dec. to March |
| Wyoming | Wyo. Stat. Ann. § 35-10-104 | Burial; removal to location over 1/2 mile from human habitation | 48 hours |

Table 2. Multi-Jurisdictional Table

The state-to-state variance in permitted disposal methods is apparent even in this select sample of jurisdictions. Additionally, local authorities regulate animal disposal in many states.¹⁵⁵ State laws may also allow a regulatory entity to approve other methods of disposal.¹⁵⁶ Table 2 is at best a summary of regulations governing the disposal of equine mortalities in the United States, and illustrates the lack of uniformity contributing to the general lack of awareness of sustainable disposal methods.

¹⁵⁵ E.g., N.C. GEN. STAT. ANN. §§ 106-403 (LexisNexis 2011) (providing authority for the governing bodies of municipalities to regulate); UTAH CODE ANN. § 4-26-1 (LexisNexis 2011) (providing authority for cities, counties or towns to regulate).

¹⁵⁶ E.g., KY. REV. STAT. ANN. § 257.160(1)(h) (LexisNexis 2011) (providing authority for the Kentucky Board of Agriculture to regulate).

Of the twenty states depicted in Table 2, nineteen states have a statute or regulation that expressly allows disposal of livestock carcasses by burial. Fifteen of the twenty states sampled expressly allow disposal by burning, incineration, or cremation. Fourteen of the twenty states sampled expressly allow carcass disposal by rendering or delivery to a disposal plant. Composting is a lawful disposal method in eleven of the twenty states. The less common methods expressly permitted in the sample states include boiling or cooking, landfills, fermenting, digestion or alkaline hydrolysis, and natural decomposition.

As indicated by Table 1, which compares the environmental impact of various animal carcass disposal methods, environmentally-sustainable disposal methods include rendering and composting. Rendered byproducts can be used as fertilizer or animal feed, and composted material can be used as a soil amendment.¹⁵⁷ In essence, rendering and composting are forms of "recycling" dead animal carcasses. Another option is Alkaline hydrolysis, which has sustainable qualities, but is a new technology not widely available at this time.¹⁵⁸ By contrast, disposal by burial or disposal in landfills does not result in a useable end-product and can result in ground or water contamination.¹⁵⁹ Similarly, disposal by incineration does not result in a useable byproduct and can result in air pollution.¹⁶⁰ Information in Tables 1 and Table 2 shows that within the twenty-state survey, the most common disposal methods, burial and incineration, are two of the least environmentally-sustainable methods.

B. Federal Regulation of Livestock Carcass Disposal

1. Dormant Commerce Clause

State regulation of the disposal and transport of livestock carcasses necessarily implicates the Commerce Clause of the U.S. Constitution.¹⁶¹ The Commerce Clause gives the federal government the power to regulate commerce "among the several states."¹⁶² The Supreme Court has held that "[a]lthough the Constitution does not in terms limit the power of States to regulate commerce, we have long interpreted the Commerce Clause as an

¹⁵⁷ Ellis, *supra* note 27, at 33.

¹⁵⁸ *Id.* at 35.

¹⁵⁹ *Id.* at 26.

¹⁶⁰ *Id.* at 30.

¹⁶¹ See, e.g., KY. REV. STAT. ANN. § 263.020 (West 2011) (requiring persons engaged in the business of transporting animal bodies or parts of bodies to be licensed).

¹⁶² U.S. CONST. art. I, § 8, cl. 3.

implicit restraint on state authority, even in the absence of a conflicting federal statute.”¹⁶³

In the most notable case involving disposal of a dead horse, *Clason v. State of Indiana*, the U.S. Supreme Court affirmed an Indiana court’s ruling upholding an Indiana statute allowing only licensed operators or reduction plants to transport large dead animals within the state.¹⁶⁴ The statute in question required owners to, within twenty-four hours, bury or burn the carcasses of large dead animals on their property, or deliver them to a representative of a state licensed disposal plant.¹⁶⁵ The Court ruled, “[i]t seems plain enough that the challenged statute is a sanitary and health measure not intended to cause discrimination against or to burden interstate commerce [i]ts purpose is to promote the health of the people of the state in feasible ways.”¹⁶⁶ Further:

[T]he state has not recognized dead horses as legitimate articles of intrastate commerce. It permits them to be sold only to licensed operators who must transport them immediately under strict sanitary regulations for prompt delivery to a licensed plant there to be rendered innocuous without delay by prescribed methods. All of this is part of a workable scheme to secure prompt removal of decaying carcasses and thus protect against obvious evils. . . . That any real burden upon commerce which the state is not free to inhibit will result from the challenged statute seems impossible.¹⁶⁷

As illustrated, the carcasses of dead horses are generally not regarded as articles of commerce and states are given considerable latitude in enacting regulations.

2. Environmental Protection Laws

While state regulation of animal carcass disposal originated in the law of nuisance, modern statutes and regulations governing disposal of animal carcasses are frequently rooted in state environmental protection laws. Federal environmental statutes, like the Clean Water Act for example,

¹⁶³ *United Haulers Ass’n v. Herkimer Solid Waste Mgmt. Auth.*, 550 U.S. 330, 338 (citations omitted).

¹⁶⁴ *Clason v. Indiana*, 306 U.S. 439, 440 (1939) (U.S. Supreme Court heard an earlier case concerning dead horses in *Fidelity Mut. Life Ass’n. v. Mettler*, 185 U.S. 308, 317 (1902), but this case did not concern disposal of dead horses).

¹⁶⁵ *Clason*, 306 U.S. at 442.

¹⁶⁶ *Id.* at 443.

¹⁶⁷ *Id.* at 443-44.

provide that states may implement laws and regulations to ensure compliance with federal environmental protection standards.¹⁶⁸ For instance, in Kentucky, all solid waste sites and facilities must comply with the Federal Endangered Species Act of 1973 and the Federal Clean Water Act.¹⁶⁹ As carcass disposal may result in environmental impacts, disposal may result in violation of federal environmental protection statutes.

The Clean Water Act is a frequently used environmental law for prosecution of improper disposal of carcasses. A March 29, 2002 news release from the Environmental Protection Agency details the prosecution of a California cattle ranch that dumped cattle carcasses into the creeks and tributaries running across the ranch's land.¹⁷⁰ As a result these Clean Water Act violations, the ranch owner and ranch foreman were sentenced to pay a \$1,700,000 fine, \$700,000 of which would be reduced due to a civil settlement that the ranch had already paid to the state of California.¹⁷¹ The owner was sentenced to serve six months of home detention as part of a one year probation, and the foreman was sentenced to two years probation and fined \$3,000.¹⁷²

Other federal laws indirectly regulating carcass disposal include statutes enacted to protect wildlife. For instance, in 1999, a veterinarian and a rancher euthanized two mules using sodium pentobarbital, and then left the carcasses to rot on the rancher's land.¹⁷³ Five golden eagles and two bald eagles died after feeding on the carcasses.¹⁷⁴ Both the rancher and the veterinarian were fined \$10,000 for violations of the Endangered Species Act.¹⁷⁵ Of the total amount, \$18,000 was to be used by the National Fish and Wildlife Fund to "help educate livestock veterinarians and ranchers about the hazards to wildlife of poisoned animal carcasses."¹⁷⁶ According to a 2002 report from the United States Fish and Wildlife Service, a federal investigation was conducted after at least three eagles died near the carcass of a horse that had been euthanized by a vet using sodium pentobarbital.¹⁷⁷ The vet faced civil penalties.¹⁷⁸ Other federal statutes that may be violated

¹⁶⁸ 33 U.S.C.A. § 1251(b) (West 2011).

¹⁶⁹ 401 KY. ADMIN. REGS. 30:031 §§3-4 (2011).

¹⁷⁰ News Release, Luke C. Hester, Env'tl. Prot. Agency, California Ranch, Owner, Foreman Sentenced, (Mar. 29, 2002), available at <http://yosemite.epa.gov/opa/admpress.nsf/b1ab9f485b098972852562e7004dc686/331ce6215435941f85256b8b00774468?OpenDocument>.

¹⁷¹ *Id.*

¹⁷² *Id.*

¹⁷³ Cat Lazaroff, *Euthanized Animals Can Kill Wildlife*, ENV'T NEWS SERVICE (Oct. 10, 2002), <http://www.ens-newswire.com/ens/oct2002/2002-10-10-06.html>.

¹⁷⁴ *Id.*

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

¹⁷⁷ U.S. FISH AND WILDLIFE SERVICE, OFFICE OF LAW ENFORCEMENT: FY 2002 ANNUAL REPORT 48, available at <http://www.fws.gov/le/pdf/Files/FinalAnnualReportFY2002.pdf> (last visited Nov. 5, 2011).

¹⁷⁸ *Id.*

in similar cases include the Migratory Bird Treaty Act¹⁷⁹ and the Bald and Golden Eagle Protection Act.¹⁸⁰

Compliance with state laws most likely will assure compliance with federal laws. Of the twenty states depicted in Table 2, only three permit the disposal of animal carcasses by natural decomposition or removal of the carcass to a remote location.¹⁸¹ However, compliance with state law itself can prove elusive where horse owners are unaware of their legal disposal options or the environmental impact of their choices.

3. *Federal Trade Commission Act*

The Federal Trade Commission (FTC) publishes Environmental Marketing Guides and Green Guides, which are administrative interpretations of how the FTC applies Section 5 of the Federal Trade Commission Act (FTC Act) to environmental or green marketing claims.¹⁸² The Green Guides "apply to any claim, express or implied, about the environmental attributes of a product, package or service in connection with the sale, offering for sale or marketing of the product, package or service for personal, family or household use, or for commercial, institutional or industrial use."¹⁸³ The FTC Act and the Green Guides provide an additional layer of federal law that must be taken into consideration by an individual interested in marketing a sustainable method of disposing equine carcasses.

V. HOW INFORMATION IS CURRENTLY DISSEMINATED AND AUTHORS' RECOMMENDATIONS

A. *Veterinary*

Based on the interviews conducted, equine veterinarians indicated that they lack training on specifically how to advise equine owners regarding the disposition of equine carcasses. Veterinarians typically advise clients of the most convenient option for disposition, and then give clients the phone number of an equine carcass removal service. Owners and veterinarians indicated that there is practically no discussion of what will happen to that carcass once it is removed from the property.

¹⁷⁹ Migratory Bird Treaty Act, 16 U.S.C. §§ 703-712 (2011).

¹⁸⁰ Bald and Golden Eagle Protection Act, 16 U.S.C. § 668 (2011).

¹⁸¹ IDAHO ADMIN. CODE r. 02.04.17.030 (2011); WASH. ADMIN. CODE § 16-25-025 (2011); WYO. STAT. ANN. § 35-10-104 (2011).

¹⁸² E.g., *Complying with the Environmental Marketing Guides*, BUREAU OF CONSUMER PROTECTION (May 2000), <http://business.ftc.gov/documents/bus42-complying-environmental-marketing-guides>.

¹⁸³ *Id.*

The American Association of Equine Practitioners (AAEP) and the American Veterinary Medical Association (AVMA), two of the major national associations for veterinarians, both offer guidelines for carcass disposal. A recent publication from the AAEP outlining topics related to equine death and carcass disposal briefly mentions the potential environmental impact of various disposal options, but makes no recommendations regarding selection based on these criteria.¹⁸⁴ It is left to the reader to decide if the information is pertinent. Further, this report is not available to the general public. The AVMA offers guidelines for euthanasia, but only makes brief mention of carcass disposal, suggesting that "euthanasia be performed in accordance with applicable federal, state, and local laws governing drug acquisition and storage, occupational safety, and methods used for euthanasia and disposal of animals."¹⁸⁵ The AVMA offers a policy statement on their website advocating for "safe and environmentally responsible disposition of animal carcasses."¹⁸⁶ Unfortunately there is no further information available regarding how veterinarians might make more environmentally responsible decisions.

1. Recommendations

The Authors recommend that veterinarian education be more thorough and include information regarding the environmental impact of carcass disposal methods. The AVMA should provide thorough "best practices" or policy statements regarding disposal options. While some horses die due to old age or disease, often veterinarians are consulted by horse owners regarding when it is time to step in and end life. Veterinarians must be aware of the intense emotional experience that this decision often is to horse owners. As evidenced by the qualitative study, the emotional attachment that an owner has for their horse can influence their chosen disposal method. Veterinarians must be prepared to provide information and advice to horse owners that will comply with the owner's emotional needs to honor the horse, while also guiding the owner toward making an environmentally responsible decision. Veterinarians could look to the human green burial industry for examples of disposal options that are sustainable yet also honor their loved one.¹⁸⁷ Green burials are promoted as being an environmentally friendly alternative to traditional burial, which allows bodies to naturally decompose without the use of embalming fluid or

¹⁸⁴ Lenz, *supra* note 25, at 193.

¹⁸⁵ *AVMA Guidelines on Euthanasia*, AM. VETERINARY MED. ASS'N 4 (2007) available at www.avma.org/issues/animal_welfare/euthanasia.pdf.

¹⁸⁶ *AVMA Policy: Appropriate Animal Carcass Disposal*, AM. VETERINARY MED. ASS'N (Nov. 2009), http://www.avma.org/issues/policy/animal_carcass_disposal.asp.

¹⁸⁷ See GREEN BURIALS, <http://www.greenburials.org> (last updated Sep. 17, 2008).

concrete burial vaults.¹⁸⁸ Instead of expensive, resource-intensive headstones and manicured cemetery lawns, graves may be replaced with trees to naturally mark the burial site.¹⁸⁹ A similar idea could be applied to the disposition of equine mortalities, where horse owners are encouraged to commemorate their loss with a natural memorial.

B. Industry

Research studies and publications from higher education institutions such as the University of Kentucky College of Agriculture could provide solutions to the problem of equine carcass disposal.¹⁹⁰ Scientists from the departments of Biosystems and Agricultural Engineering, and Agriculture and Natural Resources, published guidelines for those who wish to compost animal carcasses in a method consistent with current Kentucky laws and regulation.¹⁹¹ This information is easily accessible over the internet for public viewing. In 2010 there was a marked increase in the number of permits issued for composting animal mortalities in Kentucky.¹⁹² A report from LEX18.com indicates that a total of fourteen farmers or groups hold the necessary permits from the Kentucky veterinarian's office.¹⁹³ This news article, which was syndicated by the Associated Press and appeared in several outlets nationwide, was the only mention the authors can find in the mainstream media regarding the University of Kentucky composting project.

In addition to the University of Kentucky, other land-grant agricultural schools provide information regarding disposition of livestock mortalities. Land-grant universities often work in connection with their representative state Extension Offices. For example, Virginia Tech, in cooperation with the Virginia Cooperative Extension, offers a publication entitled *On Farm Mortality Disposal Options for Livestock Producers*.¹⁹⁴ Oregon State University, along with the Coos County Extension Service, has a section on their website entitled *Disposal of Animal Mortality and*

¹⁸⁸ *Id.*

¹⁸⁹ See Earth Talk, *Eco-Afterlife: Green Burial Options*, SCI. AM. (Sept. 5, 2008), <http://www.scientificamerican.com/article.cfm?id=eco-afterlife-green-burial>.

¹⁹⁰ See STEVE HIGGINS ET AL., U. KY. C. AGRIC. COOP. EXTENSION SERV., ID-166, ON-FARM COMPOSTING OF ANIMAL MORTALITIES (2011), available at <http://www.ca.uky.edu/agc/pubs/id/id166/id166.pdf>.

¹⁹¹ *Id.* at 1.

¹⁹² *Composting Dead Animals Growing Trend in Kentucky*, LEX18.COM (Dec. 25, 2010), <http://www.lex18.com/news/composting-dead-animals-growing-trend-in-kentucky>.

¹⁹³ *Id.*

¹⁹⁴ VA. COOP. EXTENSION, ON FARM MORTALITY DISPOSAL OPTIONS FOR LIVESTOCK PRODUCERS (2009), available at <http://pubs.ext.vt.edu/2909/2909-1412/2909-1412.pdf>.

Byproducts.¹⁹⁵ Finally, the University of Arkansas Division of Agriculture Cooperative Extension Service provides burial guidelines for the disposition of large animals.¹⁹⁶

1. Recommendations

In general, institutions of higher education, in connection with their local extension agencies, are doing a sufficient job of providing information to the community. The information regarding current options and the latest research-related findings are available for any consumer to access on their respective websites. This is an important avenue of information for those who seek it out.

C. Government

Government agencies are an additional source of information regarding the disposition of animal carcasses. State agencies such as the Kentucky Farm Bureau issue statements on topics including disposition of animal carcasses. A recent story on the Kentucky Farm Bureau website gave consumers an update on their options for carcass disposition and outlined current opportunities and challenges regarding the decision.¹⁹⁷

Federal government entities, such as the USDA currently provide inadequate guidance to horse owners on disposal methods for equine mortalities. The USDA's National Agricultural Library published an online bibliography of scientific articles, books, and conference proceedings dealing with the disposal of dead production animals.¹⁹⁸ The bibliography's utility is compromised as it is difficult to navigate and does not actually direct the reader to the articles.¹⁹⁹ In 2006, the USDA joined with several state regulatory entities and universities to present a National Symposium on Carcass Disposal.²⁰⁰ In 2009, the USDA again partnered with state

¹⁹⁵ Mike Gamroth et al., *Disposal of Animal Mortality and Byproducts*, OR. ST. U. EXTENSION SERVICE – COOS COUNTY, <http://extension.oregonstate.edu/coos/agriculture/DeadAnimalDisposal> (last updated Sept. 2006).

¹⁹⁶ KARL VANDEVENDER, UNIV. OF ARK. DIV. OF AGRIC. COOP. EXTENSION SERV., GUIDELINES FOR LARGE DEAD ANIMAL DISPOSAL BY BURIAL (2006), available at http://www.aragriculture.org/disaster/biosecurity/large_dead_animal_disposals.pdf.

¹⁹⁷ Walt Reichert, *Farmers, Governments Scramble to Deal with Dead Animal Removal*, KENTUCKY FARM BUREAU (2011), <https://www.kyfb.com/news/?search=animal&C=2260&I=8466>.

¹⁹⁸ JEAN LARSON, ANIMAL WELFARE INFO. CTR., DISPOSAL OF DEAD PRODUCTION ANIMALS: 1988–2006, (2003, last updated 2006) <http://www.nal.usda.gov/awic/pubs/carcass.htm>.

¹⁹⁹ See *id.*

²⁰⁰ USDA Co-Sponsors National Symposium on Carcass Disposal, U.S. DEPARTMENT AGRIC., ANIMAL & PLANT HEALTH INSPECTION SERVICE (Nov. 1, 2006), <http://www.aphis.usda.gov/newsroom/content/2006/11/carcassym.shtml> (symposium was cosponsored by the Maine Compost Team, the Cornell Waste Management Institute, the Iowa State Cooperative Extension, the National Center for Foreign Animal and Zoonotic Disease Defense at Texas A & M, the North Carolina Department of Agriculture, the Penn State Cooperative Extension, USDA Animal and

agriculture departments and universities to present an International Symposium on Management of Animal Carcasses, Tissue & Related Byproducts at the University of California, Davis.²⁰¹ Additionally, the USDA has issued Operational Guidelines for carcass disposal.²⁰²

1. Recommendations

The resources available through the USDA do not provide adequate state-by-state guidance. The authors recommend government take a more active role in promoting sustainable decisions regarding the disposition of potentially hazardous waste, including equine carcasses. A study funded by the United States EPA found positive results for decreasing the output of household hazardous waste via a holistic education program targeted at citizens.²⁰³ The Food and Drug Administration's Center for Veterinary Medicine should offer both consumers and veterinarians a statement of proper protocol and best practices for disposition of mortalities, especially in cases of euthanasia by pentobarbital, where improper disposal poses a particularly immediate threat.

D. Where the Law Should Go from Here: A Model Statute

1. Formulation of the Model Statute

A crucial step in the process of promoting sustainable disposal methods for equine mortalities is the attainment of a greater degree of nationwide regulatory uniformity. The promulgation of model rules proves to be a successful method of achieving uniformity in state legislation and regulations. One successful example of state implementation and adoption of model rules is the Model Rules of Professional Conduct, which establishes rules for the professional conduct of attorneys.²⁰⁴ These Model Rules have since been adopted, in some form, in every state but California.²⁰⁵ Similarly, the Association of Racing Commissioners

Plant Health Inspection Services, USDA Agricultural Research Service, EPA, and the Friends of Agricultural Research - Beltsville).

²⁰¹ *Carcass Disposal Conference Turns up Expertise*, U. CAL. DAVIS SCH. VETERINARY MED., <http://www.vetmed.ucdavis.edu/whatsnew/article2.cfm?id=2060> (last visited Nov. 5, 2011).

²⁰² VETERINARY SERVS., U.S. DEP'T OF AGRIC., OPERATIONAL GUIDELINES: DISPOSAL (2005), available at http://www.aphis.usda.gov/emergency_response/tools/on-site/htdocs/images/naheims_disposal.pdf.

²⁰³ CAROL M. WERNER, U.S. ENVTL. PROT. AGENCY, PROMOTING PROPER USE OF A HOUSEHOLD HAZARDOUS WASTE FACILITY: A SYSTEM APPROACH (2001), available at <http://cfpub.epa.gov/ncer/abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/732/report/F>.

²⁰⁴ *ABA Model Rules of Professional Conduct*, CENTER FOR PROF. RESP., http://www.americanbar.org/groupr/professional_responsibility/pubpublicati/model_rules_of_professipr_of_conduct.html (last visited Oct. 7, 2011).

²⁰⁵ *Id.*

International (RCI), formed in 1934 and later renamed the National Association of State Racing Commissions, promotes uniformity among horse racing jurisdictions through reciprocity and uniform rules and practices.²⁰⁶ RCI's regular membership is composed of forty-four jurisdictions and has associate members around the world.²⁰⁷

The authors formulated a model state carcass disposal statute, which was informed by: (1) the current state of both federal and state law and the direction in which the authors believe the law should go and (2) the results of the qualitative research conducted for this article, namely awareness, emotional attachment, and the role of expertise.

In the interest of protecting the environment, compliance with a model state statute must ensure compliance with federal law. As previously explained, violations of federal environmental and animal protection laws can result in significant civil penalties.²⁰⁸ Heavier penalties for violations of disposal laws can be used to deter threats to public health, as well as threats to animal neglect and abuse.²⁰⁹ Specifically, where violation of an unlawful disposal statute is a felony offense, prosecutors have another avenue to pursue individuals whose actions result in the death of an animal. This is especially helpful where prosecutors lack evidence to determine whether the animal died as a result of abuse or neglect. Establishing a *mens rea* element within the statute will protect those who unintentionally violate the law, while heavily penalizing those who knowingly or intentionally violate the law.

The model carcass disposal statute takes into account three qualitative factors that underlie the consumers' disposal decisions: awareness of disposal options, emotional attachment, and the role of expertise. Model statutes can lead to uniformity between states, which will contribute to consumers' awareness of legal options, including environmentally sustainable disposal options. Second, a model statute should acknowledge the role of emotional attachment in addition to embracing more sustainable disposal options. This is accomplished by including disposal methods such as burial, subject to some environmental restrictions. Third, a model statute should acknowledge the role of expertise by allowing the state veterinarian or other representative of the Board of Agriculture to approve exceptions to the statute and to approve other scientifically-proven methods of disposal.

²⁰⁶ *About Us*, ASS'N RACING COMMISSIONERS INT'L, <http://www.arci.com/about.html> (last visited Nov. 5, 2011).

²⁰⁷ *Id.*

²⁰⁸ *See infra* Section V(B).

²⁰⁹ *See infra* Section V(A).

2. *The Model Statute*

The following model statute is modeled heavily on the disposal statutes of both Kentucky and Indiana.²¹⁰

Model Statute

- (1) All carcasses of domestic livestock, poultry, and fish which have died or which have been destroyed on account of any disease, except as determined and permitted by the state veterinarian or other representative of the Board of Agriculture, shall be disposed of by:
 - (a) Complete incineration of the entire carcass and all of its parts and products;
 - (b) Boiling the carcass and all of its parts and products in water or heating it with steam at a temperature above boiling, continuously for two (2) hours or more;
 - (c) Burying the carcass and all of its parts and products in the earth at a point which is never covered with the overflow of ponds or streams and which is not less than one hundred (100) feet distant from any watercourse, sinkhole, well, spring, public highway, residence, or stable. The carcass shall be placed in an opening in the earth at least four (4) feet deep, the abdominal and thoracic cavities opened wide their entire length with a sharp instrument, and the entire carcass covered with two (2) inches of quicklime and at least three (3) feet of earth.
 - (d) Removal of the carcass by a duly-licensed rendering establishment;
 - (e) Deposition of the carcass in a contained landfill approved pursuant to the State's Solid Waste Disposal Act;
 - (f) Composting of the carcass in a facility according to the board's administrative regulations and approved in accordance with the State's Environmental Protection Act;
 - (g) Any combination of the methods set forth in paragraphs (a) to (f) of this subsection; or

²¹⁰ See KY. REV. STAT. ANN. § 257.160(1) (West 2011); IND. CODE § 15-17-18-9 (2011) (providing the basis for this model statute).

- (h) Any other scientifically-proven method of disposal approved by the Board.
- (2) The owner shall dispose of the carcass of domestic livestock, poultry, and fish as provided in subsection (1) of this section, within forty-eight (48) hours after the carcass is found unless the carcass is otherwise preserved in cold storage.
- (3) The Board is authorized to promulgate administrative regulations to implement this section.
- (4) Penalties:
 - (a) A person who knowingly or intentionally violates or fails to comply with this article commits a Class D felony.
 - (b) A person who knowingly or intentionally violates or fails to comply with a rule adopted under this article commits a Class A misdemeanor.

3. *Promulgation*

The ideal entity to promulgate model rules governing the disposal of livestock carcasses is the National Association of State Departments of Agriculture (NASDA). Founded in 1915, NASDA "represent[s] the state departments of agriculture in the development, implementation, and communication of sound public policy and programs which support and promote the American agricultural industry, while protecting consumers and the environment."²¹¹

NASDA has issued comprehensive policy statements dealing with conservation, land management, animal health, and other agricultural issues. Section 1.2 of NASDA's Animal Health Issues Policy Statement addresses the disposal of animal carcasses.

NASDA supports the development of a national coordinated carcass and SRM [Specified Risk Material] disposal / utilization plan / guidance that will enable states to be better prepared to address emergency and routine livestock disposal while protecting both public health and the environment.

....

²¹¹ About NASDA, NAT'L ASS'N ST. DEPARTMENTS AGRIC., <http://www.nasda.org/cms/7192.aspx> (last visited Nov. 3, 2011).

NASDA will work to formulate and gain approval from all agriculture and environmental agencies of appropriate protocols for permit sanitary carcass disposal; to provide effective systems of identification; to promulgate needed authority in model language; to authorize needed resources and laboratory and diagnostics capacities; and to effectively incorporate interagency communication agreements.²¹²

Indeed, the promulgation of such model rules would provide state legislatures and regulatory bodies with rules that could be tailored to the unique circumstances and policy preferences of each state, without the need to reinvent the wheel. Well-drafted model rules could also ensure compliance with federal environmental and animal protection laws. Uniform laws expressly permitting sustainable methods of equine mortality disposal are essential in the process of raising national awareness of sustainable methods.

VI. CONCLUSION

The Commonwealth of Kentucky, known as the Horse Capital of the World, is home to storied horse farms, Thoroughbred and Standardbred race tracks, the Kentucky Horse Park, and a great number of horses. Each year, many of these animals will meet the end of their life, and some may pose a potential environmental risk through contamination with disease or drugs. Death is a sensitive topic and one that people do not wish to confront unless absolutely necessary. However, compliance with current law is mandatory, and more sustainable disposition practices should be encouraged in the interest of protecting wildlife and the environment. This paper utilized a qualitative study to assess the current awareness of individuals involved in the equine industry regarding topics related to the disposition of equine carcasses. The study concluded that there are three dimensions underlying the decision-making related to this topic: emotional attachment, awareness, and the role of expertise. The results of this study were then compared with current law, and recommendations for a more effective model statute are proposed. Policy makers must find innovative ways to ensure that sustainable disposal options are available to consumers, and provide horse owners with cogent information, allowing them to make more environmentally sustainable choices consistent with current law.

²¹² 1.2 *Foreign and Domestic Animal Health Issues*, NAT'L ASS'N ST. DEPARTMENTS AGRIC., <http://www.nasda.org/cms/7196/9901/9283.aspx> (last updated on Sept. 20, 2011).