

PERFORMANCE AUDIT
ANIMAL CARE AND CONTROL



King County

Presented to
the Metropolitan King County Council
Committee of the Whole
by the
County Auditor's Office

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King County

Metropolitan King County Council

King County Auditor's Office

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MEMORANDUM

DATE: October 26, 2009

TO: Metropolitan King County Councilmembers

FROM: Cheryle A. Broom, ^{CB} County Auditor

SUBJECT: Animal Care and Control Performance Audit

The attached Animal Care and Control Performance Audit was mandated by King County Council Ordinance 16078, in response to concerns about King County Animal Care and Control (ACC) shelter services and data reliability. The overall audit objective was to determine the extent to which the existing data systems, policies, and procedures are appropriately used to manage and carry out shelter operations, improve performance, and promote transparency and accountability. Our overall findings are:

- Despite a number of ACC efforts to improve animal care and lower euthanasia rates, we found gaps between ACC's population monitoring and management activities and recommended practices. Without effective systems and organizational support for important animal flow activities, such gaps can result in delayed specialized care for animals with behavior or health problems that can negatively affect animal health.
- ACC's data system, Chameleon, was implemented without sufficient technical support and IT security controls. Technical resources are not being used to their full capability and the system is not adequately safeguarded against misuse or abuse. Improved controls and system oversight are needed in a number of areas to improve data consistency, accuracy, and completeness and to ensure data is reliable as a precise measure of shelter performance.
- Inconsistent leadership, shifts in management direction, and sustained organizational uncertainty have limited ACC's ability to make needed improvements in population monitoring and management and to use technology effectively to improve shelter operations. These factors have also contributed to delays in completing significant projects as well as some confusion about priorities and practices among ACC staff.

The audit provides 13 recommendations and recognizes a number of recent efforts underway at ACC. Prior to providing us with his formal response, the County Executive announced his proposal to discontinue providing animal sheltering and control services in King County effective June 2010. Additionally, due to concerns about potential flooding, the executive is closing the Kent shelter facility on November 1, 2009. While we understand these are significant changes proposed by the executive, until a solution is adopted, the county still will be providing some

form of animal control and sheltering services. The audit recommendations are focused on improving and aligning activities and resources regardless of the model of animal care and control service used or supported by the county. The executive concurs with the findings and recommendations.

The King County Auditor's Office sincerely appreciates the cooperation received from the management and staff of the Records and Licensing Services Division and Animal Care and Control, and faculty from the University of California Davis Koret Shelter Medicine Program, who worked with us on this audit.

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EXECUTIVE SUMMARY

Introduction

This performance audit of King County Animal Care and Control (ACC) was mandated by the King County Council in response to concerns about ACC shelter services and data reliability. The scope of the audit was to determine the extent to which the existing data systems, policies, and procedures are appropriately used to manage and carry out shelter operations, improve performance, and promote transparency and accountability.

The audit identified several areas in which ACC can improve its management of shelter operations and the shelter's data system (Chameleon). In particular, ACC needs to develop and implement policies, procedures, and supervisory controls to improve its monitoring and management of the shelter's animal population. Monitoring can be improved by daily evaluations of population dynamics, including the capacity of housing and critical services such as foster care and animal rescue. ACC also needs to improve technical support and oversight for Chameleon in order to ensure the data system is safeguarded from misuse and is being used to its fullest capability to facilitate shelter operations. Moreover, strengthening current supervision practices and information technology controls can help ACC improve the accountability and transparency of shelter operations and ACC's reports on shelter performance.

We engaged the University of California Davis (UC Davis) Koret Shelter Medicine Program, to provide a summary of performance metrics and measures that can be used to monitor shelter population dynamics, explain shelter performance, and improve the alignment of resources. We also engaged an expert from Tufts University, Cummings School of Veterinary Medicine, to review ACC's euthanasia procedures, controls, and reporting.

The findings of that work will be published by our office fall 2009.

While the audit proposes recommendations for improvement, it also identifies areas in which ACC has recently made changes aimed at improving performance and the environment at the shelters. These include the expanded off-site placement program to increase the number of off-site adoptions, improved partnerships with feral cat programs to divert feral cats from the shelters and increase live outcomes for feral cats, strengthened cleaning protocols for deep-cleaning of dog runs, and installation of portable buildings at the Kent shelter to increase the space available for housing homeless cats and to create rooms where adopters can meet and play with individual animals. These activities, along with opening the Kent shelter seven days a week, have helped provide more live release options for animals that enter ACC's system.

Subsequent to completion of our audit fieldwork, on September 24, 2009 the King County Executive announced plans to close the animal shelters in November 2009 and discontinue King County's animal control services effective June 2010.

Background

King County's Animal Care and Control (ACC) program is within the Records and Licensing Services division of the Department of Executive Services. ACC provides animal shelter, pet licensing, and law enforcement field services throughout King County. ACC's service area includes unincorporated King County, 32 cities that contract for shelter and law enforcement services and two cities that contract for shelter services only. Animal Care and Control's Pet Licensing program administers licenses for cats and dogs and educates citizens about the benefits of licensure. Officers in the Field Services program respond to complaints of vicious animal and bites; investigate

animal cruelty cases; pick up injured animals, stray dogs, owner released pets, and deceased animals; respond to barking dog complaints; and provide assistance to police officers when requested. The Field Services program operates seven days a week and officers are on call for after-hours emergencies. Field officers also provide coverage in the animal shelters when necessary. This audit focused solely on ACC's shelter operations.

Our findings and recommendations are organized into three chapters: Population Management and Monitoring Animal Flow; Data System Management; and Organizational Success and Performance Metrics. The following sections summarize the contents of those chapters. Our review of internal controls focused on controls related to the flow of animals through the shelter and administration of the Chameleon data system. Our conclusions on the adequacy and effectiveness of these controls are discussed in Chapters 2 and 3 of this report.

Population Management and Monitoring Animal Flow

We reviewed ACC policies and procedures and management activities to monitor and manage shelter population and animal flow. With the assistance of faculty at the UC Davis Koret Shelter Medicine Program, we identified the key principles of animal flow through a shelter system, including activities and metrics that support efficient shelter animal population management.

Despite a number of ACC's efforts to improve animal care and lower euthanasia rates, we found gaps in population monitoring and management activities and recommended practices. Agency policies and procedures are lacking for some important programs such as foster care and transfer/breed rescue. We found that management activities to support routine review of the status of animals, identify issues, take or assign action, and ensure follow-

up of animal care are sporadic. In the absence of management control systems and supervisory support, Animal Control Officers (ACOs) continually adjust activities and develop improvised approaches that are prone to incomplete and inaccurate communication and documentation practices.

We offer recommendations aimed at strengthening ACC's ongoing activities. In particular, we recommend that ACC focus efforts to further plan and organize key programs and activities needed to support animal flow through the shelter and enhance the consistency and supervision of these programs.

Data System Management

We evaluated how ACC staff and leadership use the Chameleon data system, we reviewed the administrative controls over the system, and we tested the data for completeness, accuracy, and consistency. Based on our work, we identified concerns in two areas.

First, we found that ACC implemented Chameleon without sufficient technical support and without adequate information technology (IT) security controls over the system. As a result, IT resources are not being used to their full capabilities and Chameleon is not adequately safeguarded against misuse or abuse. Second, we identified issues related to data reliability that further emphasize the need for improved controls and system oversight. Moreover, as a result of the issues we identified with data consistency, accuracy, and completeness, we determined that the Chameleon data is not reliable as a precise measure of shelter performance.

We offer several recommendations to improve the integrity and reliability of ACC data and the use of IT resources more generally.

Organizational Success and Performance Metrics

Consistent with our audit objective to review ACC's operations and identify opportunities to improve performance and transparency, we assessed factors that have limited ACC's ability to improve shelter operations. We found that inconsistent leadership, shifts in management direction, and sustained organizational uncertainty have limited ACC's ability to make needed improvements in population monitoring and management and to use technology effectively to improve shelter operations. These factors have also contributed to delays in completing significant projects and have led to confusion among the staff about ACC's priorities and practices. Finally, we present performance metrics and measures provided by the UC Davis Koret Shelter Medicine Program that could be used to measure progress in closing the gaps in population management and monitoring.

We offer recommendations to assist ACC in improving its performance, accountability, and transparency.

Acknowledgement

The King County Auditor's Office sincerely appreciates the cooperation received from the management and staff of the Department of Executive Services, Records and Licensing Services Division, King County Animal Care and Control program.

1 INTRODUCTION

ACC Provides Animal Shelter, Pet Licensing, and Law Enforcement Field Services Throughout King County

Summary

This performance audit was mandated by the King County Council in response to concerns about King County Animal Care and Control shelter services and data reliability. The scope of the audit was to determine the extent to which the existing data systems, policies, and procedures are appropriately used to manage and carry out shelter operations, improve performance, and promote transparency and accountability.

Animal Care and Control Services Overview

King County's Animal Care and Control (ACC) program is within the Records and Licensing Services (RALS) Division of the Department of Executive Services. ACC provides animal shelter, pet licensing, and law enforcement field services throughout King County. ACC's service area includes unincorporated King County, 32 cities that contract for shelter and law enforcement services, and two cities that contract for shelter services only. ACC is staffed by 45.6 full-time equivalent (FTE) employees, and the 2009 budget is approximately \$5.6 million.

Animal Care and Control's Pet Licensing program administers licenses for cats and dogs and educates citizens about the benefits of licensure. Officers in the Field Services program respond to complaints of vicious animals and bites; investigate animal cruelty cases; pick up injured animals, stray dogs, owner released pets, and deceased animals; respond to barking dog complaints; and provide assistance to police officers when requested. The Field Services program operates seven days a week and officers are on call for after-hours emergencies.

Field officers also provide coverage in the animal shelters when necessary.

Audit Focused on ACC's Shelter Operations

This audit focused solely on ACC's shelter operations. ACC operates two animal shelters—the Kent Animal Shelter and the Eastside Pet Adoption Center (Crossroads) in Bellevue. Animals housed at the shelters include stray animals, pets surrendered by their owners, animals that are on quarantine watch after biting someone, and animals that are involved in a law enforcement case. ACC animals are also housed at off-site adoption locations and in the homes of volunteer foster parents.

Shelter operations include a variety of care, cleaning, evaluation, outreach, customer service, and decision-making activities that support the movement of animals through a shelter system. This movement through the shelter is referred to as “animal flow” and begins with animals entering a shelter. During intake, Animal Control Officers (ACOs) collect basic information about an animal, administer vaccinations, and conduct an initial evaluation. After intake, animals follow a variety of pathways through a shelter system and receive additional services, which can include veterinary care, behavior assessments, care by a foster parent, or placement in an offsite adoption facility.

Outcomes for sheltered animals include adoption, reunification with the owner, transfer to a rescue organization or another shelter, euthanasia, death in care, and disposal (for animals that are brought to the shelter deceased). Chapter 2 contains our recommendations to improve the flow of animals through the ACC shelter system.

ACC uses the Chameleon shelter management system to register and track all animals that enter the shelters. Chameleon is an off-the-shelf software application that includes modules for several ACC activities, such as pet licensing, kennel

management, field enforcement reporting, and veterinary care. ACC implemented the kennel management and veterinary modules at both the Kent and Crossroads shelters in June 2006. All shelter statistics come from data stored in Chameleon, and we discuss our findings and recommendations related to the management and reliability of Chameleon data in Chapter 3.

ACC served almost 11,000 animals in the calendar year 2008. Exhibit A below provides information about the outcomes of animals during 2008, and in Appendix 2 we provide greater detail about the animals served during calendar years 2007, 2008, and the first six months of 2009.

EXHIBIT A

Outcomes of Animals Served by ACC in Calendar Year 2008

Adoption	4,620
Returned to Owner	1,345
Transferred to a Community Partner	1,774
Euthanasia ^(a)	2,231
Died in Care	222
Disposal	319
Missing in Care ^(b)	81

Notes: (a): The count of animals euthanized includes animals brought to the shelter by their owners for euthanasia (279 animals in 2008). It is ACC's policy to conduct an independent behavior and/or medical evaluation of all animals prior to determining that euthanasia is appropriate.

(b): ACC staff explained to us that animals can go missing for reasons that include: animals escaping during cleaning or transporting, staff not updating Chameleon with information about an animal's transfer into foster care, and instances in which the data system does not record multiple outcomes on a single day. We discuss the latter two issues in Chapter 3.

SOURCE: ACC data from the Chameleon shelter management system, July 8, 2009.

Recent Legislation and Reviews of ACC Programs

Recent Legislation Set Euthanasia Targets for 2008 and 2009

In May 2007, the King County Council adopted Ordinance 15801, amending the King County Code and setting target euthanasia rates at 20 percent for 2008 and 15 percent for 2009. This legislation was followed by three outside reviews of ACC operations. The Citizen's Advisory Committee, No Kill Solutions,

and the UC Davis Koret Shelter Medicine Program all issued reports that included recommendations for improving shelter operations.

The King County Council then adopted Motion 12737 in April 2008. This legislation included an emergency appropriation intended to immediately improve animal care at the county's shelters and created the King County Animal Services Interbranch Work Group (Work Group). The Work Group was tasked with developing an Animal Services Strategic Plan and Operational Plan for 2009-2011 that included three options for organizing county animal services. In October 2008, the Work Group published its report with the following organizational models for consideration by councilmembers:

- Status-Quo Organization with Enhanced County Services,
- County Reorganization, and
- Community Partnerships.

At the time of our audit, a new model for providing animal care and control services had not been adopted.

Animal Care and Control Improvements

ACC Has Made Many Improvements Since 2007

Since 2007, ACC has implemented a number of improvements recommended by outside reviewers of the program. These improvements include:¹

- Expanded Off-Site Placement program to increase the number of off-site adoptions.
- Improved partnerships with feral cat programs to divert feral cats from the shelters and to increase live outcomes for feral cats.

¹ ACC discusses many recent improvements in its 2007-2008 Animal Care and Control Program Report published on July 15, 2009. The improvements we list here are those we had the opportunity to verify during the course of the audit.

- Strengthened cleaning protocols for deep-cleaning of dog runs.
- Moved stray and owner-release cats away from the stray dog areas.
- Installed portable buildings at the Kent shelter to increase the space available for housing homeless cats and to create rooms where adopters can meet and play with individual animals.
- Purchased new, larger, and easier-to-clean stainless steel cat cages.
- Acquired perches and boxes for cat cages to improve cat living conditions.

Moreover, ACC reported significant progress in lowering the euthanasia rate at its shelters. In 2007, ACC reported a euthanasia rate of almost 35 percent. In 2008, ACC reported a much lower rate of 21.1 percent.

Audit Scope and Objectives

This performance audit evaluated the extent to which Animal Care and Control's data systems, policies, and procedures are appropriately used to manage and carry out shelter operations, improve performance, and promote transparency and accountability. The audit objectives were to:

1. Review ACC's approaches to monitoring the shelter population including the various stages and status of animals in the shelter system.
2. Determine the reliability of animal care and control shelter population statistics and performance indicators.

To meet the audit objectives, the auditors:

- Reviewed ACC's shelter policies and procedures.
- Observed shelter operations and accompanied staff members while they carried out their duties.

- Conducted interviews with almost all Animal Control Officers, all shelter supervisors, and all program managers.
- Performed a ride-along with an ACO on field duty.
- Tracked a sample of animals and evaluated activities and documentation related to moving these animals through the shelter system.
- Performed analysis of data in the Chameleon shelter management system and reviewed additional tracking tools used by the shelter to monitor animal status and flow through the shelter.
- Reviewed program reports and statistics.
- Interviewed staff at HLP, Inc., the corporation that developed and supports the Chameleon software, and staff working in King County's Office of Information Resource and Management.
- Toured four Puget Sound area animal shelters to learn more about shelter environments: the Seattle Human Society, the Seattle Animal Shelter, the Humane Society for Tacoma/Pierce County, and Thurston County Animal Services.

We retained consultants to provide shelter management and shelter medicine expertise: faculty from the UC Davis Koret Shelter Medicine Program worked with us to identify the critical principles and associated activities necessary for efficient animal shelter population management. This included identification of performance metrics that can be used to measure shelter population management and animal flow through. We also engaged Dr. Annette Rauch, Research Assistant Professor at Tufts University, Cummings School of Veterinary Medicine, Department of Environmental and Population Health, Center for Animals and Public Policy. The findings of Dr. Rauch's work on

a review of ACC's euthanasia procedures, controls, and reporting will be published by the auditor's office fall 2009.

The audit team performed audit field work between February and August 2009. The audit was conducted in accordance with Generally Accepted Government Auditing Standards.

Scope of Work Related to Internal Controls and Data

Reliability

During this audit, we evaluated internal controls related to the audit objectives. Our review of internal controls focused on controls related to the flow of animals through the shelter and administration of the Chameleon data system. Our conclusions on the adequacy and effectiveness of these controls are discussed in Chapters 2 and 3 of this report.

Our analysis relied on electronic data in the Chameleon Shelter Management System and reports compiled by Animal Care and Control. As part of our analysis, we assessed the reliability of both the program data itself and the agency's use of the data to prepare reports. We discuss this analysis and our conclusions in Chapter 3 of this report.

Subsequent to completion of our audit fieldwork, on September 24, 2009 the King County Executive announced plans to close the animal shelters in November 2009 and discontinue King County's animal control services effective June 2010.

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2 POPULATION MANAGEMENT AND MONITORING ANIMAL FLOW

Summary

This chapter presents our assessment of ACC's approaches to monitoring and managing the population and the various stages and status of animals within its shelter system. Effective population monitoring and management practices are important, shelter experts contend, because, if implemented properly, they reduce unproductive waiting time for animals, decrease lengths of stay, and maximize shelter efforts to save animal lives. We reviewed the policies, procedures, programs, and activities that ACC uses to ensure that animals are moved efficiently through the shelter system. With the assistance of faculty at the UC Davis Koret Shelter Medicine Program,² we identified the key principles of animal flow through a shelter system, including activities and metrics that support efficient shelter animal population management. In this chapter, we assess how well ACC's activities align with these recommended principles. A summary of the metrics and measures that could be used in the future to monitor and manage the population and flow of animals within the care of King County Animal Care and Control is presented in Chapter 4.

Despite a number of efforts made by ACC to improve animal care and lower euthanasia rates, we found gaps between ACC's population monitoring and management activities and recommended practices. These gaps are due largely to a lack of

² UC Davis Koret Shelter Medicine Program established the nation's first comprehensive shelter medicine program. It is recognized by its peers and animal welfare organizations for establishing programs and protocols to help reduce disease and behavior problems in shelter dogs and cats, improve the quality of pet lives during shelter stays, reduce shelter deaths, and increase the adoption rate of shelter animals. In 2008, the King County Executive engaged consultants from UC Davis Koret Shelter Medicine Program, to review the facility and operations, with a specific emphasis on shelter animal health and welfare.

systems and support for important animal flow activities. The result is that animals with behavior or health characteristics that require specialized attention, evaluation or action can be delayed from reaching an outcome. These delays can negatively impact animal health. Agency policies and procedures are lacking for some important programs such as foster care and transfer/breed rescue. These key programs are critical to helping animals reach adoption and other live outcomes. We found that management activities to support routine review of the status of animals, identify issues, take or assign action, and ensure follow-up are sporadic. Critical activities for animal population management and flow are assigned to multiple Animal Control Officers (ACOs). In the absence of controlled systems and supervisory support, ACOs continually adjust activities, develop approaches, and take on activities in addition to their traditional animal care, kennel cleaning, and customer service responsibilities to help individual animals reach adoption or other live outcomes.

During the course of this evaluation, we found that ACC's Interim Animal Services Manager and the Public Health Veterinarian who co-manage the shelter clinic, and who both are relatively new to their roles at ACC, have worked actively with ACOs and veterinary staff to implement activities to address some of the audit findings. We offer recommendations aimed at continuing and strengthening these efforts. In particular, focusing effort to further plan and organize key programs and activities is needed to support animal flow through the shelter and enhancing the consistency of those programs and their supervision is also needed.

ACC leadership emphasized throughout the audit that they have not had the resources necessary to implement many of the critical activities that we recommend in this chapter. However, as identified in this audit as well as past external reviews of ACC

(referenced in Chapter 1), animal outcomes are improved by consistent and accurate monitoring of and planning for changing shelter population dynamics.

General Background – Population Management and Animal Flow

What Is Animal Population Management at a Shelter?

3 Key Components of Animal Population Management

Animal shelter population management requires shelter managers and staff to monitor, on a daily basis, program and housing capacity and the results of specific critical activities that support animal flow through a shelter system. Animal shelter population management is supported by three interrelated principles that include capacity planning, daily rounds, and planning animal flow through the shelter.

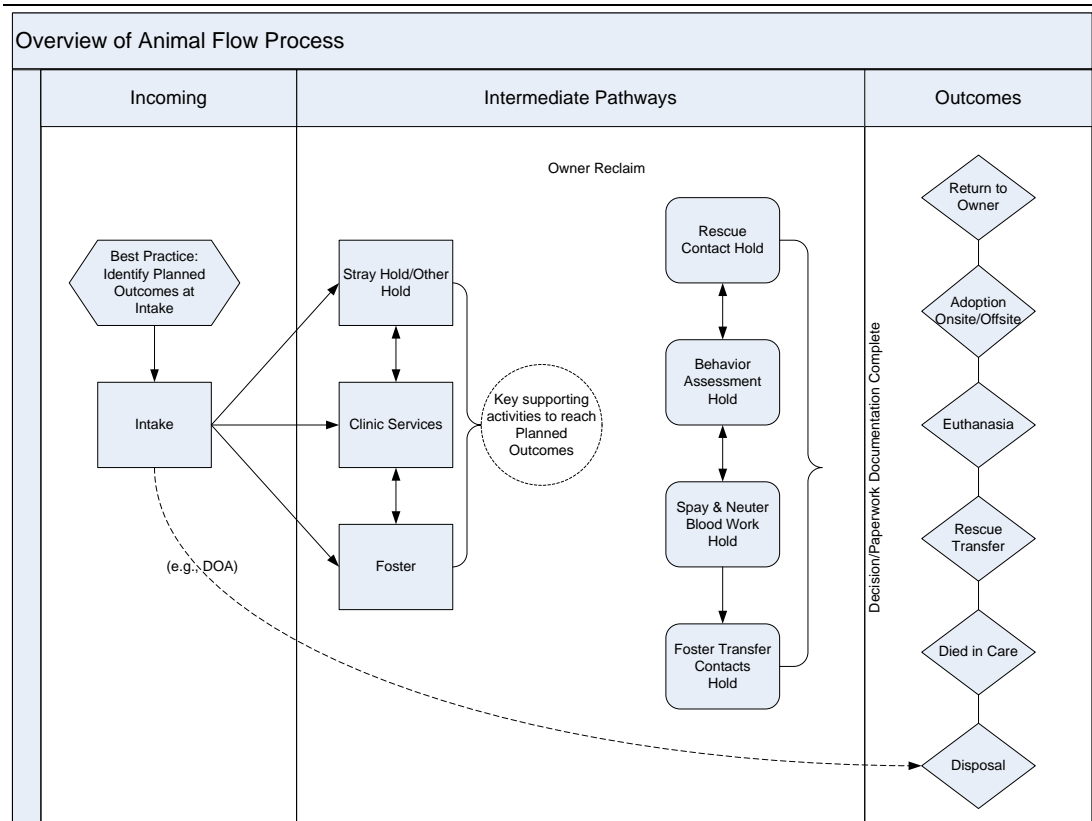
What Is Animal Flow Through at a Shelter?

Animal Flow Through Involves a Number of Intermediate Activities

The movement of animals through a shelter system is referred to as animal flow. Generally, animals enter a shelter at intake and follow a variety of intermediate pathways to an outcome. Animal flow begins with animals coming into a shelter through intake, where basic information is collected, vaccines are administered, and an evaluation occurs. Animals are held at a shelter, and day-to-day care is provided, for example food, water, and kennel cleaning. During that time animals typically receive a variety of services, such as spay/neuter or behavior assessment.

Finally, an animal reaches an outcome; these can range from reunification with the owner, adoption, rescue/transfer, euthanasia, died in care, and disposal for animals that arrive dead at intake. Exhibit B provides a general overview of the process of animal flow and the pathways an animal can take through a shelter system for an outcome.

EXHIBIT B
Overview of the Process of Animal Flow Activities



SOURCE: King County Auditor's Office

Pathways through an animal shelter system are supported by a variety of key care and outreach activities and critical decision points that support animals reaching an outcome. Examples include behavior assessment and foster care placement. The critical decision points are best supported by ensuring accurate and thorough information is collected at intake, and monitored and updated during the shelter stay. Follow-up review and decision-making concerning flow of the animal to appropriate services need to be supervised by a staff person with training and authority to make decisions. UC Davis Koret Shelter Medicine Program concludes that decisions about services

should be based on knowledge of the needs of the individual animal and the organization as a whole.³

EXHIBIT C	
Examples of Key Supporting Activities and Decision Points	
Foster Care	Contact and coordination with volunteers who provide temporary care to animals with medical or behavior conditions intended to help prepare animals for adoption.
Rescue/Transfer Program	Contact and coordination with other organizations or individuals willing to find permanent homes for animals of a particular breed or with certain characteristics such as temperament (e.g., feral cats).
Behavior Assessment	Review and documentation of behavior characteristics that need to be considered or addressed so the animal can reach an appropriate outcome.
Spay/Neuter Surgery	Schedule and provide medical procedure, physical movement to adoption area.

SOURCE: King County Auditor's Office

Recommended Practices and Key Principles to Manage Population and Monitor Animal Flow

Best Practices for Managing a Shelter Population Provide Metrics for Delivering High Quality Animal Care Efficiently

We engaged the University of California Davis (UC Davis) Koret Shelter Medicine Program to identify the critical principles and associated activities necessary for efficient animal shelter population management (Appendix 1). These experts in animal care shelter management emphasize that monitoring the shelter population and the flow of animals through an organization's system of care is fundamental to improving outcomes for animals. This is because reducing or eliminating unproductive waiting time for animals in the shelter shortens their length of stay, and in turn reduces the in-shelter population. UC Davis has found that shorter stays lead to decreased shelter population and crowding, help protect animal health, and conserve limited public resources. To address this, UC Davis recommends implementation of three interrelated principles to monitor and

³ UC Davis Koret Shelter Medicine Program, July 2009

manage shelter population and reduce or eliminate unproductive animal waiting time: capacity planning, daily rounds, and animal flow planning.

- Capacity planning involves using historical and current information about the types of animals and their related housing and service needs to plan and align shelter resources.
- Daily rounds include activities that provide for monitoring animal health and behavior and ensure an animal's needs are met. Accurate assessment and information at intake and during an animal's holding period allows animals to be directed to the appropriate service and outcome.
- Planning and monitoring animal flow includes using the information from analysis of housing and service capacity, and daily rounds to plan and develop pathways for animals to reach an outcome.

Exhibit D provides a summary of the key principles and critical activities UC Davis Koret Shelter Medicine Program recommends, based on their demonstrated research, as necessary to monitor shelter capacity information, support daily rounds, and conduct animal flow planning.

EXHIBIT D	
Key Principles and Summary of Critical Activities Needed to Manage Animal Shelter Population	
Key Principle	Specific Critical Activities
Capacity Planning	Estimate capacity for housing areas, service at critical flow points (evaluation health/behavior), programmatic care (treatment, behavior enrichment), basic care Evaluate estimates compared to actual housing/staffing Make changes/adjustments such as realignment of staffing Monthly/daily evaluation of population dynamics
Daily Rounds	Designate authority to make decisions Address animals' needs in a systematic way Decision-making for outcome pathways Schedule service/programmatic care Daily inventory reconciliation including ID checks Follow-up system to act on need for care, outcome pathway decisions, and scheduling
Planning Animal Flow	Develop a plan of flow-through pathways Daily evaluation of population dynamics Housing plan for sub-populations Maintain adequate capacity, such as capability to conduct behavior assessments Intake evaluation for all animals Evaluate pathways as part of daily rounds

SOURCE: UC Davis Koret Shelter Medicine Program, July 2009

In addition to the summary provided in Appendix 1, the complete Animal Shelter Population Health Management and Metrics report that UC Davis Koret Shelter Medicine Program prepared is provided here. Chapter 4 provides a summary framework of the metrics that could be used in the future to monitor the population and flow of animals within the care of King County Animal Care and Control.

Our Audit Approach

Our analysis is based on over 20 days of on-site observations of ACC performance of key activities between February and June 2009. We reviewed ACC policies and procedures and management activities to monitor and manage shelter population and animal flow, and interviewed nearly all shelter ACOs, field and shelter supervisors, managers, and veterinary clinic staff. In order to assess animal flow, we tracked 25 animals (17 dogs and 8 cats) in the shelter system and reviewed ACC's activities associated with the documentation and decision-making concerning the animals. We selected these animals because their treatment was illustrative of critical animal flow practices.

How Well Do King County's ACC Activities Align with Recommended Practices?

Overall we found there is a lack of systems and support for key animal population management and animal flow programs and activities. Further, there is limited or inconsistent management controls and supervisory oversight of critical activities to support animal flow at ACC. This hampers staff effectiveness and animals' timely access to critical programs and activities.

ACC Activities to Plan and Monitor Capacity

We found there is a lack of routine analysis of information for monitoring the capacity of housing and critical activities and programs at ACC. Planning and monitoring capacity is an important activity that supports alignment of resources to meet shelter needs. Several ACC managers reported to us that they do not use reports from the Chameleon data system on a routine basis to monitor the population dynamics of the shelter. We found an absence of routine and comprehensive analysis, monitoring or planning of capacity for housing areas, and critical programs and activities. This analysis should be done in relation

**Limited Analysis and
Monitoring of Capacity
Leads to Staffing
Problems and
Misaligned Resources**

to actual animal population needs. Information about these housing areas and programs is shared between staff in a variety of ways such as day-to-day conversation, e-mail, hand written notes and logs. This manual process does not support efficient planning and alignment of resources. For example, staffing assignments for the intake and housing areas and some critical activities at the shelter are made by shelter sergeants. These assignments are primarily based on a seniority process identified in the labor agreement and schedule rotation, although some consideration is given to particular staff expertise. Our field observations and interviews with ACC staff found routine problems with staffing assignments. This often results in staff being moved from one area of the shelter to another or staff pulled from duties in the field to the shelter to help provide animal care such as kennel cleaning or other critical services such as behavior assessment. These adjustments take time to implement, particularly if an ACO must travel some distance from the field to the shelter. During field visits we observed multiple days where kennel and cage cleaning was not completed until mid afternoon because staff assignments had to be adjusted. Further, when ACOs were pulled from the field, their originally assigned duties were left temporarily unstaffed.

As a result, imbalances occur between the population levels within various housing areas in the shelter, and staffing is not planned or readily synchronized with population dynamics. Additionally, animal access to critical programs or activities is delayed. The 2009-2011 Operational Master Plan issued by the King County Animal Services Interbranch Work Group in October 2008 included analyses of ACC facility capacity and staffing for various service models including a status quo model for animal care and control services. Those results are not repeated in this audit. However, given our findings above we conclude that ACC would benefit from a detailed analysis of staffing including

development of a staffing model that could be used to plan and prioritize staffing resources for ACC service delivery.

RECOMMENDATION 1

ACC needs to implement a staffing model or tool that accurately simulates the flow of work over time so that ACC can accurately plan staffing and associated resource needs. Such a model should also align staffing with population dynamics, housing, and program capacity.

**Animal Care Hampered
by Lack of Monitoring
and Delayed Decision-
making*****ACC Activities to Conduct Daily Rounds and Monitor
Animal Status***

While ACC has made some improvements to daily rounds, the lack of effective monitoring of an animal's status and delayed decision-making is hampering delivery of effective animal care. ACC uses a combination of ad hoc approaches to review the status of animals, identify issues, take or assign action, and follow-up. Daily rounds are important because they provide the opportunity to monitor and ensure that an animal's needs are met. Daily rounds at ACC are not comprehensive or consistent with recommended practices. Although ACOs and veterinarian staff have multiple contacts with animals throughout the day, we repeatedly observed during our field visits, and ACC staff confirmed, that information about animal status is not recorded consistently or completely in the data system or on written kennel cards. This was the case for 15 of the 25 animals we tracked during our field observations.

In May 2009, ACC implemented a practice of conducting rounds, two times a week in select areas of the shelter. The new process that ACC refers to as Grand Rounds, includes key ACC managers, veterinarians, shelter supervisors, and ACO staff who review animal condition, documentation, and pending decisions.

ACC is challenged to ensure information identified during the Grand Rounds receives follow-up.

Input from shelter sergeants is required to make decisions about an animal outcome. This is a key quality control measure, intended to help ensure that overall policies for animal care are adhered to. However, we routinely observed and nearly all interviews with ACC staff confirmed that shelter sergeants are not readily available throughout the day to participate in ACO or veterinarian monitoring activities. Additionally, shelter sergeant work stations are located in a different area of the shelter, so ACOs leave their work activities in the housing and intake areas to seek shelter sergeant supervisory input. Paperwork is pulled by multiple staff to inform decision-making which leaves animals in the housing area without complete documentation. Our field observations and interviews with staff confirm that this leads to confusion for staff and customers when they are trying to locate an animal or understand its status.

These approaches result in ACC delaying decision-making about animal outcomes. Throughout our over 20 days of field observations, we found recurring instances where ACO staff could not make decisions about animal status because of unclear or pending documentation or delayed decision-making by a shelter sergeant or other ACC staff. Additionally, ACO staff effort was spent locating documentation on animal status and obtaining supervisor decisions rather than performing critical care activities. Consistent daily rounds and improved supervisory decision-making are needed to improve the monitoring of animal status and timely decision-making.

RECOMMENDATION 2 ACC should adjust the physical location and operational approaches of shelter supervisors so they are more accessible to staff and modify their supervision to support timely monitoring and decision-making.

RECOMMENDATION 3 ACC should continue its efforts to implement Grand Rounds and develop approaches to ensure information from the rounds receives appropriate follow-up and is used to monitor and improve animal care practices.

ACC Activities to Plan and Monitor Animal Flow Through the Shelter

ACC does not systematically identify or track animal pathways through the shelter toward particular outcomes. Planning and monitoring animal flow through the shelter is important to ensure appropriate services are provided to support animal health and timely outcomes. The current intake process does not include identification of a planned outcome for an animal, and collection of complete and accurate information is inconsistent. For example, a dog that may have a particular temperament or behavior characteristic may or may not have that information identified and recorded at intake. The dog may then wait a number of days past a mandated stray hold period before assessments are completed and information is assessed to determine the appropriate services and outcome for the animal.

This occurs because there is an absence of written policies and consistently applied procedures for some of the critical programs and activities needed to support animal flow, for example, foster care and breed rescue/transfer. In some cases where policies and guidelines exist for key activities, such as behavior assessment, the policy or supporting procedures/documentation methods do not reflect current practices. For example, during our

field observations a number of ACC staff was not using the appropriate procedure and documentation for behavior assessments. In the absence of consistent policies, many critical activities such as foster care placement, transfer, or breed rescue were initiated by ACOs and veterinary technician staff who recognized the need for these critical activities. These staff developed external partnerships and approaches to provide these activities. Portions of activities to support critical programs are being carried out by multiple staff with no one position or supervisor responsible for tracking or communication, coordination, scheduling, or decision-making. The number of staff who work on these critical activities and the seven days a week coverage and rotation of schedules, underscore that policies, procedures, and documentation practices need to be consistently implemented and supervised. ACOs and veterinary technician staff attempt to fill the lack of defined systems and supervisory support by continually adjusting activities, using ad hoc approaches and taking on duties in addition to the traditional animal care, kennel cleaning, and customer service responsibilities. Nine of the 25 animals we tracked were at the shelter 20 to 44 days before being rescued, adopted, or euthanized. This is significantly longer than ACC's reported average length of stay of 12 days.⁴ Additionally, during that time in the shelter the animals were exposed to the occurrence of common shelter disease and a number of the dogs developed behavior problems. The effect is that animals may wait to receive access to critical programs and activities that are appropriate for their eventual outcome. This leads to unproductive waiting time and potentially poor outcomes for some animals.

⁴ Based on ACC reported average length of stay of 12 days between January and May 2009.

RECOMMENDATION 4

Continue to improve and implement intake procedures that ensure accurate evaluation and recording of information about incoming animals, and that identify planned outcomes for animals.

ACC Has Taken Some Steps to Improve Operations***ACC Activities to Address Gaps***

The Interim Animal Services Manager and Public Health Veterinarian have implemented a number of practices that begin to address some of the findings addressed above. These include holding frequent manager and staff meetings and trainings to review improved animal monitoring, shelter health practices, and intake methods. Efforts are underway to update significant policies and procedures, including documentation and communication protocols with foster care volunteers and transfer/breed rescue partners. As discussed above, in May 2009 ACC implemented a practice of conducting Grand Rounds two times a week in select areas of the shelter. ACC also began foster-parent orientation and training programs, and reports they have established regularly scheduled animal care consultation hours at the Kent shelter clinic. Further, ACC has made upgrades to the physical structure at the Kent shelter including remodeling of the intake area so there is room to conduct more thorough intake evaluations. Finally, the Interim Animal Services Manager recognizes the need to improve continuity of staff scheduling and develop appropriate opportunities for volunteer support activities. ACC is working with the Animal Control Officers Guild on these and other multiple efforts to address important operational needs.

In summary, ACC has not developed the systems to consistently implement the three recommended principles that are fundamental to effective shelter population management and improved outcomes for animals. The effect is that animals with

behavior or health characteristics that require specialized attention, evaluation, or action can be delayed from access to programs and reaching a desired outcome as quickly as possible. These delays increase lengths of stay which can negatively impact animal health and does not promote efficient use of resources.

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3 DATA SYSTEM MANAGEMENT

Summary

In this chapter, we discuss our assessment of the reliability of Animal Care and Control's shelter data and performance reports. We evaluated how staff and leadership use ACC's data system (Chameleon), we reviewed the administrative controls over the system, and we tested the data for completeness, accuracy, and consistency. Based on our work, we identified concerns in two areas.

First, ACC implemented Chameleon without sufficient technical support and without adequate information technology (IT) security controls over the system. As a result, IT resources are not being used to their full capabilities, and Chameleon is not adequately safeguarded against misuse or abuse. Second, we identified issues related to data reliability that further emphasize the need for improved controls and system oversight. Moreover, as a result of the issues we identified with data consistency, accuracy, and completeness, we determined that the Chameleon data is not reliable as a precise measure of shelter performance.

As part of the audit, we also examined ACC's monthly shelter statistics and the process ACC used to calculate its 2008 euthanasia rate. Apart from the issues we identified with the data itself, we did not find any problems with ACC's compilation of the data into its reports. Further, although the formula used by ACC to calculate its 2008 euthanasia rate varies slightly from the language in the King County Code, the impact of the variance is less than one percent.

During the course of our audit, ACC made improvements and began addressing some of our audit findings. Most notably, in June 2009, ACC began to receive technical oversight and support for Chameleon from a technical analyst on loan from King County's Office of Risk Management. As this individual becomes more knowledgeable about Chameleon and shelter operations, he can provide an important element of support, oversight, and control that will enable Chameleon users and recipients of Chameleon reports to feel more confident in the integrity and reliability of ACC information.

We offer several recommendations to improve the integrity and reliability of ACC data and the use of IT resources more generally.

Oversight and Support of Chameleon and Other IT Resources

Data System Was Implemented Without Sufficient Support or Oversight

We found that the Chameleon data system was implemented without sufficient technical support or oversight. As we describe in Chapter 1, Chameleon is a shelter management system that can be used to record and track a broad range of shelter activities, including animal intake and outcomes, veterinary services, pet licensing, and field operations. In July 2006, ACC implemented the Kennel Management and Veterinary modules of Chameleon at both the Crossroads and Kent shelters. At this time, Chameleon staff installed the software and provided one week of training. Since then the system has been supported and administered solely by shelter staff with limited technical assistance from the vendor and King County's Office of Information Resources and Management (OIRM). This approach has led to insufficient oversight and support of the system, as there are no individuals on ACC's staff with the IT or database administration expertise necessary to implement adequate

controls over the system or to ensure technical resources are used to their full capability to support shelter operations.

In this section, we make two recommendations related to improving support and oversight for the Chameleon data system and IT resources generally. ACC leadership stressed to us that they have not had the resources necessary to implement the degree of oversight and support we recommend. We did not conduct a staffing or resource analysis as part of this audit; however, we agree that there would likely be costs associated with making some of these improvements. For example, ACC recently began obtaining assistance from a technical analyst on loan from the Office of Risk Management. Our understanding is that ACC would need to provide funding for this position in order to make the arrangement permanent.

Nonetheless, improved oversight and IT controls will help ACC ensure that their data is reliable and program reports accurately represent performance. Moreover, in addition to demonstrating the integrity of the data system, strong controls and oversight are essential to helping ACC demonstrate the transparency of shelter operations and data reporting.

Insufficient Controls over Chameleon to Ensure Data Integrity and Reliability

**IT Controls Help
Protect System
Integrity and Data
Reliability**

The Chameleon data system is currently operating without sufficient information technology controls. IT controls are a subset of management controls that protect the integrity and security of an organization's information systems and data. IT controls help entities reduce opportunities for data system misuse or abuse, and they can also help entities ensure that processes for collecting and reporting data are transparent and program reports reliably describe program operations and performance.

Effective IT controls include both *general controls*, which are applied across an organization and help ensure information systems are operating effectively, and *application controls*, which relate to a specific computer application (such as Chameleon) and help ensure data are complete, accurate, valid, and available.

An example of a general IT control is a security management plan that addresses key roles and responsibilities for ensuring a system is safeguarded from potential vulnerabilities. General controls also include access controls that help ensure access to data is reasonable and limited. Examples of application IT controls include reviews of data and reports to ensure records are recorded timely, key data elements are accurate and complete, and transactions were properly approved. Application controls are frequently automated (e.g., a screen that will not allow a user to proceed until all fields are complete); however, manual reviews of reports and data suffice for many organizations.

**ACC Has Not
Implemented Sufficient
IT Controls Over
Chameleon**

In order to test whether ACC has implemented sufficient controls over Chameleon, we reviewed IT control guidelines and standards published by the federal Government Accountability Office and the Committee of Sponsoring Organizations of the Treadway Commission (known as COSO). We also reviewed policies published by King County's Office of Information Resources and Management (OIRM) in 2005. From our review of standards and guidelines, we developed a list of the key IT controls most relevant to the Chameleon data system, and we include our assessment of whether ACC has sufficiently implemented each of these controls in Appendix 3. In summary, we identified the following deficiencies:

System Oversight and Security Management – ACC has not developed or implemented a process for ensuring sufficient oversight and security management of the Chameleon system. For example, ACC has not developed a policy that specifies responsibility for key security roles, does not regularly assess risks to the data system, and has not updated Chameleon software as improvements have been released. Without a plan to ensure sufficient oversight and security, roles for safeguarding the system have not been developed or assigned and security controls have not been implemented. Additionally, ACC is not following guidance from OIRM to regularly assess risks to information systems and implement security policies and practices that follow recognized standards.

ACOs Report Needing Additional Training and Supervisors Do Not Routinely Monitor Use of the System

Training and Supervision of Users – Chameleon users have not received adequate training and are not sufficiently supervised in their use of the system. The majority of ACOs reported to us that they are not confident using Chameleon and would like additional training. ACC management attempted to address this issue by bringing Chameleon staff to the Kent shelter for additional training in August 2008. Additionally, ACC sent its new Shelter Operations Manager, hired in June 2009, to Chameleon training at Chameleon’s annual conference. Nonetheless, many ACOs reported that they had not received Chameleon training since the system was first implemented in 2006, and several staff members said that they do not know how to use key system reports and functions that could facilitate their work. Moreover, consistent with the gaps in supervision we describe in Chapter 2, ACC supervisors and management have not implemented a process for routinely monitoring the consistency or accuracy of data entry. For example, shelter supervisors do not regularly sample records or directly monitor staff use of Chameleon. As a result, data entry is not always consistent, accurate, or complete, as we document below. Effective user training and supervision

are controls ACC can implement to improve the reliability of Chameleon data and reports.

**ACC Needs to Align
Level of Access with
User Needs**

Access Controls – ACC has not managed Chameleon user accounts to ensure that access is limited appropriately and that users have only the privileges they need to perform their work. For example, Chameleon allows sites to set up different types of user accounts with varying levels of privileges, but ACC has established only two types of users: Public and System Administrator. All individual user accounts have public privileges; this means that ACOs can read, update, and create new records (they cannot delete records). The System Administrator account is used by shelter supervisors when they need a higher level of access (e.g., to resolve duplicate records). However, because the System Administrator essentially owns the database and can delete records, change system parameters, and could even delete the database, it would be more appropriate for a database administrator to maintain these privileges. Supervisors who need greater access could have specific privileges added to their individual user accounts, and these accounts could be monitored to ensure use is appropriate. In June 2009, ACC began receiving Chameleon support from a technical analyst on loan from the Office of Risk Management. With the assistance of this new resource, ACC can improve the alignment between user access and user needs in order to reduce the risk of accidental or unauthorized system modifications and improve the integrity of the system.

Reconciliations – Although ACC does regularly reconcile data in Chameleon with the actual shelter population, the reconciliations are not sufficiently supervised and do not include the entire shelter population. Currently multiple ACOs inventory different areas of the shelter, and another ACO is responsible for collecting the results. Shelter supervisors are not required to

review the inventory forms or ensure Chameleon is properly updated. This is an issue because we found animals that were not tracked appropriately. For example, when we looked at inventory reports printed *after* reconciliations in August 2009, we found that each report included at least three animals in “Receiving” for over three days (on some reports, as many as nine animals had been in “Receiving” for over three days). “Receiving” is the front counter of the shelter, and so the only animals that should be located there are new arrivals who have not yet been assigned a kennel. Increased supervision over reconciliations would provide an important element of control to ensure Chameleon data is accurate and all animals are tracked appropriately.

**ACC Does Not
Regularly Reconcile
Foster Care Data**

In addition, ACC does not regularly reconcile data for animals in foster care. Currently, ACC has no internal mechanism for tracking the status of animals that go into foster care. Rather, ACC relies on foster parents to tell the shelter when an animal has been adopted, died, or otherwise changed status. This means that Chameleon data about animals in foster care may not match the actual condition or outcome of the animal. ACC attempted to conduct a reconciliation of all animals in foster care in April 2009, but this work was stopped after a representative of the ACOs’ guild expressed concerns over who would be performing this work. Regular reconciliations of all animal records are essential to ensure data reliability and to account for all animals in the county’s care.

Tracking System Changes and User Activities – The Chameleon software does not automatically track most user activities, and ACC has not implemented additional tools to facilitate tracking of key events. For example, unless a record is deleted using the “Fix Duplicate” tool in Chameleon, the system does not record information about records that are deleted, such

Chameleon Does Not Track Data About Animals Improperly Deleted

as who deleted them and when the activity occurred. As we describe below, we identified 384 instances between January 2008 and July 2009 in which there is an animal record but no associated kennel or license records. This means either that an animal was entered into Chameleon even though it did not enter the shelter and did not receive a license, or that the kennel or license records were deleted. Because the “Fix Duplicate” tool was not used, and because the system does not contain any notes or additional information to explain these instances, we could not determine what happened to these animals. OIRM staff reported to us that the cost and resources required to increase monitoring of user activities vary. For example, tracking all changes to the database would require a significant investment of resources. Tracking common data entry errors or monitoring for unauthorized deletions is a simpler task, but still requires installation and maintenance of an additional software application. Although there would be a cost associated with improving ACC’s tracking of user activities, this kind of tracking would help ensure the system is used properly and would improve the reliability of shelter data.

Strong IT Controls Would Improve Data Integrity and Transparency

Sufficient IT controls help entities ensure data is reliable and reports accurately represent performance. Without sufficient controls, ACC is not in compliance with generally accepted IT control standards, including the county’s own policies and guidelines, and Chameleon is at risk of misuse. Improving the controls over the system would help ACC safeguard its data system, would increase confidence in data integrity, and would improve the transparency of ACC reports.

RECOMMENDATION 5

ACC should develop and implement IT controls that include: sufficient management of system security and oversight, improved training and supervision of users, alignment between user access and user needs, regular reconciliations of all data records for animals in the county's care, and increased monitoring of user activities that impact data reliability and integrity.

Technical Resources Are Not Used to Their Full Capability to Support Shelter Operations

IT Resources Not Aligned to Support Shelter Activities

Without sufficient support and oversight for Chameleon, ACC has also not used the Chameleon system to its full capability to manage the flow of animals through the shelter and to facilitate basic shelter activities. Through our conversations with ACC staff and our observations at the shelter, we identified the following issues related to the current use of Chameleon, and other IT resources, to support shelter operations:

- **Chameleon reports are not used consistently and have not been customized to meet the needs of shelter staff.**

Although some ACOs and supervisors use Chameleon reports to assist them with their work (e.g., reports that list which animals need vaccine boosters or are ready for behavior assessments), many reported to us that they infrequently use Chameleon reports. They explained that the reports are not useful, that the reports are not always accurate, and that they are not sure how to create them. ACOs said that many staff members do not know how to update Chameleon properly so that the reports include the right information. We also found that some ACOs and shelter supervisors were not aware of reports that could facilitate common shelter tasks. For example, we met with key supervisors and staff members who were not aware that

ACC Staff Do Not Consistently Use Reports to Facilitate Work

Chameleon can automatically create and maintain a report of animals available for foster care.

Further, until recently, ACC has not taken advantage of tools offered by Chameleon to help sites customize reports or create new reports that could make data more useful to them. To help sites customize the software, Chameleon moderates a Web group where shelters can post questions and share information, including tools for creating custom reports. Chameleon also hosts an annual conference that includes training on how to create reports. Although shelters must pay travel expenses to send staff to these trainings, Chameleon offers the conference itself at no cost. As part of its current effort to improve technical support for the shelter's Chameleon system, ACC sent its new database support staff and new Shelter Operations Manager to the Chameleon conference this past June.

**ACC Has Not Updated
Chameleon Software
When Improvements
Have Been Released**

- **ACC has not updated the Chameleon software and common application problems have not been addressed.**

ACC has not updated the Chameleon software since it was installed in 2006. Chameleon updates are available to the county at no additional cost and include improvements that reduce the likelihood of data entry errors, allow shelter management to monitor the flow of animals through the shelter more closely, and enforce more consistent use of the data system, such as requiring ACOs to clear any holds before an animal is adopted or euthanized.

We found that more recent versions of Chameleon also correct a common problem currently experienced by ACOs; the version of Chameleon in use at ACC cannot save two outcomes for the same animal on the same day. For example, if a cat goes to an off-site adoption facility and is

also adopted on June 1, the cat should have two different outcome records for June 1, the first for the transfer to the off-site facility and the second for the adoption. However, Chameleon can only record one of the outcomes, and the adoption record will not be saved. This issue can lead to inaccurate data (because it looks like an animal has gone missing after not returning from an off-site event) and to inaccurate reporting of outcomes (because an adoption was not recorded). In order to work around this problem, ACOs currently attempt either to backdate the transfer to a previous date or to wait to update Chameleon until the following day. This means that ACOs do not always make timely updates to Chameleon and also that the dates of some records are not accurate. Updating the software to the current version would resolve this issue without requiring additional effort from ACOs.

- **ACC has not done an analysis of how to use IT resources to support shelter activities and improve the flow of animals through the shelter.** We found that ACC has not attempted to align technical resources, such as Chameleon, to facilitate shelter operations. For example, ACC has not done an analysis of the appropriate number or optimal layout of terminals. In the current arrangement, some computer terminals go unused (e.g., one in the field office at the Crossroads shelter) while others are in high demand (e.g., those in the receiving area in the Kent shelter), and in some areas of the Kent shelter (i.e., the cat adoption module), there is no access to Chameleon at all.

Moreover, consistent with our findings regarding the management of animal flow, ACC has not developed a plan to improve the integration of Chameleon with the daily work of ACOs. Even with all of Chameleon's functionality, ACOs

ACC Has Not Fully Integrated the Data System With Daily Shelter Operations

still use multiple manual methods of tracking animal information and needs, such as notes on kennel cards, clipboards at the vet clinic and the front desk, and handwritten lists. The effect is that information is sometimes entered multiple times and also that information not always available when ACOs need it. Proper use of Chameleon reports and the creation of new reports to meet ACO needs could streamline current efforts and improve communication among shelter staff.

Finally, throughout our audit, shelter staff reported problems with broken printers, too few cameras that work with the current version of Chameleon, and trouble with being able to check county E-mail. Without adequate support for these more basic tools, shelter staff struggle to complete daily tasks and resolve basic hardware and application issues.

ACC Improvements to Oversight and Support of Chameleon**ACC Has Begun to Improve Support and Oversight for the Data System**

With improved management and support of the shelters' technical resources, along with improved controls, ACC can ensure Chameleon is used consistently and to its full capability to support shelter operations. Toward the end of our audit, ACC began to make progress in this area by sending its new Shelter Operations Manager, hired in June 2009, to training provided at the annual Chameleon conference. Further, ACC has begun obtaining assistance from a technical analyst on loan from the Office of Risk Management. This individual will be assisting the shelter with its management and administration of Chameleon and also attended recent Chameleon training. He has begun to learn about shelter operations and is aware of the need to improve ACC's use and oversight of Chameleon, including improvements to system integrity, data reliability, and the alignment between technical tools and shelter activities. ACC

leadership reported to us that they plan to use this new resource to help upgrade the Chameleon software and implement additional IT improvements for the shelter.

The involvement of technical experts is essential to providing the degree of system oversight and management necessary to ensure the integrity and reliability of Chameleon data. By leveraging its partnership with the Office of Risk Management, ACC has made an important first step toward improving the administration of IT resources at the shelter. However, the current solution is an interim arrangement, and so it is essential that Records and Licensing Services continue working toward a long-term solution for IT support and oversight.

RECOMMENDATION 6

ACC needs to continue to engage technical support for the shelters to ensure Chameleon software is updated, is working properly, and has been sufficiently customized to meet the shelter's needs. Additionally, ACC needs to improve its use of IT resources, including Chameleon, to facilitate shelter activities and improve the flow of animals through the shelter.

Reliability of Chameleon Data and ACC Reports

In addition to evaluating ACC's oversight and management of the Chameleon data system, we also assessed the reliability of program information. We tested program data for consistency, accuracy, and completeness, and we evaluated how ACC compiles monthly program statistics and calculated its 2008 euthanasia rate.

We found only minor issues with the process ACC follows to compile program reports. However, we identified inconsistencies and errors in data entry that raise questions about the reliability of ACC data. We also found gaps in animal records that highlight

the need for improved IT controls, and we determined that inadequate tracking of animals in foster care limits the usefulness of Chameleon data for calculating precise measures of shelter performance.

Reliability of Chameleon Data

The US Government Accountability Office describes data as reliable when they are:

- *Complete* – All relevant records are present and the fields in each record are populated appropriately.
- *Accurate* – Data reflect the actual underlying information.
- *Consistent* – Data are clear and sufficiently well defined to yield similar results in similar analyses.

In order to assess the accuracy and consistency of data entry, we reviewed a sample of 60 animal records from 2009. In order to assess data completeness, we tested all records from January 2008 through June 2009 for evidence of deleted or missing records and to identify any additional issues with data entry or data management. Finally, we interviewed ACOs and shelter supervisors, and we reviewed shelter inventory and reconciliation documents from 2008 and 2009. From our analysis, we identified the following issues with Chameleon data.

Missing Animal Records

We tested over 17,000 Chameleon animal records from 2008 and 2009 for evidence of missing or deleted records, and we identified 461 Animal IDs for which there were no associated kennel or license records. Of these, we could confirm that 77 IDs were for animal profiles that had been properly deleted as duplicate entries of animals already in the system. Duplicate entries can occur for several reasons. One example is when an animal enters the shelter multiple times and is given a new ID number each time (e.g., if they are not wearing a tag or are not

micro-chipped). When the duplicate is identified, a shelter supervisor can correct the error using a tool within Chameleon that reassigns all kennel, license, and veterinary records to the appropriate Animal ID and deletes the animal's profile under the incorrect ID. When this tool is used properly, Chameleon keeps a log of all duplicates that have been deleted and the corrected Animal IDs.

We Identified Cases of Animals Improperly Deleted from the Data System

However, if the tool is not used properly or if staff members bypass the tool and try to fix duplicates manually, Chameleon does not keep a record of the corrections. Additionally, if the kennel records are deleted from the system but the animal profile is not, then the system includes animals for which there are no associated records. In other words, there is no documentation of why the animal was entered into the system or why associated records were removed. This was the case for 384 of the 461 Animal IDs we identified without any associated kennel or license records. Although this number is not a large percentage of the total number of IDs assigned over 18 months, the issue emphasizes the need for tighter controls over the system, including increased monitoring of user activities.

Animals in Foster Care Are Not Sufficiently Tracked

Insufficient Tracking of Animals in Foster Care

As we discussed above, ACC does not routinely follow up on animals that are placed in foster care. ACC relies on foster parents to tell the shelter when an animal has been adopted, died, or changed status in any other way. When foster parents alert ACC to a change in status, or bring the animal back to the shelter for care or to be put into adoptions, staff can update Chameleon. However, if the foster parents do not contact the shelter, ACC does not have any mechanism for tracking the outcome of animals. This means that Chameleon data about animals in foster care may not match the actual outcome or condition. Moreover, because ACC has been successful in

getting animals into foster homes, the number of animals not being tracked is a significant percentage of the total population; in 2008, approximately 13 percent of live cats and dogs that entered the shelter went into foster care.

In April 2009, ACC began a reconciliation of all animals in foster care, but this work was stopped after a representative of the ACOs' guild expressed concerns over who would be performing this work.

Errors in Data Entry

Review of Records

Sample Identified Data

Entry Errors

We reviewed the records for a sample of 60 animals that were in the shelter during the first 6 months of 2009. We designed our sample to include cats and dogs that reached various outcomes, as our goal was to get a sense of how ACOs use Chameleon to record information about different kinds of cases. We also evaluated the records for accuracy, consistency, and completeness. We identified the following issues:

- **Intake Errors:** Nine records included an error in data entry during intake. Seven of these records included errors related to intake type; one included an error in setting the date in which the animal was available for adoption; and one record had been partially overwritten when an animal returned to the shelter. Examples include selecting "Stray" when the animal should have been entered as "Owner Surrender" or selecting "Return" (which means the animal was returned by an adopter) when the ACO should have selected "Foster" (which means the animal was returned by a foster parent because it was ready for adoption, needed health care, or for some other reason). The impact of these errors is that ACC cannot accurately track the source of animals coming into the shelter, and also that ACC cannot precisely calculate its euthanasia rate under the current code. Additionally, because

stray animals must stay at the shelter for at least three days before they are available for adoption or a different outcome, some of these errors could increase an animal's stay and the total number of care days for the shelter.

- **Outcome Errors:** Four records had an error in data entry related to outcome. One of these records included data entered out of order; two had incomplete foster care outcomes; and one included an outcome of "Transfer" when it should have been "Returned to Owner." The impact of these errors is that they reflect inconsistent and incomplete data entry and raise questions about the reliability of the data generally.
- **Documentation of Decision-Making and Veterinary Care:** Three of the records did not include notes that adequately described decision-making or included notes that were inconsistent with the animal's outcome. Another three did not include sufficient documentation of veterinary care. The impact of insufficient documentation is that Chameleon is not a reliable record of how specific cases were handled and cannot provide information about whether care was adequate.
- **Photographs:** Twenty-eight of the records did not have a photograph of the animal when a photograph would have been appropriate. The lack of photographs reduces the effectiveness of including adoptable animals on external Web sites.

In addition to the errors we identified in our sample, we noted two other types of errors. We did not test Chameleon data to determine the prevalence of these errors, and so we cannot say how frequently they occur. Nonetheless, these kinds of

errors indicate the need for improving controls over the data system, such as increased training of staff and monitoring of users.

- **Inconsistent or Duplicate Outcomes:** We identified several cases in which the same animal was either given the same outcome more than once (e.g., was both adopted from foster care and also adopted from the shelter) or was given inconsistent outcomes (e.g., died in foster care and was euthanized in the shelter). The impact of this kind of error is that animal statistics are not accurate and Chameleon cannot be used to determine the actual outcome of an animal.
- **Overwriting Existing Records:** ACOs reported to us that it is easy to accidentally overwrite records when updating Chameleon with new data about an animal, especially when entering data for animals who are returning from foster care. This occurs when an ACO enters new information about an animal and then hits “Update” rather than “Store”; “Update” overwrites the current record, while “Store” creates a new one. When we reviewed data from 2008 and 2009, we found evidence that several records had been overwritten. Overwriting records makes research into an animal’s history difficult and reduces ACC’s ability to calculate accurate performance indicators.

Data Entry Errors and Inconsistencies Impact Calculations of Shelter Performance

Inconsistencies and errors in data entry impair ACC’s ability to use Chameleon data to calculate a precise measure of shelter performance. For example, the King County Code specifies that ACC calculate its euthanasia rate as a percentage of the number of cats and dogs that entered the shelter alive. ACC cannot include animals returning from foster care in this analysis, and so errors in which foster care returns are coded improperly can result in calculating a euthanasia rate that is too high or too low. Moreover, incomplete documentation and duplicate or

inconsistent outcomes impair ACC's ability to research an animal's history or care while in the shelter. Gaps in the data and inadequate tracking of animals in foster care have the additional impact of raising questions about the integrity of the data system overall and the completeness of data used to measure shelter performance.

All of these issues emphasize the need to improve controls over the Chameleon data system, especially those related to training and supervision of users. ACC needs to ensure all Chameleon users are trained in proper use of the system, and supervisors and managers need to monitor use to ensure it is appropriate. ACC needs to ensure duplicate entries are removed from the system using the proper tools. Improving access controls, as discussed above, and monitoring the use of sensitive accounts will also be essential to ensuring gaps in records are properly tracked. Finally, ACC needs to implement a process of reconciling Chameleon data for all animals in foster care to ensure the data is accurate and that the animals are receiving adequate care.

RECOMMENDATION 7

ACC needs to improve Chameleon training for shelter staff to ensure all staff members are comfortable using the system and use it appropriately.

RECOMMENDATION 8

ACC supervisors and management should increase supervision and monitoring of data entry to ensure Chameleon data is accurate, consistent, and complete. Increased supervision and monitoring could include regular samples of records, direct supervision of data entry, development of reports that identify common errors, and/or installation of additional applications to track common errors or misuse of the system.

RECOMMENDATION 9 ACC should develop and implement a process to inventory animals in foster care and regularly reconcile information about these animals with data in Chameleon.

ACC's Preparation of Program Reports

As part of our audit, we also reviewed ACC's reporting of program data and statistics. We reviewed three reports from early 2009 and found that ACC created the reports by compiling data taken directly from Chameleon. Although the reliability of Chameleon data is limited due to the issues we describe above, we did not identify any problems with how ACC compiled the data into its reports.

ACC's Process for Calculating Its Euthanasia Rate Varies from the Formula Set in County Code

We also examined the process ACC followed to calculate its 2008 euthanasia rate, and we found that the formula used varies from that set in the King County Code. King County Code, Section 11.04.500 specifies:

“euthanasia rates shall be calculated based on the total number of live cats and dogs take in to [sic] King County custody to include stray, homeless, abandoned, unwanted, or surrendered animals, and animals euthanized at the owner's request.”

The code does not specify how to handle the shelter's existing population at the beginning of the year, and when ACC calculated the number of animals that entered the shelter, it included as intake the animals that were already in the shelter on January 1. ACC management explained to us that these animals received an outcome during 2008, and so it makes sense to include them as intake during 2008.

We agree with this reasoning, and we recommend that ACC work with the King County Council to amend the language in Title 11. Additionally, to ensure that animals are not double counted in

multiple years, ACC should exclude from their analysis animals in the shelter at the end of the year. Otherwise, those animals would be counted as intake for more than one year—the year in which they entered the shelter and as carryover for the following year.

ACC calculated its 2008 euthanasia rate as 21.1 percent. If it had not included carryover from 2007 as intake, the rate would have been 22.0 percent. If ACC had included carryover from 2007 but removed carryover into 2009, the rate would also have been 22.0 percent.

Our second concern related to ACC's calculation of its euthanasia rate is that ACC does not currently include animals in foster care in its analysis. ACC explained to us that the reason for this is that these animals are not currently tracked, and so the data is not complete. We agree that animals in foster care should not be included in analyses until ACC improves its monitoring of them. However, ACC puts a significant percentage of animals into foster care each year (13 percent in 2008), and so the outcome of these animals could have a significant impact on the shelter's performance statistics. As ACC improves its management of foster care data, it should begin to include animals in foster care in its analyses of animal outcomes.

RECOMMENDATION 10

ACC should clarify with members of the King County Council which formula should be used to calculate the annual euthanasia rate in compliance with Title 11.

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4 ORGANIZATIONAL SUCCESS AT ACC AND PERFORMANCE METRICS

Summary

Consistent with our audit objective to review ACC's operations and identify opportunities to improve performance and transparency, this chapter presents our assessment of factors that have limited ACC's ability to improve shelter operations. In completing this work, we interviewed Records and Licensing Services Division managers, former and current ACC program managers, and nearly all of the shelter supervisory and ACO staff to understand the management framework and practices that support ACC staff in carrying out their duties and achieving results. We compared the results of these interviews with factors of organizational success identified by two national organizations recognized for setting standards for organizational quality and excellence. Finally, we summarized performance metrics and measures provided by the UC Davis Koret Shelter Medicine Program that could be used to measure progress in closing the gaps in population management and data system reliability described in Chapters 2 and 3, as well as strengthen ACC management and leadership.

We recognize that ACC has made improvements in shelter operations, has reported a significant decrease in its euthanasia rate, and is making progress towards putting a stable management team in place. However, during the course of our review, we found that inconsistent leadership, shifts in management direction, and sustained organizational uncertainty have limited ACC's ability to make needed improvements in population monitoring and management and to use technology effectively to improve shelter operations. These factors have also

contributed to delays in completing significant projects as well as some confusion about priorities and practices among ACC staff. We offer recommendations to assist ACC in improving its performance, accountability, and transparency.

**What Are
Recommended
Practices for Achieving
Organizational
Success?**

Background

The Baldrige Quality Award Criteria for Performance Excellence and the Auditor General of Canada provide important elements for achieving organizational success. They emphasize that effective leadership and supervision by management is critical to achieving results, and recommended practices include management having the ability to provide guidance and a vision of the organization's future. Additionally, the workforce needs to be led by a cohesive and stable management team. Finally, the management team needs to provide clear direction and exercise sufficient supervision and control to ensure results are achieved. King County's 2008 performance and accountability ordinance directs that all county agencies, departments and offices develop a performance-based culture that promotes accountability, sets priorities, and inspires the workforce to improve overall performance and customer service.

**Several Factors Have
Hindered Animal
Control From Achieving
Organizational Success**

How Well Do ACC's Leadership and Management

Activities Align with Recommended Practices?

Problems hindering effective shelter operations mentioned in the two previous chapters are due to organizational, leadership, and accountability issues which have not been properly addressed for some period of time. While some improvements occurred during our fieldwork in spring 2009, important components of effective shelter operations, involving both people and processes, remain incomplete. Below we summarize three components critical to organizational success at ACC and explain why achieving such success has been elusive. The three critical components include: clear goals and organizational vision; strong leadership and

supervision; and workforce and organizational accountability. Exhibit E below shows characteristics of the three components and the elements crucial to achieving organizational success.⁵

EXHIBIT E Three Elements Crucial to Achieving Organizational Success		
Clear goals and well defined organizational vision	Strong leadership and effective supervision	A workforce accountable for results
<ul style="list-style-type: none"> • Need strong management direction and clearly defined organizational vision • Clarity of purpose needed to inform strategic decisions • Clear vision needed to enable senior managers to make timely decisions on the future of the organization 	<ul style="list-style-type: none"> • Strong, cohesive, and experienced management team • Adequate controls and consistent supervision to ensure effective results • Provides capacity building to achieve organization goals 	<ul style="list-style-type: none"> • Holding employees accountable for measureable results • Strong accountability framework including clear staff expectations and performance appraisals • Periodic measurement and continuous monitoring of results that matter

SOURCE: King County Auditor’s Office

Clear Goals and Organizational Vision

ACC’s Lack of Clear Goals and Broad Vision Has Hindered Organizational Success

In 2007 the King County Council adopted policies to reduce ACC’s euthanasia rate and to ensure the county provides humane care to animals in the shelters—policies that guide the focus of ACC’s activities today. In addition, council Motion 12737 in April 2008 created the King County Animal Services Interbranch Work Group and directed it to develop a strategic and operational master plan for ACC. Consistent with council’s motion, the operational plan provides three options for organization of King County’s Animal Care and Control programs: (1) maintain the status quo; (2) reorganize responsibility of services within different departments of the county; and (3) adopt a community-based service model where

⁵ Criteria for organizational success developed from material from the 2009-2010 Baldrige National Quality Program’s *Criteria for Performance Excellence* (<http://www.baldrige.nist.gov/>) and from a 1997 document, *Auditing the Management of People* by the Office of the Auditor General of Canada.

some or all of ACC services would be provided by a non-governmental partner under contract with the county.

An organization's vision is what guides managers to strategize and prioritize resources. An organizational vision is also an integral part of King County's strategic planning requirement that directs agencies to develop an overall business plan, including mission and vision statements, which are linked to agency goals, objectives, and performance measures. ACC managers reported that they focus current activities and short-term efforts on meeting the two goals set in the recent legislation. For example, in an effort to improve conditions and provide more humane care, ACC relocated its stray hold areas for cats, replaced old cages, adjusted physical space, and increased the overall size of the Kent shelter. ACC reports these efforts have improved shelter operations for animals, shelter staff and customers. However, ACC's focus on these two priorities alone has limited the development of a broader vision for the organization. This is important because an organization's vision is what guides managers to plan and prioritize resources in order to meet long-term goals and achieve organizational success. Moreover, when an organization's vision is shared by employees, the vision can keep an entire organization moving in the same direction toward a common purpose.

**Organizational Success
Enhanced by a
Cohesive and Stable
Management Team**

Strong Leadership and Effective Supervision

Organizational success is also highly dependent on a strong and cohesive management team coupled with effective first-line supervision of day-to-day shelter operations. While, as noted previously in Chapters 2 and 3, shelter operations have improved to some extent, ACC managers and staff consistently reported to us throughout our audit field work that the continued rotation of shelter leadership and lack of permanent appointments to key management positions has delayed implementation of important

shelter management improvements. We confirmed with ACC that leadership of the ACC program manager position has changed six times in the last four years. For much of that time, individuals have served in this position in an “acting” or “interim” capacity as is the case with the current manager. As a result, a number of initiatives needed to correct gaps in ACC’s shelter operations have not occurred. For example, a September 2007 report by outside consultants,⁶ stated that ACC relies on many manual and paper intensive processes, that a number of important processes were not automated, that a number of key modules of the Chameleon data system were not in use, and that ACC lacked the staff resources to implement or maintain current technology and data base information.

Also, as we described in Chapters 2 and 3, gaps in both front line supervision by shelter sergeants and policies and procedures contribute to inconsistent practices. Similar issues are identified in past reviews, including the March 2008 UC Davis report initiated by the King County Executive which stated that:

“In many cases, there were no clearly documented policies or procedures for critical animal care activities; in cases where written procedures did exist, there was often incomplete, contradictory or incorrect information provided; line staff frequently appeared unaware of written policies and consistently reported little or no formal training in key areas of animal care such as cleaning and disease recognition; and observed practices often differed from written procedures where these were available. In some cases, informal systems had been developed by staff members; some of these systems were acceptable, but because they were undocumented they were inconsistently followed. The most

⁶ Animal Services Information System Strategic Plan, Pacific Technologies, September 16, 2007.

common answer received when staff was asked about any animal care process was “it depends on who you ask.”

Without consistent leadership, improvements to shelter management have been delayed.

Workforce Accountability at ACC

Need for Greater Accountability for Results

Two final components of organizational success involve holding staff accountable for achieving results and measuring the organization’s progress toward reaching important goals.

Holding staff accountable for achieving results is a critical component of achieving organization success. Yet at ACC, according to senior managers, performance evaluations have not been completed on most ACO staff in several years. This is inconsistent with King County’s policy that both represented and non-represented employees (non-probationary) receive performance evaluations at least annually. ACOs we interviewed acknowledged this fact and said the lack of performance appraisals did not allow them to discuss performance expectations, individual training needs, or ideas to improve operations. Without such appraisals, ACC staff has not received needed performance feedback for an extended period of time. Moreover, and perhaps most importantly, ACC is forgoing opportunities to align staff efforts with key shelter management activities most closely related to improving the health of animals.

Measuring What Matters: Need for Enhanced Performance Metrics and Measures

Improving organizational effectiveness as well as transparency of operations depends on continued and consistent measurement and analysis of performance. A comprehensive set of measures or indicators tied to organizational performance can provide information needed to align all processes with an organization’s goals. The consultants from UC Davis recommend additional management performance metrics that ACC could use to assess

a number of shelter performance dimensions. Refining data elements along with addressing data control gaps and inaccuracies as described in Chapter 3, could provide ACC management with the information needed to further shape and align future resource needs.

Shelter metrics should be used to identify challenges that must be overcome or to evaluate progress in reaching goals of reducing euthanasia. Because of policy direction, ACC has focused on monitoring and measuring its rate of euthanasia; however, the rate of euthanasia alone does not provide a complete story of shelter performance. For example, by tracking other aspects of shelter population dynamics, such as animal health and behavior characteristics at animal intake, or gathering more specific data on the incidence of disease at the shelter, ACC would have data to more fully explain shelter performance and better align shelter resources. UC Davis Koret Shelter Medicine Program identifies metrics that provide a variety of indicators that could be used not only by ACC but also stakeholders to more accurately review shelter performance.

The following are metrics recommended for monitoring and reporting shelter performance. A complete description of the metrics, including how to calculate specific rates is provided in the Animal Shelter Population Health Management and Metrics report is provided here. UC Davis recommends metrics that support the critical population management activities presented in Chapter 2. Adopting such metrics at ACC would provide a broader range of performance indicators, address existing data gaps, and better align staff resources with critical animal care services.

EXHIBIT F

UC Davis Recommended Metrics for Shelter Management

Category	Metrics
Population Dynamics	<ul style="list-style-type: none"> ➤ Intake <ul style="list-style-type: none"> ○ Animal Health and Behavior Condition ○ Including Owner Request Euthanasia/Over the Counter Euthanasia ➤ Live Release <ul style="list-style-type: none"> ○ Returns to Owner ○ Adoptions ○ Transfers ○ Release ➤ Shelter Death <ul style="list-style-type: none"> ○ Euthanasia and Died in Care ➤ Holding ➤ Rates and Absolute Numbers ➤ Per Capita Rates for Population Dynamic Trends <ul style="list-style-type: none"> ○ Intake ○ Live Release ○ Shelter Death
Capacity Planning and Evaluation	<ul style="list-style-type: none"> ➤ Capacity for Housing and Care <ul style="list-style-type: none"> ○ Required Holding Capacity ○ Numbers of Adequate Housing Units ○ Daily Population Count (Inventory) ○ Staff Hours for Basic Care Relative to Inventory ➤ Capacity of Critical Flow Through Points
Average Length of Stay and Animal Care Days	<ul style="list-style-type: none"> ➤ Care Days to Important Outcomes <ul style="list-style-type: none"> ○ Adoption ○ Transfer ○ Foster Placement and Return ➤ Monitor by Species, Age Group
Incidence of Disease	<ul style="list-style-type: none"> ➤ Incidence of Common Shelter Disease ➤ Track incidence of disease by species and age for common shelter acquired conditions such as <ul style="list-style-type: none"> ○ Respiratory Disease ○ Gastrointestinal Disease ○ Skin Disease ○ Other
Tracking Health Status Changes and Risk Categories for Euthanasia	<ul style="list-style-type: none"> ➤ Evaluate euthanasia absolute numbers and rates as a percent of intake <ul style="list-style-type: none"> ○ Species ○ Age (juvenile vs. adult) ○ Intake Status

SOURCE: UC Davis Koret Shelter Medicine Program, 2009 Report

Conclusions

We recognize that ACC has made improvements in shelter operations, has reported a significant decrease in the rate of euthanasia, and is making some progress towards putting a stable management team in place. However, during the course of our review we found that inconsistent leadership, lack of staff accountability, shifting management direction, and sustained organizational uncertainty have limited ACC's ability to make needed improvements to shelter operations. Finally, gathering new data and tracking of additional shelter practices is needed to provide greater transparency of shelter operations, fully describe shelter performance, and improve the alignment of shelter resources.

In order to achieve organizational success, we make the following recommendations to improve shelter operations and fully develop the capacity of ACC to support animal outcomes.

RECOMMENDATION 11 ACC should hire a permanent Animal Services Manager.

RECOMMENDATION 12 ACC should at least annually conduct performance evaluations of all shelter staff.

RECOMMENDATION 13 ACC should gather additional data and track shelter operations more closely by adopting the performance metrics identified by UC Davis as soon as practicable.

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APPENDICES

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APPENDIX 1

CAPACITY PLANNING, DAILY ROUNDS, AND ANIMAL FLOW-THROUGH PLANNING: SUMMARY OF 3 KEY PRINCIPLES FOR SHELTER ANIMAL POPULATION MANAGEMENT

UC DAVIS KORET SHELTER MEDICINE PROGRAM
SANDRA NEWBURY, DVM
KATE HURLEY, DVM, MPVM

Efficiency in animal shelter population management maximizes life saving capacity. By eliminating unproductive waiting time, average length of stay decreases, which in turn decreases the average daily in-shelter population. Shorter stays and decreased crowding protects health for individual animals as well as the group, decreases stress, and conserves limited resources.

Capacity planning, daily rounds, and animal flow through planning are three key interrelated principles essential for efficient shelter animal population management. Activities and data collection central to each of the three principles depend on aspects of the others in order to function smoothly.

When animals are not moved efficiently through the shelter system, capacity for care and housing are often exceeded because of increased length of stay due to unproductive waiting time. Efficiency is impossible when housing capacity and capacity for care and service are not adequate to meet the demand. When capacity for care and housing are exceeded a cycle is created where animal stress and disease becomes inevitable, staff are stressed, and life saving capacity falls. Without efficient practices in place, an increasing burden on the sheltering system causes animals to suffer and lives are lost unnecessarily.

This summary will identify:

1. Required activities and data collection related to these three key principles
2. Interdependence of management activities
3. Benefits of efficiency
4. A summary of metrics to evaluate population management performance

CAPACITY PLANNING

Required data and activities:

- Use historical and current intake and outcome data to estimate required capacity for:
 - Number of housing units by species and age
 - Required Stray Holding Capacity
 - Owner Surrendered Holding Capacity
 - Adoption Driven Capacity
 - Transfer capacity
 - Service at critical flow through points (ex. Evaluation for health and behavior, spay / neuter)
 - Programmatic care (ex. treatment, behavior enrichment or modification programs)
 - Basic care (cleaning and feeding)

APPENDIX 1 (Continued)

- Evaluate estimates of capacity requirements relative to the number of animals expected to require care, actual staffing, resources and number of appropriate housing units
- Make changes as needed to adjust either intake, number of animals present, staffing and /or number of appropriate housing units so that capacity for care and housing meets expected demand

Interdependence:

- Capacity planning depends on flow-through planning to define the possible housing areas and subtypes that would be required. Numbers of housing units required depends in large part on length of stay in each pathway.
- Capacity planning depends on daily rounds to be sure that animals have their status changed and / or are moved into appropriate areas promptly throughout their shelter stay so that housing areas do not exceed capacity for housing and care.

Benefits:

Increasing efficiency and effectiveness in capacity planning leads to a thorough evaluation of the capacity for care. If appropriate planning is done and actual capacity for housing and care is not exceeded, animal health can be more easily maintained by reductions in exposure to infectious disease, stress and aggressive or agonistic interactions with other animals.

DAILY ROUNDS

Required activities:

- Designation of authority to make decisions
- Addressing each animal's needs each day in a systematic way
- Decision making for outcome pathways
- Scheduling services or programmatic care
- Daily inventory reconciliation including identification checks
- Follow up system to act on need for care, outcome pathway decisions, and scheduling

Interdependence:

- Decision making for outcome pathways depends on quality data collection with a monthly / daily evaluation of population dynamics.
- Animal identification is an essential component of daily rounds, allowing animals to be correctly evaluated, cared for and tracked.
- Adequate capacity at critical flow through points ensures animals will not wait unnecessarily after being assigned to programmatic care or scheduled for services.

Benefits:

Daily rounds facilitates efficiency by directing animal flow-through. Daily rounds also provides a means of ensuring animals' needs are addressed each day. Animals are monitored for development of health and behavior problems allowing early recognition and appropriate intervention.

APPENDIX 1 (Continued)

ANIMAL FLOW-THROUGH PLANNING

Required activities:

- Develop a plan of flow-through pathways
- Identify and evaluate critical flow through points
- Housing plan for sub-populations
- Maintain adequate capacity
- Intake evaluation for all animals
- Evaluate pathways each day as part of daily rounds

Interdependence:

- Planning for each pathway depends on an evaluation of historical data in combination with current population dynamics and expectations.
- Flow-through planning depends on an evaluation of capacity for housing and care at each critical flow-through point.
- Daily rounds facilitates animal flow-through by monitoring each day for each animals' needs.

Benefits:

Flow-through planning helps determine capacity needs for care and service at all critical flow through points. Adequate capacity eliminates unproductive waiting time, reducing length of stay and decreasing the in-shelter population. Flow-through planning helps identify areas of service or programs that have inadequate capacity to meet the needs of the organization.

Metrics for evaluation of population management:

Population dynamics: Live intake, live release, and shelter deaths (euthanasia or died in care) should be evaluated as absolute numbers, rates compared to intake or population at risk, and compared to per capita human population. Special attention should be paid to the historical and current disparity between intake and live release as well as changes in either intake or live release.

Adequacy of housing: Required capacity should be estimated for each housing area and compared to actual numbers of appropriate housing units.

Adequacy of staffing: Staffing requirements for basic care should be calculated from actual average monthly animal inventory and compared to actual staffing for basic care. This evaluation requires tracking of daily average staff hours for basic care and monthly daily average animal inventory.

Actual shelter population (Inventory) compared to capacity: Actual number of animals housed in shelter wards or sections should be compared to requirements or recommendations and number of appropriate housing units (ex. numbers of animals in adoption areas, numbers of animals waiting for transfer, numbers of animals in holding areas, numbers of animals past holding but still housed in holding areas). This evaluation requires collection of monthly averages for daily inventory by ward or housing section as well as a monthly accounting of appropriate housing units.

Average length of stay: Average length of stay should be evaluated by species to all possible outcomes. An additional evaluation by age group within each species (kittens,

APPENDIX 1 (Continued)

adult cats, puppies and adult dogs) may be helpful since length of stay commonly is much shorter for juveniles. Averages should be compared to the target lengths of stay that were established to promote health and welfare and utilized when estimating housing capacity.

Adequacy of capacity for service: Required capacity for service compared to actual capacity for care and service. This evaluation would require data collection for animals needing care at each critical flow-through point (ex. pre-adoption exams, spay/neuter, behavior evaluation or euthanasia) and the actual capacity for how many animals could be cared for by that service.

Shelter acquired disease: Absolute numbers and percentages of animals who enter the shelter healthy or without behavior problems who develop health and behavior problems in shelter care.

Incidence of Disease: Incidence of disease for common shelter diseases such as respiratory disease, gastrointestinal disease and skin disease.

APPENDIX 2

INTAKE AND OUTCOME INFORMATION FOR ALL ANIMALS SERVED BY ANIMAL CARE AND CONTROL SERVICES BETWEEN JANUARY 1, 2007 AND JUNE 30, 2009

Intake Types for All Animals Served by ACC between January 1, 2007 and June 30, 2009

Intake Type	2007	2008	Jan-June 2009
Stray	6,818	5,898	2,392
Owner Surrender	4,230	3,504	1,518
Return of Previous Adoption	271	362	192
Confiscated	243	290	72
Deceased Upon Intake ¹	197	247	160
Euthanasia Request by Owner ²	467	279	117
Other (e.g., wildlife)	4	19	4
<p>Note 1: The disparity between the number of animals with an intake type of "Deceased Upon Intake" and the number of animals with an outcome of "Disposal" in 2007 and 2008 is due to data entry inconsistencies during animal intake.</p> <p>Note 2: It is ACC's policy to conduct an independent behavior and/or medical evaluation of all animals prior to determining that euthanasia is appropriate.</p> <p>Source: Auditor analysis of data from the Chameleon shelter management system pulled on July 8, 2009.</p>			

Outcomes of All Animals Served by ACC between January 1, 2007 and June 30, 2009

Outcome	2007	2008	Jan-June 2009
Adoption	4,952	4,620	1,791
Returned to Owner	1,606	1,345	577
Transferred to a Community Partner	646	1,774	717
Euthanasia ¹	4,108	2,231	694
Died in Care	283	222	102
Disposal ²	517	319	163
Missing in Care ³	81	81	18
<p>Note 1: The count of animals euthanized includes animals brought to the shelter by their owners for euthanasia. It is ACC's policy to conduct an independent behavior and/or medical evaluation of all animals prior to determining that euthanasia is appropriate.</p> <p>Note 2: The disparity between the number of animals with an intake type of "Deceased Upon Intake" and the number of animals with an outcome of "Disposal" in 2007 and 2008 is due to data entry inconsistencies during animal intake.</p> <p>Note 3: ACC staff explained to us that animals can go missing for reasons that include: animals escaping during cleaning or transporting, staff not updating Chameleon with information about an animal's transfer into foster care, and instances in which the data system does not record multiple outcomes on a single day. We discuss the latter two issues in Chapter 3.</p> <p>Source: Auditor analysis of data from the Chameleon shelter management system pulled on July 8, 2009.</p>			

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APPENDIX 3

STATUS OF ACC'S INFORMATION TECHNOLOGY CONTROLS FOR THE CHAMELEON DATA SYSTEMS

Information Technology Control	Status of ACC Controls	Are ACC's Controls Sufficient?
<i>Oversight and Security Management</i>		
Management develops and regularly reviews security control policies that address roles and responsibilities in accordance with industry standards.	ACC has not developed a policy related to Chameleon security or data integrity.	No
Management regularly assesses system or data vulnerabilities and corrects identified weaknesses.	Toward the end of our audit, ACC acquired technical support and has begun to assess the security of the system. Prior to this step, there was no internal technical support or oversight for Chameleon. ACC has not yet concluded its assessment or made improvements.	In Process
System reports are reviewed to assess the integrity of data and processing.	In 2007 and 2008, ACC developed a series of Chameleon reports to enable them to assess the completeness of some data elements. However, ACC does not regularly review reports to monitor the accuracy, consistency, or completeness of the data more generally.	In Process
Procedures are in place to review critical reports on a timely basis.	ACC posts monthly reports about shelter performance on its county Web site. However, shelter management reported to us that they do not use system reports to monitor or make decisions about shelter operations.	In Process
Software is up to date.	The Chameleon software has not been updated since installation in 2006.	No
Effective monitoring controls mitigate segregation of duty risks.	At the time of our audit, there was insufficient monitoring of Chameleon privileges, access, or controls, including those related to segregation of duty risks.	No
<i>Training and Supervision of Users</i>		
Users have adequate training and expertise.	ACOs and ACC leadership consistently reported to us the need for additional Chameleon training. Many ACOs reported that they are uncomfortable using Chameleon and received little training during or after implementation. Additionally, several ACOs reported insufficient supervision of Chameleon use. Finally, we identified several errors in data entry, indicating the need for an increase in training and supervision.	No
Users are provided adequate supervision and review.		No
Procedures are in place to identify erroneous or incomplete data before processing.	ACC has developed a series of reports to assess the completeness of some data elements and to identify discrepancies in data entry. However, we did not observe regular monitoring of data accuracy, consistency, or completeness.	In Process
<i>Access Controls</i>		
User IDs are unique and generic users IDs are not used.	In early 2007, ACC replaced generic user IDs with individual IDs for each user.	Yes
Appropriate access privileges are assigned to each user.	Currently, privileges are not assigned individually. All user accounts have the same privileges, and staff with greater access needs to use the System Administrator account when necessary. It would be more appropriate to assign specific privileges to staff members who require them and restrict access to the System Administrator account to a database expert.	No
Inactive accounts and accounts for terminated employees are removed or disabled.	The current list of Chameleon accounts includes many inactive accounts and accounts for individuals who no longer work at ACC.	No
Sensitive accounts are identified and use is monitored.	Currently, there is no oversight of Chameleon access and no monitoring of use of the System Administrator account. This kind of monitoring and oversight is beginning as ACC partners with technical staff that can provide the expertise necessary to identify and monitor sensitive accounts.	In Process
Access to administrator accounts is limited to users with a valid need, and administrative account passwords are changed at least every 60 days.	Although we did not see evidence that the System Administrator account is widely accessed at ACC, staff reported that more than one individual has access to the account. Additionally, the password has historically been changed infrequently.	No

APPENDIX 3 (Continued)

Reconciliations and Tracking of Key Events		
Reconciliations occur to ensure data in the system matches population in the shelter.	Reconciliations occur regularly; however, the process is not sufficiently supervised and not all animals are tracked appropriately.	In Process
Auditable events are logged for review.	Chameleon's design does not allow for easy tracking of most events, but it does track the resolution of duplicate records. This function is not used consistently, and so not all deletions have been tracked. Additionally, ACC has not implemented any additional procedures to track common errors or misuse of the system.	No
<p>Source: Criteria for the development of controls include guidelines and standards published by the federal Government Accountability Office, the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and King County's Office of Information Resources and Management. Our conclusions regarding the status of ACC controls are based on reviews of ACC policies and procedures; interviews with ACC, OIRM, and Chameleon staff; observations at ACC shelters; and reviews of Chameleon reports.</p>		

LIST OF RECOMMENDATIONS & IMPLEMENTATION SCHEDULE

Recommendation 1:

ACC needs to implement a staffing model or tool that accurately simulates the flow of work over time so that ACC can accurately plan staffing and associated resource needs. Such a model should also align staffing with population dynamics, housing, and program capacity.

Implementation Date: TBD - 2010

Estimate of Impact: Synchronization of staffing and resources with animal population dynamics will improve the quality and access of animals to basic care and critical services.

Recommendation 2:

ACC should adjust the physical location and operational approaches of shelter supervisors so they are more accessible to staff and modify their supervision to support timely monitoring and decision-making.

Implementation Date: TBD - 2010

Estimate of Impact: Changing the physical location and supervisory practices of shelter sergeants will improve communication, documentation, and timeliness of decisions about animal outcomes.

Recommendation 3:

ACC should continue its efforts to implement Grand Rounds and develop approaches to ensure information from the rounds receives appropriate follow-up and is used to monitor and improve animal care practices.

Implementation Date: TBD - 2010

Estimate of Impact: Implementation of daily rounds that includes documentation, review, and follow-up of information about animal health and behavior will improve animal health and reduce animal lengths-of-stay in the shelter.

Recommendation 4: Continue to improve and implement intake procedures that ensure accurate evaluation and recording of information about incoming animals, and that identify planned outcomes for animals.

Implementation Date: TBD - 2010

Estimate of Impact: Collection of complete and accurate information and identification of a planned outcome for an animal ensures appropriate services are provided to support animal health and timely outcomes.

LIST OF RECOMMENDATIONS & IMPLEMENTATION SCHEDULE (Continued)

Recommendation 5: ACC should develop and implement IT controls that include: sufficient management of system security and oversight, improved training and supervision of users, alignment between user access and user needs, regular reconciliations of all data records for animals in the county's care, and increased monitoring of user activities that impact data reliability and integrity.

Implementation Date: TBD - 2010

Estimate of Impact: Effective IT controls will help ACC safeguard its shelter data system from accidental misuse or abuse, demonstrate the transparency of its processes for collecting and reporting data, and improve the reliability of program data.

Recommendation 6: ACC needs to continue to engage technical support for the shelters to ensure Chameleon software is updated, is working properly, and has been sufficiently customized to meet the shelter's needs. Additionally, ACC needs to improve its use of IT resources, including Chameleon, to facilitate shelter activities and improve the flow of animals through the shelter.

Implementation Date: TBD - 2010

Estimate of Impact: With continued technical support, ACC can ensure technical resources are being used effectively to track animals in the shelter and facilitate efficient shelter operations.

Recommendation 7: ACC needs to improve Chameleon training for shelter staff to ensure all staff members are comfortable using the system and use it appropriately.

Implementation Date: TBD - 2010

Estimate of Impact: Ensuring all shelter staff members are sufficiently trained in use of the data system will improve the reliability of program data.

Recommendation 8: ACC supervisors and management should increase supervision and monitoring of data entry to ensure Chameleon data is accurate, consistent, and complete. Increased supervision and monitoring could include regular samples of records, direct supervision of data entry, development of reports that identify common errors, and/or installation of additional applications to track common errors or misuse of the system.

Implementation Date: TBD - 2010

Estimate of Impact: Increased oversight of data entry will improve the reliability of program data.

LIST OF RECOMMENDATIONS & IMPLEMENTATION SCHEDULE (Continued)

Recommendation 9: ACC should develop and implement a process to inventory animals in foster care and regularly reconcile information about these animals with data in Chameleon.

Implementation Date: TBD - 2010

Estimate of Impact: Reconciling data for animals in foster care will help ACC account for all animals in the county's care and will improve the accuracy of Chameleon data and the reliability of program reports.

Recommendation 10: ACC should clarify with members of the King County Council which formula should be used to calculate the annual euthanasia rate in compliance with Title 11.

Implementation Date: TBD - 2010

Estimate of Impact: Clarifying the formula for calculating the annual euthanasia rate will help ACC ensure it is in compliance with County Code and will also improve the transparency of ACC program reports.

Recommendation 11: ACC should hire a permanent Animal Services Manager.

Implementation Date: TBD - 2010

Estimate of Impact: Consistent leadership in key management positions will help ACC effectively carry out key shelter management initiatives.

Recommendation 12: ACC should at least annually conduct performance evaluations of all shelter staff.

Implementation Date: TBD - 2010

Estimate of Impact: Providing performance feedback and discussing expectations will help ACC managers and staff identify opportunities and activities most closely related to improving the health and outcomes for animals.

Recommendation 13: ACC should gather additional data and track shelter operations more closely by adopting the performance metrics identified by UC Davis as soon as practicable.

Implementation Date: TBD - 2010

Estimate of Impact: Using a comprehensive set of measures will provide ACC with information needed to align processes and resources and explain shelter performance.

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EXECUTIVE RESPONSE



King County

Kurt Triplett
King County Executive
401 Fifth Avenue, Suite 800
Seattle, WA 98104-1818
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KING COUNTY AUDITOR

OCT 14 2009

RECEIVED

October 8, 2009

Cheryle A. Broom, County Auditor
Metropolitan King County Council
King County Courthouse
516 Third Avenue, Room 1033
Seattle, WA 98104-3272

Dear Ms. Broom:

Thank you for your letter of September 16 and the opportunity to review and comment on the proposed final report of the Performance Audit of Animal Care and Control. I understand that this performance audit was conducted in two parts, and the second report will be provided in October.

There were two stated objectives of this audit. First, to review Animal Care and Control's (ACC) approaches to monitoring shelter population and second to determine the reliability of animal care and control shelter population statistics and performance indicators. The report also discusses organizational success.

While there is certainly still room for improvement, we are proud of the progress that ACC has made in the last two and a half years, under severe budget constraints. The agency has worked hard to improve care for the animals and lower the euthanasia rate to just over 20 percent in 2008 and in 2009, the rate continues to decline. ACC has implemented programs improving many areas of operations including and not limited to cleaning and care for the animals, veterinary medical attention, off-site adoption and rescue programs, staff accountability, and customer service. In addition, a number of capital projects have been completed improving the physical site including adding new modular buildings for cat adoptions, purchasing new cat cages, moving existing cat cages away from the dogs, upgrading the cat isolation room, covering the floor drains in the dog runs, and repairing dog caging. These improvements have been made as a result of dedicated staff and volunteer efforts during a period of organizational uncertainty.

The ACC performance audit contains specific recommendations related to the physical elements in the shelter itself, the information system used to track and manage animal care, legislative revisions, as well as staffing and performance metrics, see Attachment A. We concur with the recommendations. However, implementation of any of the recommendations

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and complies with the Americans with Disabilities Act*



EXECUTIVE RESPONSE (Continued)

Cheryle Broom
October 8, 2009
Page 2


will require additional resources that the County simply does not have. I have notified our regional partners that King County will no longer be providing animal care and control services.

The recommendations identify issues that will need to be addressed in the new model and by the new provider. We will provide assistance as necessary during this transition.

I appreciate the professionalism of both the executive and audit staff, throughout this audit process.

If you have any questions regarding the response, please contact Carolyn Ableman, Division Director, at 206-296-3185.

Sincerely,


Kurt Triplett
King County Executive

Enclosure

cc: Valerie Whitener, Senior Principal Management Auditor, King County Council
Noel Treat, Chief of Staff, King County Executive Office
Beth Goldberg, Deputy Director, Office of Management and Budget
Bob Cowan, Director, Department of Executive Services (DES)
Carolyn Ableman, Director, Records and Licensing Services, DES
Caroline McShane, Deputy Director, Finance and Business Operations Division

EXECUTIVE RESPONSE (Continued)

Attachment A-Executive Response-Review of Animal Care and Control

Recommendations	Agency Position Concur, Partially concur, or Do not concur.	Schedule for Implementation Indicate your plan and a date for implementation.	Comments Briefly summarize your reasons for partial or non-concurrence. Concurrence does not require comment.
General Statement		<p>Based on the decision of the Executive to phase out animal care and control services by June 2010, the dedication of existing resources to develop and implement new program elements is not prudent at this time. However, any future program planning activities are contingent on the reversal of this decision, and additional funding that supports the plan's development.</p> <p>At this time, all available resources of King County Animal Care and Control (KCACC) are being applied to produce the current level of services.</p> <p>As a priority, KCACC is in the process of moving the Kent Shelter as a preventative measure for potential Green River flooding. The current plan is to vacate the shelter by November 1st.</p>	

EXECUTIVE RESPONSE (Continued)

Attachment A-Executive Response-Review of Animal Care and Control

Recommendations	Agency Position	Schedule for Implementation	Comments
<p>1. ACC needs to implement a staffing model or tool that accurately simulates the flow of work over time so that ACC can accurately plan staffing and associated resource needs. Such a model should also align staffing with population dynamics, housing, and program capacity.</p>	<p>Concur</p>	<p>Please see General Statement. Should the Executive's decision be revisited, a plan for a staffing model tool will be developed for potential funding.</p>	<p>Program capacity has not been established at KCACC. Setting program capacity has significant implications and requires a comprehensive policy discussion.</p> <p>At this time, the County is an open admissions shelter. There have been times when we have had to ask owners surrendering their animals to wait a day or two before coming back to us OR to go seek alternatives for surrendering their pets. We have done this so we can manage our residents adequately, not provide substandard care and housing and because our priority is on the lost & stray pets brought in. Setting a capacity implies that when that capacity is reached, the shelter will have several options when additional animals come in:</p> <ol style="list-style-type: none"> 1. Turn away the animals, or set an intake appointment for the citizen for a future date when it is expected that shelter population will drop below capacity; 2. Euthanize animals currently in the shelter to create space; and 3. Send animals already in the shelter into foster care or to rescue (if this option hasn't already been explored, which it undoubtedly will have already been explored).

EXECUTIVE RESPONSE (Continued)

Attachment A-Executive Response-Review of Animal Care and Control

Recommendations	Agency Position	Schedule for Implementation	Comments
<p>2. ACC should adjust the physical location and operational approaches of shelter supervisors so they are more accessible to staff and modify their supervision to support timely monitoring and decision-making.</p>	<p>Concur</p>	<p>Please see General Statement.</p> <p>Should the Executive's decision be revisited, a plan for modifying the physical location and operational approaches for supervisors will be developed for potential funding.</p> <p>As a priority, KCACC is in the process of moving the Kent Shelter as a preventative measure for potential Green River flooding. The current plan is to vacate the shelter by November 1st.</p> <p>Any no-cost opportunities at this new site to support this recommendation will be assessed, and taken advantage of.</p>	
<p>3. ACC should continue its efforts to implement Grand Rounds and develop approaches to ensure information from the rounds receives appropriate follow-up and is used to monitor and improve animal care practices.</p>	<p>Concur</p>	<p>The Grand Rounds process will continue in the new facility, and as long as KC provides animal care with veterinary oversight.</p>	
<p>4. Continue to improve and implement intake procedures that ensure accurate evaluation and recording of information about incoming animals, and that identify planned outcomes for animals.</p>	<p>Concur</p>	<p>Please see General Statement.</p> <p>Should the Executive's decision be revisited a plan to modify intake procedures will be developed for potential funding.</p>	

EXECUTIVE RESPONSE (Continued)

Attachment A-Executive Response-Review of Animal Care and Control

Recommendations	Agency Position	Schedule for Implementation	Comments
<p>5. ACC should develop and implement IT controls that include: sufficient management of system security and oversight, improved training and supervision of users, alignment between user access and user needs, regular reconciliations of all data records for animals in the county's care, and increased monitoring of user activities that impact data reliability and integrity.</p>	<p>Concur</p>	<p>Please see General Statement.</p> <p>Should the Executive's decision be revisited, a plan to fully implement security, assess appropriate access based on roles and responsibilities, and the reconciliation of data records will be developed for potential funding.</p> <p>Such a plan would be developed (contingent on appropriate funding) to:</p> <ol style="list-style-type: none"> 1. Upgrade to the most current version of Chameleon, which would include tighter security safeguards including bar code system 2. Evaluate the business needs of the staff and flow within the shelter to develop application roles which would include an assessment of the appropriate access to Chameleon 3. Dedicate resources to fully implement application roles identified and the associated security within Chameleon. 	
<p>6. ACC needs to continue to engage technical support for the shelters to ensure Chameleon software is updated, is working properly, and has been sufficiently customized to meet the shelter's needs. Additionally, ACC needs to improve its use of IT resources, including Chameleon, to facilitate shelter activities and improve the flow of animals through the shelter.</p>	<p>Concur</p>	<p>Please see General Statement.</p> <p>Should the Executive's decision be revisited a plan to fully implement the updates to Chameleon and the identification of funding to secure appropriate technical support will be developed for potential funding.</p> <p>Such a plan would be developed to update the software to the newest version level and to identify both a technical and business resource to partner to</p> <ol style="list-style-type: none"> 1. identify the capabilities of the software to facilitate efficient processes in sheltering and animal flow throughout and 2. facilitate the changes in business processes to take advantage of the capabilities of the software. 	

EXECUTIVE RESPONSE (Continued)

Attachment A-Executive Response-Review of Animal Care and Control

Recommendations	Agency Position	Schedule for Implementation	Comments
7. ACC needs to improve Chameleon training for shelter staff to ensure all staff members are comfortable using the system and use it appropriately.	Concur	<p>Please see General Statement.</p> <p>Should the Executive's decision be revisited, a plan to fully train shelter staff on the use of Chameleon will be developed for potential funding.</p> <p>Under such a plan training would be a part of an overall update of the system (see responses to recommendations 5 and 6)</p>	
8. ACC supervisors and management should increase supervision and monitoring of data entry to ensure Chameleon data is accurate, consistent, and complete. Increased supervision and monitoring could include regular samples of records, direct supervision of data entry, development of reports that identify common errors, and/or installation of additional applications to track common errors or misuse of the system.	Concur	<p>Please see General Statement.</p> <p>Should the Executive's decision be revisited, a plan to provide better oversight of data integrity will be developed for potential funding.</p> <p>At this time, the first priority for supervisors and managers is managing the shelter move to a new facility by November 1st.</p> <p>We agree that the supervision and monitoring of data entry could be strengthened; however this can only be accomplished by providing additional resources, which simply are not available. Depending upon the model transition program chosen, resources could become more available by allowing a shift in shelter/animal care priorities with more resources being diverted into data monitoring.</p>	<p>The types of oversight within this recommendation may not be included within the Chameleon application. Gaps in the application, which were not previously identified, would need to be closed with processes outside the current application.</p>
9. ACC should develop and implement a process to inventory animals in foster care and regularly reconcile information about these animals with data in Chameleon.	Concur	<p>Please see General Statement.</p> <p>Should the Executive's decision be revisited, a plan to fully implement the inventory process within Chameleon will be developed for potential funding.</p> <p>Under such a plan, the inventory module would be fully implemented (see recommendation 5). Further assessment would be necessary to develop a process for continual checks on animals in foster care.</p>	<p>The current foster program monitoring requires more staff time to help manage the foster animals as well as communications with the hundreds of foster parents.</p>

EXECUTIVE RESPONSE (Continued)

Attachment A-Executive Response-Review of Animal Care and Control

Recommendations	Agency Position	Schedule for Implementation	Comments
10. ACC should clarify with members of the King County Council which formula should be used to calculate the annual euthanasia rate in compliance with Title 11.	Concur	Please see General Statement. Should the Executive's decision be revisited, a plan to modify Title 11 will be developed and appropriate changes will be proposed.	If the County were going to continue as a service provider we would recommend implementation of the Aslomar Accords method of tracking shelter statistics. This is a recommended model across the U.S. The Council may want to review these matrixes for the calculations.
11. ACC should hire a permanent Animal Services Manager.	Concur	Please see General Statement. Should the Executive's decision be revisited, a plan to hire a permanent Animal Control Services manager would be developed.	
12. ACC should at least annually conduct performance evaluations of all shelter staff.	Concur	ACC is completing evaluations for all shelter and field staff for the 2009 evaluation period. For future evaluation periods an implementation plan for this recommendation is contingent on whether the County will continue as service provider for animal care and control and whether additional resources are provided to implement the recommendation, or an external party engaged to provide the services.	
13. ACC should gather additional data and track shelter operations more closely by adopting the performance metrics identified by UC Davis as soon as practicable.	Concur	Please see General Statement. Should the Executive's decision be revisited, a plan to gather data, track shelter operations and adopt UC Davis performance metrics will be developed for potential funding.	UC Davis metrics: "Capacity Planning and Evaluation," - See comments for Recommendation #1 "Average Length of Stay and Animal Care Days," - Current County policy decisions impact this metric, particularly the euthanasia mandates. KCACC is directed to save every animal that fall into the treatable category. This directive increases the average length of stay and care days, even as improvements are made in incidence of disease and foster care.

ANIMAL SHELTER POPULATION HEALTH MANAGEMENT AND METRICS

Koret Shelter Medicine Program
Center for Companion Animal Health
U C Davis School of Veterinary Medicine
www.sheltermedicine.com

Sandra Newbury, DVM
Kate Hurley, DVM, MPVM

I. KEY SHELTER ACTIVITIES TO SUPPORT POPULATION MANAGEMENT

1. **Daily rounds** (See Appendix A: Action List and recorded webinar on PetSmart Charities website)
2. **Monitor animals daily for health and behavior** (See Appendix B and C: Monitoring sheets for cats and dogs)
3. **Flow through planning** (See recorded webinar on PetSmart Charities website)
 - Requires adequate staffing and capacity of critical flow through points
4. **Capacity evaluation and planning** (See also metrics section and recorded webinar on PetSmart Charities website)
 - Adequacy of housing
 - Adequacy of staffing
 - Adequacy of facilities
 - Evaluation of capacity of critical flow through points
5. **Intake animal evaluation and data entry**
 - Age estimation
 - Intake status
 - Health
 - Behavior
 - Pathway planning
6. **Daily evaluation and reconciliation of shelter population with database** (inventory)

1. Daily rounds

Daily rounds is a systematic process by which animal needs are identified, decisions are made and follow through is supervised by a staff person with training and authority to make population management decisions based on knowledge of the needs of each individual and the organization as a whole. Daily rounds may be the single most important tool for population management in shelters.

In order to implement daily rounds:

- ✓ **Identify a veterinarian with knowledge, training, and authority sufficient to implement and supervise daily rounds.**
- ✓ **Evaluate all animals on or before their “due out” date.**
- ✓ **Explicit decisions must be made and acted upon for each animal with clear deadlines and expectations either prior to the due out date, on the “due out” date, or within a short defined period following the “due out” date.**
- ✓ **Implement a clear system to communicate the decisions and actions required based on daily rounds. (See Appendix A: Action list.)**
- ✓ **Implement a system, with supervision and accountability, that ensures enactment of decisions and actions communicated through the daily rounds process.**
- ✓ **Identify problem areas where insufficient capacity exists to allow prompt action to be taken once flow-through decisions have been made.**

Instructions for daily rounds

Assess each animal daily and ensure that all needed steps have been taken for that animal that day, including:

- Transfer of strays to appropriate holding facility
- Behavioral and/or medical assessment to determine adoptability
- Spay/neuter surgery or other medical procedures required before adoption
- Movement from areas such as isolation or quarantine to adoptable areas as soon as the animal is recovered
- Rescue group contact and pick-up
- Behavioral and/or medical care to alleviate suffering and improve adoptability
- Euthanasia – decision and performance

The daily assessment should include the shelter manager, veterinarian and director working together at least once a week. The assessment should include a look at the overall condition of each ward (smell, cleanliness, noise, overall presentation to adopters) and attention to each animal's paperwork, cage/kennel, and an assessment of the animal's physical and mental condition:

Paperwork: is there any indication on the paperwork that the animal has a behavioral or physical condition that will present special challenges for adoption (e.g. a description that the animal was surrendered for a serious behavior problem)? If so, is there information for adopters describing what steps have been taken to mitigate the problem, or other information that might encourage the animal to be considered for adoption?

Cage/kennel: what is the condition of the animal's environment? Is there evidence of illness, such as diarrhea or sneeze marks on the walls? Is it humane for the amount of time the animal has been held? If the animal has been in that kennel for more than one month, does it have enrichment equivalent to that expected in an adoptive home (e.g. room to stretch to full length, choice of hard and soft surfaces for resting, toys and access to human contact and exercise)?

Animal: Is there any evidence of illness or kennel stress? Is there anything about the animal's behavior or appearance that might deter adopters, such as a very dirty or matted hair coat or aggressive barking at by-passers? If so, what measures are being taken to alleviate or further evaluate these problems? A more extensive evaluation of each animal's physical and mental condition and adoptability should be made every two weeks. This should include taking the animal out of the kennel, running hands over the body to look for weight loss, sores or other physical problems, and reassessment of the animal's overall well being. Ideally animals should also be weighed every two weeks while in the shelter, as weight loss or gain is a common problem in long-term housed animals.

2. Monitor animals daily for health and behavior (See Appendix B and C: Monitoring sheets for cats and dogs)

Monitoring animals in their housing units is an important support to the daily rounds process and dramatically improves the likelihood that signs of problems will be identified early. For example, inappetance, vomiting, or diarrhea could possibly all be missed if no note is taken prior to cleaning and re-filling the food. Care staff who work with the animals early in the morning may be best able to pick up on signs of problems before cages are cleaned and food is replaced. Monitoring sheets, filled out by direct care staff, can then be consulted by those doing rounds even after the signs of illness have been cleaned away.

- ✓ **Provide training for care staff in recognition of clinical signs of disease.**
- ✓ **Provide training for care staff in utilizing monitoring sheets for cats and dogs.**
- ✓ **Utilize monitoring sheets daily for each animal in the shelter.**

3. Flow through planning

Pathway planning

Along with implementation of daily rounds, pathways can be identified to help efficiently track animals toward particular outcomes.

For many shelters, pathways fall in three general categories

1. Adoption
2. Transfer or rescue
3. Euthanasia.

Reclaim is also a possible pathway but most commonly cannot be planned for. The table below shows pathways can be broken down more specifically to include: immediate move to adoption (MTA); MTA after holding; MTA offsite; immediate transfer or diversion to other agencies; transfer or rescue post holding; or transfer or rescue after a brief waiting period; and either immediate euthanasia or euthanasia after a required holding period.

<i>Intake to Outcome Flow-Through Pathways</i>							
<i>Intake</i>							
<i>Adoption</i>			<i>Transfer</i>			<i>Euthanasia</i>	
<i>Immediate MTA</i>	<i>MTA post-holding</i>	<i>MTA offsite</i>	<i>Immediate transfer</i>	<i>Transfer post-holding</i>	<i>Transfer / Rescue short wait?</i>	<i>Immediate Euthanasia</i>	<i>Euthanasia post-holding</i>

Animals may be shifted from one pathway to another during their shelter stay. Pathways should be defined at intake and then reviewed daily as part of daily rounds. Some shelters have used color-coded dots placed on animal identification cards to indicate the currently defined or “working” pathway for each animal. For example, a blue dot on the kennel card indicates moving toward adoption, a green dot indicates moving toward transfer, and a red dot indicates moving toward euthanasia.

If other outcomes become available, pathway planning should be done for that new possible outcome. Some outcomes such as immediate transfer for feral cats may need a specific pathway defined. At the point of intake a pathway can be identified for each animal. Pathways will define housing or temporary holding location and required actions for that animal.

Critical flow through points occur in each pathway and include any service or procedure an animal may require in order to move through the shelter system. Critical flow through points often include: Transfer partnership contact and pick up; Intake exams; MTA exams; Physical movement to adoption areas; Spay / Neuter surgery; Rescue and Transfer coordination; Adoption; and Euthanasia.

- ✓ **Identify possible outcomes for animals entering the shelter.**
- ✓ **Develop a pathway plan including each outcome.**
- ✓ **Identify critical flow through points for each pathway.**
- ✓ **Ensure adequate capacity at each critical flow through point relative to expected numbers of animals needing care at that point.**
- ✓ **Identify a pathway for each animal at the time of intake.**
- ✓ **Evaluate pathways daily as part of rounds.**
- ✓ **Make pathway changes as appropriate, scheduling or rescheduling activities at critical flow through points.**

KEY SHELTER METRICS

1. Population dynamics

- Intake
 - Including ORE / OCE
- Live release
 - Returns to Owner
 - Adoptions
 - Transfers
 - Release
- Shelter Death
 - Euthanasia and Died in Care
- Holding
- Rates vs. absolute numbers
- Per capita rates for population dynamic trends
 - Intake
 - Live Release
 - Shelter Death

2. Capacity planning and evaluation

- Capacity for Housing and Care
 - Required Holding Capacity
 - Numbers of adequate housing units
 - Daily population count (Inventory)
 - Staff hours for basic care relative to inventory
 - Capacity of critical flow through points

3. Average length of stay and animal care days

4. Incidence of disease

- Incidence of common shelter diseases

5. Tracking health status changes and risk categories for euthanasia

Overview of metrics

Shelter metrics are used most often to help identify challenges that must be overcome or to evaluate progress in reaching goals of reducing euthanasia for shelter animals in a community. Careful comprehensive evaluation of shelter population dynamics, including an additional evaluation of in-shelter parameters, provides a multi-dimensional view of what is happening in the organization and helps ensure goals or performance measures are not misinterpreted in ways that may undermine efforts to save more lives.

Shelter metrics are also an essential tool for understanding population health and population planning. Evaluation of shelter data from previous years in combination with an ongoing awareness of current trends facilitates capacity planning and flow through management. Estimates of the need for housing capacity as well as capacity at critical flow through points can be made monthly based on the prior years and the current trends.

When shelter population dynamics can be evaluated for an entire community as well as the individual shelters, the challenges as well as the progress may be even more clearly identified and addressed.

Population dynamics are primarily represented by intake, outflow, and animals that remain in the shelter or otherwise under the care of the organization. Each component will be individually addressed as well as evaluations that involve some components of each. Shelter metrics that help describe animal flow through practices and rates of disease will also be discussed.

1. Population Dynamics

Intake

Shelter intake drives many aspects of population management planning. A clear understanding of changes and trends in the numbers and categories of animals presenting in need of care is essential in order to effectively plan care and evaluate progress of any programs or resource expenditures intended to reduce shelter intake.

It is essential to record and monitor intake so the overall numbers can be broken down to give a more specific picture of various sub-categories such as:

- Intake over time
 - *Broken down into the categories listed below*
 - Change in absolute numbers
 - Percentage change from previous time period
 - Monthly daily averages with range
- Intake by species
- Intake by age group

- Define Date of Birth data entry field to be used for this purpose
 - Age* (Requires age estimation training for intake staff)
 - Define data entry age groups for puppies and kittens
 - Entered age into computer software by back counting from current date to assign an estimated date of birth
 - Define puppy and kitten as below 5 months of age
 - 5 months is an age where susceptibility and ability to effectively immunize for important life threatening diseases through vaccination changes
 - Below 5 months of age staff should be able to estimate age accurately to within a few weeks
- Provide training for staff to estimate and record age at admission (Please see PetSmart Charities recorded webinar “How Old Are You Now?”)
- Intake by source (type)
 - Owner surrender
 - Stray
 - Jurisdiction: Accurate source information (zip code)
 - Transfer in from other shelters / programs
 - Returns
 - Seizures, legal cases, or bite quarantines
 - Owner consents to euthanasia
 - Owner requests euthanasia
- Intake Status: Health and behavior
 - Provide adequate staffing and staff training to recognize disease and behavior
 - Define basic fields to evaluate health
 - ie.
 - Sick
 - Healthy
 - Injured
 - Subcategories
 - Respiratory disease
 - Gastrointestinal disease
 - Skin disease
 - Other
 - Define basic fields to evaluate behavior

ie.

- Friendly
- Non-interactive
- Fearful
- Aggressive
- Subcategories
- Track changes
 - Deteriorations
 - Rehabilitation

Live Release, Shelter Death (euthanasia and died in care), and Holding

- Absolute numbers and percentages

Disparity between intake and live release (by species*, age group, intake type, etc.)

- Monthly
- Daily averages by month
- Annually

Live Release is the sum of animals leaving the shelter through adoption, rescue placement, shelter transfer or reclaim by owners; all positive outcomes are included. Average daily intake can be compared with average daily live release as a means of evaluating and planning for shelter population dynamics and animal flow-through. While every effort should be made to improve the percentage of animals who will leave the shelter alive, it is essential to monitor the difference between intake and live release in order to effectively manage the shelter population without creating additionally crowded conditions. Crowding, ultimately leads to increases in disease and stress for staff and animals, which may ultimately, negatively impact the live release rate.

Euthanasia numbers are simply the number of animals euthanised during the time period. Report total euthanasia absolute numbers as well as absolute numbers for owner requested and owner consented euthanasia.

Shelter death includes euthanasia and animals who died while in shelter care (including foster care, transport or outside veterinary services). Large numbers or substantial increases in the numbers of animals who die in care are frequently indicative of poor husbandry or decision making problems.

Many shelters report statistics based on information about only live release and euthanasia without reporting or examining holding numbers. In most cases, live release and euthanasia do not give the complete picture. The sum of live release and euthanasia for a given time period rarely equals 100% of the animals who came through the system during the time period. Holding or undispositioned animals make up the difference.

Holding is the number of animals who came into the organization and stayed, the number of animals who were not dispositioned. Holding numbers can be complicated greatly when animals leave the shelter system but are not properly dispositioned in the database. Regular, daily inventory checks followed by reconciliation with the database must be done so that undispositioned animals truly represent the number of animals in holding instead of representing a failure with data entry. Depending on how rates are calculated, holding can have dramatic effects. (Please see the example in the table below.)

Presentation of absolute numbers for intake, euthanasia, and holding is the most transparent we can possibly be, but may make interpretation difficult. One common choice is to present absolute numbers as data in a table. Tables allow us to effectively organize the absolute numbers. Annotated graphs allow even better visualization.

Rates and percentages

Once we begin to discuss rates we need to be even more careful about clarification. How have we calculated the rate we are presenting? When we talk about a change in percent, do we mean compared to the percent we calculated last time or a change in the actual percentage. As an example, if we say we saw a 50% increase in the live release rate that may mean something very different than the live release rate increased 50%. We can't know unless more information is given. We might mean that the live release rate increased from 4% to 6% or we might mean the live release rate increased from 4% to 54%. We need to be careful with our language.

Here is an example using careful language.

- *“The live release rate for cats, calculated as the number of all animals whose outcome was to leave the shelter alive during 2007 divided by the intake number of all cats during the same time period, increased in 2007 from 4% to 6%, a 50% increase compared to the previous year.”*
- *(Live release rate =(2007 Adoptions+Reclaims+Transfers+Rescue) / 2007 Total Intake)*

Calculating Live Release Rate

Live release rate and “Save Rate” are often used interchangeably but depending on how they are defined may not be identical statistics. Live release rate should be calculated as a percent of total intake for the time period rather than as a percent of total outcomes during the time period as Save Rate is commonly defined. Calculating “Save Rate” as a percentage of total outcomes can skew the rate to seem as though more animals are being released alive from the shelter even when the absolute numbers have not changed at all. Increasing holding, which leads to shelter crowding, improves the “Save Rate” dramatically but does not affect the live release rate as a percentage of intake. Live release as a percent of intake gives a

clearer picture of how many animals are leaving the shelter’s care through positive outcomes. (See example below and also rolling live release rate description further below.)

Baseline data for example		Number of animals
Intake for the time period	Animals in	100
Outcomes for the time period	Released alive	50
	Euthanasia and shelter death	25
Holding	Animals still in care	25

Live Release Rate Fluctuations	Baseline	Increased holding to 35	Greater increased holding to 45
LRR intake	50/100=50%	50/100=50%	50/100=50%
LRR outcomes	50/75=65%	50/65=77%	50/55=91%

The example above shows the potentially misleading and dangerous effects of reporting live release as a percent of outcomes. The LRR or “Save Rate” increases from 65% to 95% through increased holding even though no more than 50 animals ever leave the facility through positive outcomes. Increased holding, beyond the facility’s capacity for care interferes with the overall life saving capacity of the organization.

Per capita intake and euthanasia tracking

In 2009, shelters in the US average approximately 30 animals handled per 1,000 people and euthanize about 12.5 animals per 1,000 people. (Andrew Rowan, HSUS, “Animal Sheltering Trends in the US”, March 11, 2009) While tracking live release and euthanasia numbers and rates relative to intake serves as a practical tool for management and planning, tracking changes in euthanasia, live release and intake per capita may best normalize data to evaluate progress or identify particular challenges in each community. It is likely that as per capita shelter intake falls, absolute numbers and per capita euthanasia may be proportionately decreased even though it may become increasingly difficult to achieve or maintain a high live release rate as a percent of intake (or outcomes) because the majority of animals entering the shelter may be more difficult or inappropriate to place into adoptive homes.

“If a community gets pet overpopulation completely under control, then most of the animals entering shelters will be not puppies and kittens and other adoptables or rehabilitables, but rather the severely injured, incurably ill, ex-fighting dogs, and biting cases--and the euthanasia rate will go to 100%, even as the number of animals killed per 1,000 residents of the community falls to nearly nothing. The only fair comparison is done by pooling all of the data from all of the major shelters

...serving a community, whether it is one, two, or 20, and then comparing the rates of each event to the human population.” (Merritt Clifton, Best Friends Forum, November 10, 2006)

As shelter intake falls in response to programs or community action to reduce overpopulation, it is likely that the number of the most easily adoptable animals presenting to the shelter, puppies and kittens, will decrease first. In fact, the absolute numbers of puppies and kittens presenting to shelters is a frequently used metric to assess progress from spay / neuter programs. A declining percentage of easily adoptable animals entering the shelter makes it increasingly difficult or, at times, inappropriate to maintain the live release rate as a percent of intake.

“If you totally eliminate pet overpopulation, you will receive no easily adoptable animals. Thereafter, your "save rate" will fluctuate not so much relative to your own ability and willingness to treat animals, as relative to the severity of the conditions that bring them to you in the first place. So, suppose this year you have a "save rate" of 90%. Then next year you get 60 attack-trained pit bulls in one seizure from a truck that breaks down while crossing the city. Your "save rate" will immediately drop by more than one dog per week. Does that mean your management ability went to hell?” (Merritt Clifton, Best Friends Forum, November 10, 2006)

Tracking shelter population dynamic data compared to human population growth also helps to highlight possible causes for increasing absolute numbers of animal intake in growing communities. As human population grows, it is likely shelter intake may increase and with it the need for increased resource allocation (including housing, staffing and other services) in order to serve the additional animals. Additional resources will be required even if the increasing human population also affords greater opportunities for adoption or other live release outcomes because the animals must be cared for by the shelter from intake to outcome.

Intake compared to live release

Disparity between intake and live release is an underlying challenge that determines the numbers of animals that must be euthanized. The difference between live release and intake is an essential metric, to be monitored daily, monthly and annually as a means of assessing progress toward increasing the life saving capacity of the community, planning for animal flow through, and evaluating resource allocation and policies for shelter entry.

Average daily live release compared to intake

Tables, graphs or descriptions of disparity between two figures may also be valuable tools. Below is an example showing the average daily disparity between intake and live release for one shelter.

Table 1

2007 DOGS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
Average Daily Intake	44	43	45	47	58	60	53	52	49	52
Average Daily LR	19	20	20	17	17	17	16	17	17	13
Daily Disparity	25	23	25	30	41	43	37	35	32	39

Rolling Live Release

Rolling live release rate includes all the animals that could have been released alive during the time period. A rolling live release rate adjusts for a growing or expanded in-shelter population, to get a clearer picture of what percentage of all animals being cared for are leaving the shelter through live release.

If starting shelter inventory is 50 animals, 100 animals are admitted during the time period, and 75 are released alive:

Rolling Live Release =

$$\frac{\text{Animals Released Alive during the time period}}{\text{Animals on hand at start time} + \text{Total live intake during the time period}}$$

(Animals on hand at start time + Total live intake during the time period)

Rolling Live Release Rate = 75 / (100 + 50) = 50% of all animals who could have potentially been released during the time period, left the shelter alive.

A rate is evaluated over a defined period of time. In order to calculate a rolling live release rate, the number of animals in the shelter must be used as the start point for each time period. For example, to calculate an annual rolling live release the denominator would include the number of animals on hand on January 1st in addition to the annual intake. The numerator would be the total number of animals who left the shelter system alive through either return to owner, adoption, transfer, or rescue. Live release is best evaluated by species because the challenges and population dynamics may vary widely.

When a rolling live release rate is not used it would be mathematically possible to release more than 100% of the animals who came in to the shelter during the time period. When the shelter is crowded or population is increasing, the live release rate as a percent of intake may will tend to improve initially, not because a higher percentage of animals are leaving the system but because the denominator actually reflects fewer than the total number of available animals available for release.

As long as in-shelter population numbers are relatively small compared to intake numbers this shift in calculation will not cause large changes in the live release rate reported. As total shelter population (in-shelter and in-foster) rises the difference between the two rates becomes more substantial.

Including current population in the live release calculation will almost always result in a lower reported rate than using intake alone or total outcomes as the denominator but may give the most realistic picture. Because the rate for live release will often appear lower when including starting population, this rate can be difficult in terms of public education to transition to reporting. But, rolling live release is always a valuable statistic to track internally to watch the effects of increased or decreased daily population.

- ✓ **Report, monitor, and evaluate a broad set of shelter population dynamics statistical data including breakdowns by species, age, intake type, and intake status.**
- ✓ **Report absolute numbers and compare to historical data by month.**
- ✓ **Calculate live release rate as a percentage of total intake for the time period.**
- ✓ **Report, monitor, and evaluate holding numbers as well as undispositioned animals as well as live release and euthanasia**
- ✓ **Report, monitor, and evaluate population dynamics data relative to the human population (per capita).**

2. Capacity planning and evaluation

Capacity is a means of evaluating the fit of each area or flow through point in the shelter system that has been designated to house or serve animals, compared to the needs or requirements of the area or flow through point. Capacity is dramatically affected by intake numbers, physical space, housing units, staffing, and length of stay. Capacity for animal care and adequacy of staffing is considered relative to the number of animals requiring care at any given time.

Daily averages of the components of the live release as well as euthanasia numbers can help estimate animal flow through numbers or required capacity for critical junctures. Live release and euthanasia flow through numbers allow planning for numbers of animals in need of daily evaluation, numbers to move to adoptable sections, capacity for holding animals awaiting rescue placement, staffing needs for medical and behavioral evaluations, adoption area daily housing capacity, numbers of animals likely to be adopted, spay/neuter capacity and euthanasia staffing.

Planning for adequate capacity requires knowledge of historical patterns of intake, outcomes and clear goals and expectations for average length of stay.

Capacity planning can be done for almost any critical flow through point or housing area of an animal welfare organization. For most organizations, capacity planning should at minimum include:

- Required stray holding capacity
- Adoption driven capacity
- Staffing capacity relative to daily population
- Staffing and capacity for all critical flow through points such as: move to adoption evaluations, behavior evaluations, or spay/neuter

Population Count (Animal Inventory)

Daily inventory and comparison / reconciliation to database reports of in-shelter or in-foster population is essential to maintaining a robust database that will be the foundation of all other reports and calculations.

- ✓ **Monitor and reconcile database inventory to actual shelter population each day.**

Monitoring inventory changes each month is also an important part of understanding holding patterns as well as keeping an eye on potential crowding. Handcounting inventory monthly or twice monthly to reconcile with the database ensures good quality data and helps evaluate the current inventory system for quality and accuracy.

Inventory relative to capacity

Regularly comparing animal population or inventory with actual housing capacity, holding requirements, or recommended numbers for holding gives indications when the facility may be nearing capacity or overextended beyond functional capacity.

- ✓ **Monitor and evaluate average inventory relative to both actual housing capacity and capacity for care each month.**

Required stray holding capacity (RSHC)

Required stray holding capacity (RSHC) is the most basic capacity requirement for organizations that receive a large majority of animals as strays.

RSHC estimates the daily inventory of animals requiring housing in holding areas because of a legal stray holding requirement. RSHC, most commonly, is calculated as the monthly daily average (MDA) for stray intake multiplied by the minimum holding period. (MDA stray intake * stray holding period= RSHC) For example, if 5 dogs enter on average each day and the legally required holding period is 5 days, then the RSHC would be 25 dogs (5x5=25). In general, stray dogs should be housed individually, so RSHC gives an estimate of how many housing units are needed to adequately accommodate intake and holding of strays each month.

Including estimates from average daily intake by age allows capacity planning for special housing for juvenile animals compared to adults. Required housing capacity can be estimated for animals entering in other categories as well if a holding period is required.

Required capacity should constantly be compared with actual observed capacity since delays in decision making, animal processing, or animal movement can have dramatic effects on the daily population numbers in holding areas.

Insufficient RSHC indicates the shelter will likely be over capacity for adequate housing which will negatively impact the shelter's life saving capacity. If RSHC is insufficient crowding is ensured and animals must be co-mingled. When RSHC approaches the actual housing capacity animals must be moved efficiently out of holding areas as their holding periods expire to make room for new animals being admitted.

- ✓ **Estimate and evaluate RSHC each month based on previous year's intake accounting for current trends of decreased or increased intake or changes in the required holding period.**

Staffing capacity

The most basic staffing capacity estimates are the number of staff hours required for basic animal care such as feeding and cleaning. The National Animal Control Association (NACA) bases their estimates on a minimal requirement of 10 minutes each day per animal for feeding and cleaning. The Humane Society of the United States (HSUS) bases their recommendations on a minimum of 15 minutes per animal per day. Shelters may elect to time a qualified staff person performing their duties according to acceptable protocols in order to get a time per animal that seems to be a good fit.

The time is then multiplied by the number of animals present or likely to be present each month to get an estimate of how many staff members would be needed each day in order to meet the animal's needs in a reasonable amount of time. If, for example, adoption areas need to be cleaned prior to becoming open to the public, then more staff may be needed in a shorter period of time for cleaning.

For example:

If 60 animals are present in the shelter, $60 \text{ animals} \times 10 \text{ minutes/animal (NACA)} = 600 \text{ minutes} = 10 \text{ hours of staff time}$. In order to get the job done by 12:30pm (if work starts at 9 am), three staff members for 3.5 hours would be required. (See Appendix D for staffing calculation examples based on NACA recommendations.)

Staffing and capacity for all critical flow through points can also be estimated using similar calculations. The number of animals presenting each day for intake or the number of animals needing to be spayed or neutered each day may be multiplied by the time required for intake or surgical procedures.

Calculate staffing needs based on previous year's inventory in combination with

Capacity planning for critical flow through points

Capacity planning for care and service at critical flow through points can be estimated by using similar principles. (See Appendix E for sample calculations for spay / neuter.)

Critical flow through points include any service an animal would require to move through the system from intake to outcome, such as:

- Spay / neuter
- Behavioral evaluation
- Health check prior to adoption

Adoption driven capacity (AD Capacity)

Adoption driven capacity (AD capacity) is a means of establishing appropriate daily in-shelter population numbers based on both the number of likely adoptions and the average length of stay the organization identifies as being optimal for health, welfare, and resource allocation. AD capacity is based on a balance that exists between 1.) the number of adoptions, 2.) the number of animals available to be adopted, and 3.) the average length of time each animal will wait. Each of these three factors has a dramatic effect on the others. These effects must be kept in mind in order to effectively manage the population with good welfare, keep animals healthy, and maximize the life saving potential for the organization as a whole.

Animal shelters are not fixed systems. We can rarely change just one factor and monitor the effect. Instead many things are constantly changing. Understanding the basic dynamics helps make sense of those complexities.

In a fixed system the effects would be as shown in the horizontal rows of the table below.

↓ Adoptions	↑ Average Care Days	↑ Daily Population
↑ Adoptions	↓ Average Care Days	↓ Daily Population

In a fixed system with no changes in intake flow, as adoptions go down, average care days rise, which leads to an increase in daily population. When adoptions rise, average care days decline, which leads to a decrease in daily population.

Other important factors are also clearly associated with these three factors including risk of infectious disease. As average care days and daily population increase so does infectious disease and with increases in illness, animal welfare commonly suffers and resources are not used to their best life saving effect. A vicious cycle is created with a high risk of disease, long shelter stays, and increased care days leading to crowding which further feeds the cycle.

In an open admission shelter that does not control shelter intake of strays or surrendered animals, intake and legal holding periods define requirements for capacity needs for the holding areas of the shelter.

AD capacity may be used to define or estimate capacity recommendations for adoption housing and length of stay in adoption areas or once made available for adoption. Days spent in holding must be added to the recommended target average length of stay in the adoption area to appreciate the total average length of stay to adoption. Adoptions are a limiting factor for animal flow-through, AD capacity will be the best guideline for total daily adoptable area capacity.

To determine AD capacity, the total number of care days required to meet expectations are calculated as a first step using the target average length of stay. Those care days are then divided by the number of days in the month, with an understanding that the average represents a reality where some animals stay longer than average while some stay less time than average.

Dividing the total care days for the month by the days in the month establishes the average number of care days each day, or the daily population that is most likely to lead to animals leaving the shelter within the targeted time frame.

Using AD capacity as a guideline for daily population should help to move animals efficiently through the shelter system, avoiding prolonged stays which may lead to crowding and a vicious cycle of disease.

Adoption driven capacity is calculated as the number of historical or expected adoptions for the month multiplied by the target for length of stay to adoption and divided by the number of days in the month.

Step One:

Number of Adoptions in the Month * Targeted Average Length of Stay = **Total Care Days for the Month**

Step Two:

Total Care Days for the Month / Days in the Month = Average Daily Care Days = **Estimated Adoption Driven Capacity**

Example:

Jan 2008 canine adoptions=176 dogs

Target length of stay in adoptable areas = 10 days

176 dogs adopted * 10 day average length of stay = 1,760 total care days for adoptions

1,760 total care days / 31 days in the month = 57 care days each day =57 dogs present in adoptable sections each day (daily population)

AD Capacity = 57 dogs in January 2008

Values for yearly trends in AD capacity are calculated based on the number of adoptions recorded in the database during each month of the previous year and the AD capacity for that number of adoptions with a 10 day (as an example) average length of stay in adoption areas.

If adoptions in the current year exceed the previous year, the first result of the increased adoptions would be decreased length of stay in adoptable areas. If adoption programs progress and rate of adoption increases for cats or dogs, it may be necessary to increase capacity for adoption housing.

- ✓ **Evaluate the current number of animals in adoption areas relative to AD capacity.**
- ✓ **Maintain adoption area population at levels consistent with estimates of AD capacity.**
- ✓ **Do not use crowding in adoption areas as a trigger for adoption promotions since adoption areas are unlikely to become crowded if AD capacity is observed.**

3. Average length of stay and animal care days

Animal care days

Monitoring average animal care days to important outcomes such as adoption, transfer, and euthanasia helps evaluate progress toward reaching goals and helps explain changes in daily population. Average care days to outcome can be monitored by each specific outcome type as well as by species, age group or other category to help identify areas where problems or successes with flow through exist.

- ✓ **Set targets for average length of stay to each possible outcome. Targets are not time limits but rather represent goals based on expectations of efficiency as animals move through the system. Averages mean that some animals will have shorter lengths of stay while others will have longer lengths of stay.**

4. Tracking incidence of disease

New incidents of disease should be identified daily through the rounds and monitoring process. Incidence of disease (incidence density) is calculated by dividing the number of new cases during the time period by the population at risk during the time period. Incidence can be calculated as the number of new cases per 1,000 animal care days.

- ✓ **Track incidence of disease by species and age for common shelter acquired conditions such as**
 - **Respiratory disease**
 - **Gastrointestinal disease**
 - **Skin disease**
 - **Other**

5. Tracking health status changes and at risk categories for euthanasia

Tracking animal euthanasia by category may help shelters and communities to identify which animals or categories of animals are most at risk. Identifying at risk groups may help to identify problems, find solutions or target areas where specific programs or practices could be implemented to make improvements.

Caution must be used when collecting data and evaluating these categories. A thorough understanding of how, and when, euthanasia categories are assigned is essential to problem solving and targeting appropriate intervention.

As an example, when euthanasia categories are set at the time of euthanasia, animals who arrive at the shelter healthy may be categorized as sick, infectious or “medical” at the time of euthanasia if they have become ill (ie. shelter acquired disease) while in shelter care. If shelter acquired disease is common, the shelter would report little or no euthanasia of healthy animals even though many animals who arrived healthy were later euthanized.

Although this practice would not be helpful in strategizing ways of reducing euthanasia or reducing risk in the shelter or the community, many shelters define euthanasia categories based on the animal’s status at the time of euthanasia without considering the condition at the time of presentation.

Defining euthanasia categories only at the time of euthanasia leads to miscommunication regarding the primary causes of shelter euthanasia, makes evaluation of preventative in-shelter care difficult, and makes assessing risk groups for euthanasia almost impossible. The timing of these definitions leads to a misunderstanding of the fundamental factors, the disparity between live release and intake for the shelter as well as the total capacity for adoption in the community, which put animals at risk of euthanasia in the shelter and the community as a whole.

In most cases, the difference between intake and live release drives the euthanasia rate. Requiring animals to develop clinical signs of disease or behavioral signs of stress before being selected for euthanasia creates a certainty of poor welfare and suffering for a large percentage of shelter animals and likely leads to unnecessary euthanasia for otherwise adoptable animals because of poor population management practices.

While animals are being selected for euthanasia based on the development of clinical signs of disease or undesirable behaviors, it is primarily the difference between intake and live release that defines how many animals must be selected for euthanasia. Although it may appear as though the majority of animals are being euthanized for health and behavioral reasons, many of those animals likely arrived at the shelter behaviorally sound and in good health (ie. good candidates for adoption) and deteriorated, later to be selected for euthanasia, in large part because of infectious disease exposure and stress secondary shelter crowding, but primarily because it would be impossible to humanely house the enormous number of animals in excess of the number that can currently be placed.

- ✓ **Evaluate euthanasia absolute numbers and rates as a percent of intake by species, age (juvenile vs. adult), and intake status.**

Content in this document has been published as conference proceedings and / or presented at:

The North American Veterinary Conference Orlando, FL in January 2009
The Western States Veterinary Conference Las Vegas, NV in February 2009
The Midwest Veterinary Conference Columbus, OH February 2009
The Humane Society of the United States Expo Las Vegas, NV in April 2008 and April 2009
The Lone Star Conference Austin, TX in April 2009
Prairie States Animal Welfare Conference Rockford, IL in June 2008 and June 2009
The New Mexico Humane Conference Albuquerque, NM August 2008
PetSmart Charities Webinars

- a. "Putting Your Statistics to Work: Shelter Health Planning Tools to Fit Every Shape and Size"
<https://petsmartcharities.webex.com/petsmartcharities/k2/e.php?AT=RINF&recordingID=1331327>
- b. "Live Release and Beyond! Actionable Statistics: Measures for Evaluating the Health of a Shelter"
<https://petsmartcharities.webex.com/petsmartcharities/k2/e.php?AT=RINF&recordingID=1300177>
- c. "Daily Rounds"
<https://petsmartcharities.webex.com/petsmartcharities/k2/e.php?AT=RINF&recordingID=1224307>

Information and training for estimating age in shelter animals is available from the recorded PetSmart Charities webinar: "How Old Are You Now? Estimating Age in Shelter Animals"

<https://petsmartcharities.webex.com/petsmartcharities/k2/e.php?AT=RINF&recordingID=1377317>

Attachments:

Appendix A: Action list

Appendix B and C: Daily Monitoring sheets for dogs and cats

Appendix D: Sample calculations for staffing for basic care

Appendix E: Sample calculations for spay / neuter