

EQUINE SANCTUARY & RESCUE FACILITY GUIDELINES



CENTER FOR EQUINE HEALTH
SCHOOL OF VETERINARY MEDICINE
UNIVERSITY OF CALIFORNIA, DAVIS

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Section 1

OPERATIONAL BUSINESS AND FINANCIAL PLAN





Equine sanctuary and rescue facilities both house and care for unwanted, abandoned, neglected, abused, or injured horses. Those that prepare and release sizable numbers of animals for adoption are defined as rescue or rehabilitation operations. Those that maintain horses permanently are considered sanctuaries.

The proper health and welfare of horses housed within equine sanctuary and rescue facilities requires the existence of a sound operational management program supported by a secure financial structure for the controlling business entity. The failure rate among animal sanctuaries of all types within the United States is known to be very high, with an average lifespan estimated to be around 3 years and a failure rate in excess of 70% for those facilities that do not own the land being utilized for their operation. Most of these failures can be attributed to one of two causes; the financial collapse of the entity due to poor business planning and/or practices, or the lack of a defined plan of succession for key management personnel. The operation of an animal sanctuary is no different than that of any other business entity in that its ultimate success or failure will depend upon proper initial capitalization, sound financial planning, strict fiduciary practices, and competent managerial oversight.

Consequently, before the commencement of operations by an equine sanctuary facility, a formal written business plan must be developed which defines the basic goals of the entity, its operational parameters, along with its financial system for capital acquisition and support. This business plan must also provide a structure for managerial authority that should include the designation of an oversight board of trustees and/or directors, the identification of key operational positions, and a clear plan for succession of oversight, advisory, and management personnel. The plan must also identify the size and scope of

the sanctuary operation and define the basic animal programs which are to be included in the conduct of its operations.

Once the decision to engage in the establishment of an equine sanctuary facility is made, a basic business organizational structure and operational plan must be delineated by the individuals involved. A basic type of business entity (sole proprietorship, limited partnership, corporation, etc) must be selected. This decision will be based upon multiple factors including size and scope of operations, core capital funding, long range goals of the program, and the personal preferences of the organization's leadership. The tax status of the enterprise and its affect upon organizational decisions is of importance, particularly for those entities that intend to seek federal 501(c)(3) charitable status. The successful designation and maintenance of that charitable exemption will affect the type of business structure selected.

Corporate business structures and charitable exempt operations automatically will require the existence of a board of directors/trustees with oversight authority for the conduct of activities provided by the managerial officers of the company. However, it is recommended that even small sole proprietorship or partnership operations establish these types of boards in an advisory capacity to contribute to the continued viability of the business and insure the health and welfare of all animals involved in the program. Key management personnel and their areas of operational responsibility must also be identified. These are the individuals who will be responsible for the day to day operations of the sanctuary. Their responsibilities will include fiduciary management for business operations, personnel acquisition and supervision, and the oversight maintenance of proper husbandry and health care procedures for the horses and other animals held within the proposed facility. These primary managers and their competency are essential to the successful operations of any animal sanctuary. Not only must these individuals be identified early in the development of a sanctuary business model, but a clearly defined plan of succession for these

individuals must be documented. This is especially important in smaller operations when the person who is the driving force of the program and the hands-on manager of the facility is lost due to death, disability, or retirement. Without a plan for replacement, many of these operations will cease to exist, or worse, experience periods of improper management such that the health and welfare of their animal residents are compromised.

Once the decision is made to establish and operate an equine sanctuary and the key advisory and management personnel are selected, an operational financial plan must be drafted. This plan should detail the operational plan for the business entity over at least a 5 year period of operation and should be renewed in the final year of the plan for each successive 5 year business period. The initial plan should include detailed information regarding the amount and sources of the initial capital investment in the business, the selected type and site of operation, and a general operating budget for each year of the plan. Sources and methods for the continued acquisition of operational funding must be identified and details of operational methods and their associated costs must be delineated such that expenses are constrained to balance against projected income. Business deficits are very difficult to overcome in any situation but will likely be impossible to solve if they are the result of a financial flaw in the initial business plan. Variable expenses for the sanctuary will be influenced by the numbers of animals, the scope of programmatic activities and the labor force employed. These variable expenses can be adjusted to comply with changes in yearly revenues. Fixed costs, however, cannot easily be adjusted in this manner. Therefore, it is important that fixed overhead cost which is determined largely by the size and scope of the sanctuary facility incorporated into the initial business plan be clearly determined and understood. A lack of planning in this area may lead to the financial collapse of the business since fixed overhead expenses are very difficult to reduce once business operations begin.

Finally, once operations commence, the business must employ professional and independent accounting, tax preparation, and financial planning services. Financial statements that include both income/expense and asset/liability reports must be prepared on at least a quarterly basis. These will form the basis for serial budget adjustments based upon income projections and cost analysis, thereby insuring the solvency of the business. The reports can also be used as a guide for projected growth and expansion of services or as an early indicator of the need for cautionary scaling back of operations to maintain financial stability and thus proper animal care. Additionally, such financial reports are absolutely essential for acquisition of donated funds by those sanctuaries and rescue farms who have obtained federal charitable status. Most individual donors and all private or public funding agencies will require these types of financial statements before committing to any charitable donation. Those equine sanctuaries who can present a clear and concise operational picture and a sound financial structure are much more likely to secure sizable and continual charitable contributions.

To summarize, it is essential that all equine sanctuaries have a sound business plan, a clear managerial structure, and a long-term strategic plan of operation if they are to be successful. Careful initial planning to insure financial stability and sustained quality of animal care and other programs over time must be done before any sanctuary operations commence. Constant management surveillance must be maintained so that needed adjustment in operational activities can be foreseen and responded to in an effective manner.

Section 2

FACILITY DESIGN AND CONSTRUCTION



The type and scope of facilities necessary for the operation of any equine sanctuary or rescue facility will, in large part, be determined by the size and location of the farm, the weather conditions typical for the location, the type of horses to be housed and their expected activities. There are, however, certain principles regarding the design and construction of equine housing that are universal. Pasture and dry lot fencing must be constructed of heavyweight materials and care should be taken to insure they can withstand the normal wear and tear applied by horses housed over time. Surfaces should be constructed so that the chances for projectiles from loose building materials such as fence wire, broken boards, etc. are minimized. The use of nails for construction of any type should be avoided as they tend to loosen and become exposed overtime. Exposed nail heads can easily cut horses. Countersunk lag screws and bolts applied in such a way that neither their heads nor the nut ends extend beyond the surface of building material are preferable. Housing spaces such as shelters and stalls should be constructed in such a way that their interior surfaces are as smooth and hazard free as possible. Loose sheet metal or any type of sharp edged materials are a definite hazard. Electrical cables, conduit or wiring must always be placed out of reach and unavailable to the probing curiosity of horses. Water pipes should be well buried when underground. Upright water pipes connected to watering devices need to be tightly secured and protected. Watering devices must be suitable for equine use and be securely placed to avoid damage to the waterers or injury to the horses.

Stalls

The numbers of barns or stalls included in the design of any equine sanctuary will be determined by the type of horses to be housed, their health care requirements and the type of rehabilitation

and/or athletic use planned for them. In any case the presence of a minimum number of stalls will be necessary to provide shelter for injured, sick or otherwise debilitated horses that need extra husbandry and/or health care. The design and type of construction of those stalls will be determined largely by the climatic and environmental conditions of the sanctuary's location. Locations that have exposures to extreme cold may require a more enclosed and insulated design while those in milder climates or with summers characterized by high heat and humidity will need stalls that have a more open type of design. Regardless, barns with stalls must be designed to provide adequate ventilation (air flow exchange) for horses during all seasons of the year. Colder climates may accomplish this through the use of ceiling exhaust fans, and windows and doors that can be opened or closed depending on weather conditions and ventilation needs. Moderate to warm areas may want to utilize open topped stalls and or windows to provide cross air flow. In periods of high heat and humidity, fans can be used to increase air movement and cooling.

Stalls should be large enough in size to allow for the free movement and complete lateral recumbency of their equine occupants. Guidelines provided by the FASS cite the work of Zeeb (1981) that indoor floor dimensions of stalls should be at least twice the height of the housed horse at the withers. In most cases a box stall of 12'x12' should be adequate for most light horse breeds. The FASS guidelines also state that ceiling height should be at least 1 foot higher than the tips of the horse or pony's ears when held at their highest level. Generally, interior ceilings for stalls should be at least 8 to 10 feet in height to provide for proper light and ventilation. Draft breeds, some stallions and foaling mares may require larger stall space and higher ceilings to provide adequate comfort. The interior surface of the stalls should be smooth and free of any sharp edges, devices or implements that could catch halters stall blankets or damage exposed skin. Watering devices or buckets and feed tubs must be placed in such a way that they do not provide a hazard for entrapment of heads or

limbs. These items should be fairly indestructible to the typical habits of stall bound horses.

Hinged stall doors and windows should always open outwardly from the stall, Sliding doors on stalls and at the end of aisle ways also are acceptable and common in stables. Dutch-type doors in stalls may be desirable, as these provide the horse with seemingly more space and visual comfort. Design features must insure that when these doors are in the open and locked position that the horses cannot reach any hazardous implements or structures such as light switches etc. on the outside surface of the stall. Doors should fit tightly into their openings so that horses cannot get their feet or legs trapped in small open spaces on the sides or bottom of the door. Door openings must be wide enough to allow easy ingress and egress without contact on the door frame for both horse and handler. The door frame and all door edges must be smooth and rounded as much as possible to prevent injuries or cuts.

Stall floors must be constructed of compact and either easily cleaned or replaceable materials. Suitable flooring can range from packed sand, clay or decomposed granite, to asphalt, concrete, wood, or manufactured rubberized materials. Concrete floors should have rough broom float type surfaces to avoid slipping and all hard surface stall floors should be slopped towards drains or gutters to allow for cleaning. When harder materials such as concrete or asphalt are used, it may be desirable to cover those surfaces with rubber mats or other material before bedding is placed within the stall. Regardless, these hard surface floors will require deeper bedding with suitable materials to insure the horse's comfort and safety. The type of bedding material used in stalls and enclosures should be selected to insure proper sanitation as well as comfort. It must be absorptive in nature and insure sound footing. Materials that are commonly used are straw, wood shavings, peat, and shredded paper or manufactured materials specifically designed for livestock bedding purposes. While horses can be bedded on sand, it poses problems for proper cleaning and sanitation. The selection of

such material will depend upon the availability of the material and the means of its disposal.

All barns, stalls and other livestock enclosures must provide for adequate visibility to insure the safety of both the horses and their caretakers. Natural light for daytime viewing can be supplied through the use properly designed doors, windows, skylights, etc. Nighttime viewing requires adequate electrical lighting within stalls, barn aisle ways, feed storage, and animal handling areas. Light fixtures, switches and their supportive wiring are dangerous to horses and must be protected from them by placing these well out of reach. The type of light fixture, switch and electrical conduit used should be strong, relatively destruction resistant, and weather proof.

Shelters and Shade Structures

In all but the most temperate of climates, horses housed outdoors in corals, paddocks, dry lots and pastures will need to be provided with shelters from inclement weather and/or shade structures during the summer months. These structures can be one and the same but their design will vary significantly depending upon climate conditions and housing needs. Those areas with harsh winter conditions will likely require three-sided enclosed shelters. In areas of temperate winters and more days of heat and sunshine, simple pole and roof constructed shelters which protect from moderate rain and intensive heat may be preferable. Like stalls, walled shelters should be well constructed and free of surface projections that could pose a hazard to horses and their handlers. Ceilings should be of adequate height to allow horses to freely enter, exit and stand fully upright. Flooring should consist of brushed concrete, asphalt or other hard surface materials to allow for proper cleaning in all weather conditions. The minimum size for single horse shelters should be at least equal to that of a box stall (12'x12'). The FASS Guide's recommendations for shelters housing one or more horses is to allow 120 square feet for each of the first two horses, then 60 square feet for each additional horse with access to a given shelter. As with stalls, any water sources



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or electrical lighting supplied must be properly constructed and protected from the strains of horse manipulation and weather. If feed bunks are to be included in shelters, they should be of sufficient numbers or be large enough so that all horses can feed at once and avoid aggressive behaviors between animals.

Outdoor Pens, Paddocks and Dry Lots

Regardless of the size, style or configuration of outdoor housing structures, fencing of proper design and adequate strength is a must. Proper materials and construction will not only insure the safety of the enclosed horses but, over time, will minimize the maintenance and upkeep of these structures. Fences can be constructed of various materials such as wooden posts and rails, metal pipe, wire cable or mesh, plastic, rubber or a combination of these. Fences should be sufficiently high to insure confinement, 5 to 6 feet usually being adequate for

most types of horses. If rail type fencing is used, the bottom of the rail should be sufficiently high off the ground to prevent legs or feet from becoming entrapped between the fence and the ground. If wire mesh fencing is employed, the wire must be sufficiently anchored at the bottom of the fence by the use of a heavy cable, fastened to wooden boards or welded to pipe rails to prevent the wire mesh from becoming loose and creating a hazard. When wire, wire cable or wire mesh is used it must be of sufficient gauge and tensile strength to avoid cutting of horses' skin, especially legs or hooves. Barbed wire or small gauge, high tensile strength, wire fencing is dangerous to horses due to its cutting properties and should never be used. Electric fencing can also be used for horses in some conditions such as temporary holding facilities or for pasture rotation. When employed for these purposes, conductive plastic tape that is $\frac{3}{4}$ " to 1- $\frac{1}{4}$ " in width or other such highly visible electric conductive materials should be utilized. Electrified wire should only be used as a protective mechanism on the top rail of fences to prevent horses from chewing or reaching over the fence. One of the most desirable materials for the construction of corrals, small paddocks and dry lots are the commercially prepared pipe panels available through livestock supply centers. These can be easily configured, adjusted or re-arranged to meet changing needs. Anchoring of these panels to permanently placed upright support posts will be necessary, however, when larger areas or expanses are to be enclosed to prevent their possible damage or collapse and subsequent injury to horses. Very large dry lots or smaller pasture areas can also employ the use of welded pipe rail fencing. This type of fencing is safe for horses, permanent, long-lasting and low maintenance. If board rail or solid fencing is utilized, the boards should be fastened to posts through the use of lag-type bolts or screws. Nails will loosen over time and their exposed heads pose a risk for injury to horses. Broken or loose boards should be replaced immediately as they pose a hazard for severe injury.

When fencing corrals, paddocks and pasture areas the creation of sharp angled or enclosed corners should

be avoided. These areas can entrap caretakers and horses and lead to their injury, particularly when several animals are contained in the enclosure. Gates should be well constructed from materials similar and/or compatible with the type of fencing employed and should be of sufficient strength to avoid their sagging or bowing over time. The height at the top and bottom of the gates should match that of the fencing and gates should be sufficiently wide to completely fill the gate opening space within the fence. Narrow gaps at the edges of gates can easily trap the horses' head, hooves, or legs causing severe injury.

Shade and/or shelters should be provided in all pens, corrals and paddocks that are designated to provide permanent housing for horses. Their size and configuration to meet proper housing standards are the same as those for stalls, which have been previously discussed. Large paddocks and dry lots should also provide areas of dry surfaces during wet weather so that horses can stand or lie down out of the mud. This is most easily accomplished by creating dirt mounds with large surface areas in the middle of the enclosures. The areas around gates and water supply devices also are frequent sites for standing water and mud. These problem areas can be rectified by employing the use packed rock or gravel, asphalt, concrete, or rubber matted surfaces to create permanent level and cleanable surfaces. In general, careful planning and construction to avoid the presence of constant areas of free standing water is advisable to prevent muddy and hazardous conditions in winter and to minimize insect breeding areas in summer.

Workspaces for Animal Handling and Care

All equine sanctuary and rescue facilities regardless of size or type of operation will require a designated space for animal grooming, farrier services and veterinary care. The space can be incorporated into barns or other service buildings or built separately, depending on facility design and operational needs. The designated area must be covered by a

permanent roof and sheltered as needed to allow for easy access and use in all weather conditions. It must be clean and dry, have a hard, non-slip, ground surface of concrete, asphalt or rubber material that can easily be washed and disinfected. The space must be well lighted and supplied with electrical outlets for equipment use. Faucets and hose bibs are necessary for animal washing and clean up. Sinks and countertops provided immediately adjacent to this area but safely away from animal contact would be advantageous, although not absolutely necessary. Equipment such as crossties and/or stocks also may be desirable depending upon the animal activities included within the facilities operational plan. Secure and clean cabinet space placed adjacent to work areas would be convenient to hold veterinary and grooming supplies.

Feedstuffs and Bedding Storage

Hay, straw and other bedding materials are readily degraded or damaged by weather even in temperate areas. Consequently, designated areas must be provided where these materials can be safely stored and protected. The size and design of these storage areas will depend upon the amount of hay and bedding materials necessary to supply the needs of resident animals being fed and the climatic and environmental conditions of the area. While, enclosed hay barn type structures are always preferable, other less costly options are acceptable. If barns are to be constructed expressly for the purpose of feed and bedding storage, steel warehouse type buildings with cement slab floors are preferable from a fire control standpoint. In areas of temperate climates cement, asphalt or packed gravel rock surfaces can be prepared and utilized for stacking of these materials. Such pads should be raised above ground level to allow proper drainage so that the bottom layers of material are protected from moisture during periods of rain. These areas may be covered by a roof (again metal preferable) if economically feasible or the materials can be covered by secure and careful placement of tarps to protect them from sunlight and moisture. Regardless, of the type of feed storage

facility utilized, it is essential that these materials be adequately protected from environmental hazards such as weather, varmint fecal contamination, or rodent infestation. Fire prevention and protective measures must also be planned for due to the flammable nature of these materials.

The storage of grain, feed concentrates, vitamins and other feed supplements also must be planned for at rescue or sanctuary facilities. In general these materials should be housed indoors and protected from weather, animal invasion and insect infestation. Sacks of grain and other feed material must remain dry and intact at all times. Once these are opened, their contents should be placed within enclosed, rodent proof containers with tight fitting lids. Fecal contamination from such varmints as opossums are known to transmit the causative agent of Equine Protozoal Myelitis (EPM), and infestation by rodents and/or insects can provide easy avenues for disease transmission. Likewise, supplement containers such as bags, buckets or plastic jars must either be securely closed between uses or have their contents placed within containers that can be easily sealed to protect them.

Operational Equipment Needs

The equipment needs for any equine sanctuary may be highly variable and will depend largely upon the size of the facility, the number of horses housed and the operational intentions of the management plan. Regardless, the planned acquisition, maintenance and ultimate replacement for every equipment item from hand implements such as shovels, pitchforks and rakes to power washing machines to trucks, tractors and other heavy motorized equipment must be taken into account. In spite of the obvious variable factors, there are certain items that are essential at every facility. All tools and equipment necessary for the proper cleaning and manure removal from animal living spaces must be in place and of adequate supply. Equipment necessary for the daily maintenance and upkeep of the grounds and structures within the facility is also an obvious necessity. The need for powered equipment,

their size and configuration necessarily will be determined by management but must be sufficient to maintain a clean, healthy and equine friendly environment.

Since equine sanctuaries and rescue facilities most often house aged or disabled animals, the likelihood of having to deal effectively with equine emergency situations is high. A truck, trailer or van capable of moving healthy, sick or injured animals must be available at all times. In addition, the direct ownership or the immediate access to the equipment necessary for the handling and movement of recumbent and/or severely injured horses is essential to insure the welfare of the facility's inhabitants. Small emergency items and pharmaceuticals should also be in place in case of emergency. The character and number of these items can be catalogued based upon the advice of the sanctuary's attending veterinarian.

Waste Management and Manure Disposal System

A mature 1000 pound horse produces about 54 pounds of manure in a single day. Multiply that by the numbers of horses housed within a facility combined with the added weight and volume of wet, soiled bedding utilized daily and one can readily appreciate the need for a well planned and adequately equipped system of waste removal. The equipment and tools necessary for the removal of manure and other waste products from stalls, pens, corrals and large dry lots must be accessible and in working condition at all times. Containers to hold these materials, once collected and before removal from the facility, must be properly designed to fit the needs of the waste removal system and supplied in numbers sufficient to hold all acquired waste products. While those facilities that have access to large irrigated pasture areas or large open fields may be able to utilize manure spreading systems and equipment for waste management, most facilities will not. Smaller farms and those in which horses are housed and maintained on dry ground must utilize local waste removal services that are available on a routine basis.

Additionally, city, county or state requirements may dictate the method and means by which equine waste is to be handled. Essentially, no manure and/or contaminated waste material can be allowed to accumulate upon the grounds of the sanctuary or rescue facility. Manure piles and large containers of waste that exist for extended periods of time on the property are not acceptable as these constitute a health and environmental hazard for horses and humans alike.

For larger farms and those combined with other livestock or farming operations there are systems for the composting of equine waste available. While many of these systems may be advantageous under certain conditions, they require advance planning and some expertise to be operationally effective and safe. These systems often are affected by jurisdictional authority from governmental agencies and so regulations must be researched prior to their

implementation. It is recommended that advice be sought from individuals who have recognized expertise in this area before any composting plan is considered for use.

Water Sources, Drainage and Sewage Requirements

While some sanctuaries may maintain their own water supply through on-site wells, the water needs and quality for most sanctuaries will be dictated by local governmental agencies. Similarly the means and methods for the control of water run-off and sewage release from sanctuary facilities will be dictated by the rules and regulations of local and state governments. In general, it can be stated that equine sanctuaries must be assured of adequate supplies of clean, pure drinking water. If wells are the source of water, their capacity to deliver sufficient quantities of high quality water throughout the year must be assured. Drainage



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from farms must be designed so that water run-off is controlled and channeled into properly designed sewage systems. No drainage should be allowed to extend freely beyond the confines of the equine sanctuary such that it contaminates surrounding properties or naturally occurring bodies of water. Sewage disposal design and size must be adequate to handle all liquid and or solid waste to comply appropriately with regulated sewage requirements.

The FASS Guide calculates that a mature normal sized “light horse” housed in a thermoneutral environment will consume 4 to 8 gallons of water per day. In the case of draft breeds, lactating mares or high environmental temperatures that consumption could easily increase up to 25 gallons per day or more. Needless to say, all horses regardless of the manner in which they are housed need free access to an endless supply of water at all times. Horse facilities thus must provide adequate numbers of properly designed waterers which are strategically placed within all structures housing horses. The operation of these watering devices must be monitored routinely to insure that supplied water is not interrupted or contaminated.

Waterers can vary from simple buckets placed in stalls or small pens to appropriately designed automatic horse watering devices, to large watering troughs. As with all devices used around horses, waterers should be durable and securely fastened in place with no sharp edges or projections if injuries are to be avoided. For those areas housing multiple horses, sufficient numbers of automated waterers and/or adequate trough space must be supplied so that all animals have access to water and cannot be denied access by more aggressive horses. All watering buckets, devices and troughs should be cleaned regularly and troughs should have a means by which small animals or birds that might fall into the trough can escape, thereby preventing water contamination as a result of their drowning. Large troughs should be supplied in summer months with a population of mosquito fish to prevent them from becoming breeding grounds for mosquitoes. In areas of extreme

winter cold, waterers need to be heated to insure that horses have access to water and will drink adequate amounts. Alternately, water may be offered several times per day to horses in severely cold environments. Winter time dehydration can be just as problematic as that in summer if water is too cold for comfortable consumption by horses or if the water sources become frozen.

Section 3

HUSBANDRY PROGRAM



Animal Identification Program

A method for the positive and permanent identification of the horses housed within equine rescue farms and sanctuaries is an important component of proper husbandry management. This is especially important when large numbers of animals are maintained within the facility or where the turnover of animals through effective adoption is sizable. Permanent identification also allows for the tracking of animals which have been adopted out or otherwise transferred from the facility. While there are many traditional options for the permanent identification of horses such as lip tattooing, freeze branding, etc.; the more modern method of microchip implantation is considered by many to be preferable. These chips provide a permanent and unalterable method of identification, and are reliable, economical and humane. They are commercially available worldwide through veterinary and livestock distribution networks. A hand held scanner is necessary for reading the information on the microchip.

One of the drawbacks of microchips and other methods of permanent ID is that these do not allow for ready visual identification of horses. For this reason many farms and sanctuaries will combine those identification methods with neck tags, labeled halters or neck collars. All of these are acceptable as they can be marked with names or numbers for instant recognition. The labels can also be color coded if desired to designate gender (St, Fe, Geld) or herd groups, if desired. One important factor to remember when using these types of external ID systems is that while the material used to make these must be sufficiently durable to withstand daily wear and tear, it must not be so strong that it cannot be broken by the animal that becomes trapped or ensnared on fences, feeders, waterers, etc. This is especially important for foals and weanlings for not only are they more



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likely to get their collars entrapped in small spaces but often lack the strength to free themselves.

Feeding and Nutrition

Tradition has played a large role in nutrition programs and the basic feeding practices utilized for horses, but new scientific research has expanded equine nutrition programs to include non-traditional feeds along with the development of ration formulation to meet the specific lifestyle of the horse. Sanctuary/rescue facilities should be knowledgeable about the nutritional requirements of the horses under their care, and may benefit from the knowledge and expertise of an equine nutritionist or veterinarian. Many commercial feed companies and the local Cooperative Extension service may offer consulting services on appropriate and cost effective equine nutrition programs for a minimal service charge. Written feeding protocols with nutritional goals should be developed for individual horses, especially those horses with nutritional challenges. Careful and consistent feeding practices are essential for maintaining the health and any rehabilitation needs of individual horses in sanctuaries.

Basic Nutrition

Horses have evolved over the years as grazing herbivores traveling in small herds over long distances in search of food and water, and as such, have a digestive tract that is best suited for digesting a continual supply of roughages or a series of small meals throughout the day. Ideally, feeding practices should allow horses to eat throughout the day, have some freedom of movement, and permit socialization with other horses. If these conditions cannot be met as with many horses housed individually in stalls within a stable, then horses should be fed at least twice per day. Feeding smaller meals more frequently or providing ad libitum hay and water throughout the day is advantageous to the horse's intestinal health and lessens boredom and the incidence of behavioral vices.

Some simple general guidelines should always be followed on developing feeding programs for horses in any facility, including sanctuaries. Horses are extremely sensitive to factors that contribute to poor quality feeds such as dust, mold, weeds, and toxins. Any poor quality feed can lead to laminitis or respiratory or digestive compromise, so these feeds must be avoided even when offered in the smallest amounts.

Maintenance Diets

Horses are commonly fed diets that maintain their normal body condition or weight. Thus, it is a recommended practice for sanctuaries to weigh horses on arrival to the facility and at regular intervals. Alternatively, the body condition of the horse can easily be scored using the Henneke scoring system (Table 1) of 1 (emaciated) through 9 (obese). Horses are usually fed a diet that is consumed at 1.5 to 3% of their body weight per day to maintain their body weight or body condition. An average horse is considered to be approximately 1000 pounds, thus the average mature horse is expected to consume daily 15 to 30 pounds of dry feed such as hay. Although individual horses are in different life stages, exercise

programs, and/or environmental conditions, hay should be fed at a rate of 1% or more of body weight for the mature horse. Types of hay may vary by regions, but timothy, alfalfa, and other grass or cereal grain hays are commonly fed to horses.

Concentrates are added to some diets to supply additional energy, protein, vitamins and minerals. Cereal grains commonly fed to horses are oats, corn, barley, or wheat and are added to increase the calories of the diet. However, the concentrate portion of the diet should not exceed 1% of the total dry feed, especially since these grain-based concentrates are high in starch. High levels of starch in concentrates have been associated with laminitis, obesity, and digestive disorders in all ages of horses. Supplementing with corn oil or some other form of palatable fat is often used to increase caloric density or energy without increasing the starch content of the diet. Vitamins, minerals, and protein supplements are commonly mixed in a ration to balance the diet. Since sodium chloride is deficient in many common diets and horses lose sodium chloride through sweating, salt should be added to diets for horses or be available free-choice as a plain or trace-mineralized salt block.

Horses in the care of the sanctuary with the highest nutrient requirements are young growing horses, late pregnant or lactating mares, and possibly horses with a vigorous exercise or work schedule (Table 2). These horses compared to sedentary mature horses have increased nutrient requirements especially for energy, protein, and some minerals and vitamins. The National Research Council's (2007) "Nutrient Requirements of Horses" provides both the recommended levels of nutrient requirements in diets for horses of various production classes along with the nutrient content of feeds for horses which are both helpful in formulating and balancing diets. Although the NRC requirements are scientifically based, the body condition or weight of each horse should be evaluated periodically and adjustments made to their diet.

Table 1
Body Condition Scoring System

Body condition, or the measure of fat cover, can be evaluated by visual appraisal and palpation. A scoring system in horses uses six areas of the body to assign scores of 1 (extremely emaciated) to 9 (obese). The six areas are: (A) along the neck; (B) withers; (C) crease down back; (D) tailhead; (E) ribs; and (F) behind the shoulder.

A score between 5 and 7 is considered ideal for healthy horses. Horses scoring in the 1 and 2 category should be evaluated further for causes such as medical conditions, dental problems, or the lack of proper nutrition.

Description of Individual Condition Scores (1–9)

(1) Poor. Animal extremely emaciated; spinous processes, ribs, tailhead, hip joints and lower pelvic bones projecting prominently; bone structure of withers, shoulders and back easily noticeable; no fatty tissue can be felt.

(2) Very Thin. Animal emaciated; slight fat covering over base of spinous processes; transverse processes of lumbar vertebrae feel rounded; spinous processes, ribs, tailhead, hip joints and lower pelvic bones prominent; withers, shoulders and back structure faintly discernible.

(3) Thin. Fat buildup about halfway on spinous processes; transverse processes cannot be felt; slight fat cover over ribs; spinous processes and ribs easily discernible; tailhead prominent, but individual vertebrae cannot be identified visually; hip joints appear rounded but easily discernible; lower pelvic bones not distinguishable; withers, shoulders and neck accentuated.

(4) Moderately Thin. Slight ridge along back; faint outline of ribs discernible; tailhead prominence depends on conformation, fat can be felt around it; hip joints not discernible; withers, shoulders and neck not obviously thin.

(5) Moderate. Back is flat (no crease or ridge); ribs not visually distinguishable but easily felt; fat around tailhead beginning to feel spongy; withers appear rounded over spinous processes; shoulders and neck blend smoothly into body.

(6) Moderately Fleshy. May have slight crease down back; fat over ribs spongy; fat around tailhead soft; fat beginning to be deposited along the side of withers, behind shoulders and along sides of neck.

(7) Fleshy. May have crease down back; individual ribs can be felt, but noticeable filling between ribs with fat; fat around tailhead soft; fat deposited along withers, behind shoulders and along neck.

(8) Fat. Crease down back; difficult to feel ribs; fat around tailhead very soft; area along withers filled with fat; area behind shoulder filled with fat; noticeable thickening of neck; fat deposited along inner thighs.

(9) Extremely Fat. Obvious crease down back; patchy fat appearing over ribs; bulging fat around tailhead, along withers, behind shoulders and along neck; fat along inner thighs may rub together; flank filled with fat.

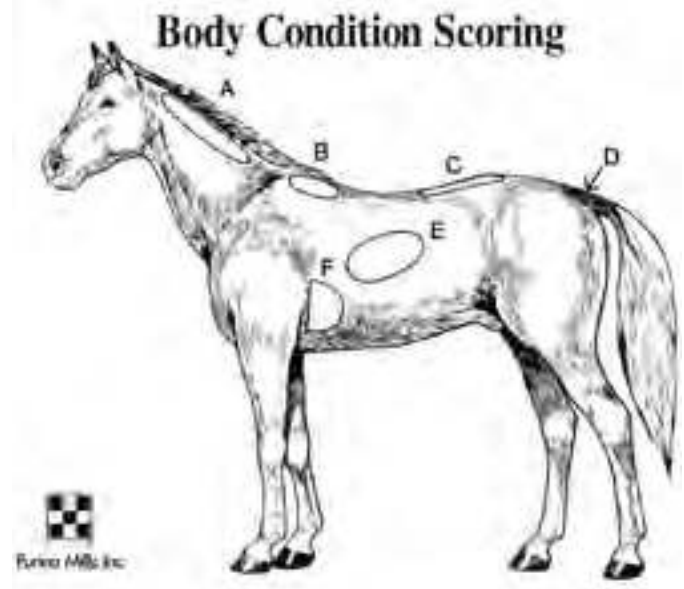


Table 2
Recommended Nutrient Intake of Diets* for Horses
During Different Production Stages or Work Level

	Digestible Energy (Mcal/lb)	Crude Protein (%)	Calcium (%)	Phosphorous (%)
Maintenance	0.90	8.0	0.24	0.17
Pregnancy (9–11 months)	1.00–1.10	10.0–10.6	0.43–0.45	0.32–0.34
Lactation	1.15–1.20	11.0–13.2	0.36–0.52	0.22–0.34
Growing				
Weanling	1.4	14.5	0.56–0.68	0.31–0.38
Yearling	1.3	11.3–12.6	0.34–0.45	0.19–0.25
2-Year-old	1.2	10.4–11.3	0.31–0.34	0.17–0.20
Work	1.15–1.30	9.8–11.4	0.30–0.35	0.22–0.25

* Dry matter basis. National Research Council, 1989.

Geriatric Nutrition

Older horses or geriatric horses may require additional nutrient needs and feeding practices to maintain a healthy body condition. Common ageing conditions include weight loss, loss of dental function, hormonal changes affecting metabolism, poor absorption of nutrients, skeletal problems such as arthritis or laminitis, and kidney or liver degeneration.



Healthy horses over the age of 20 years may have reduced digestion of protein, fiber, vitamins, and minerals. Diets should consist of a palatable ration based on high-quality forage, such as alfalfa. Diets should contain between 12-16% of easily digestible protein, which is greater than the 8% protein level recommended for the idle mature horse. Many commercial diets are available for the senior horse which facilitates increased digestibility and nutrient content of the diets. Loss of teeth and a suitable grinding surface can be a challenge for the older horse in properly digesting their feed. Good quality forage is the cornerstone of the geriatric horse, but may be fed in the form of pellets or chopped hay to aid geriatric horses with dental compromise or other challenges. Commercially available extruded feeds, processed feeds, or pellets can be fed to increase digestibility. Soaking commercially available equine feed pellets in a bucket of water to make drinkable slurry will benefit a horse with compromised dental function. Provide the geriatric horse an environment for eating with considerations to suitable footing to minimize

discomfort due to lameness, an easily accessible water source, and the provision of shelter from extreme weather elements. Older horses often require a longer period of time to ingest their feed, so younger or more aggressive horses should be separated to minimize this competition for available feed intended for geriatric herd members.

Nutrition for Sick or Injured Horses

Illness, trauma, injury, stress, and other types of sickness in horses often impact the nutritional needs and their appetite. Depending on their metabolism, their caloric expenditure and protein requirement may increase or even decline as compared to healthy horses. The two basic types of metabolic conditions have been characterized for ill or traumatized horses are hypometabolism and hypermetabolism, and each requires a different approach for nutritional support (Kronfeld, 1997). The characteristics of a hypometabolic horse include inactivity, ears that may feel cold, low to normal rectal temperature, and minimal eating or drinking. The phrase “fire of life” burns low is often associated with a hypometabolic horse. Horses in a starvation cycle or in the terminal stage of a disease will approach minimal metabolism with an energy expenditure only 50 to 70% of the daily maintenance energy. The refusal of any feed or water will precipitate dehydration as an immediate concern, while carbohydrate and fat stores will be depleted over time. Nutritional support with the recommendation of a veterinarian can be provided to hypometabolic horses through enteral feeding (nasogastric tube) or intravenous administration of nutrients. Advice from a veterinarian or nutritionist should be sought for specific nutritional recommendations for the re-alimentation of each recovering hypometabolic horse, but any nutritional program should be introduced gradually with very small meals.

Hypermetabolic horses usually are suffering from severe trauma, sepsis, and stress and thus are opposite in their symptoms and nutritional support as compared to hypometabolic equines. Hypermetabolic

horses have warm or hot skin along with elevated temperature and demonstrate some signs of behavioral stress or pain. Their metabolism may be accelerated up to three times the daily energy for maintenance as the “fire of life” burns bright, and hence energy expenditure in the body is larger than caloric intake from feed. This may lead to tissue wasting to supply the energy for metabolism by breaking down the fuels of carbohydrates and fats, and as a last resort protein. These horses require nutritional support that starts with small meals, but is often progressive in achieving a diet that is twice daily energy for maintenance within 3 to 4 days. A veterinarian’s or nutritionist’s advice on nutritional support should be followed for each hypermetabolic horse and may include enteral and intravenous nutrition if the horse displays inappetence or is incapable of ingesting feed.

Obese Horses

Obesity or emaciation requires the individual management of the horse starting with the identification of the causes. The health of the horse should be determined before any changes in the nutritional program are initiated. A horse that appears overweight may suffer from metabolic disease (e.g., Cushing’s, hyperthyroidism), but most likely, the horse has overindulged in sweet feeds or grain, overconsumed lush pastures, and/or has limited exercise or other physical activity. A healthy horse that is overweight or obese will likely benefit from a diet that is reduced in the content of energy (calories) and/or an increase in physical activity. Both regimes should be initiated in a step-wise fashion with a slow reduction in total amount of calories in the daily feed or changes in types of feed. Exercise or other activity should be slowly increased over time. Both regimes will lead to a reduction in total body fat. The caloric intake (digestible energy) can be slowly reduced, mainly by withdrawing any soluble carbohydrates (grain) in the diet while feeding good quality hay. A horse that body scores as a “9” may take 3 to 6 months of diligent daily care and feeding before obtaining a score of “5 or 6.”

Starved Horses

Sanctuaries, as well as, rescue organizations, equine veterinarians, nutritionists, and other horse care providers may be challenged with the rehabilitation of a chronically starved horse. Emaciated horses (body condition score of “1 or 2”) may suffer from many maladies of health, age, or nutritional basis. Dietary deficiencies can range from complete lack of feed (starvation) to an imbalance (excess or deficiency) of the nutrients (malnutrition) required in the diet such as protein or specific vitamins. During the starvation process, the horse initially uses any fat and carbohydrate stored in his body to supply energy for metabolism. In a starved animal, once this source of fat and carbohydrate is depleted, energy is derived from the breakdown of protein. While protein is a component of every tissue, there are no inert stores in the body such as there are for fat and carbohydrates. Consequently, the starved body uses protein not only from skeletal muscles, but also from vital tissues such as the heart and even gastrointestinal tissues. When a horse loses more than 50% of its body weight, the prognosis for survival is extremely poor.

The “refeeding syndrome” has been reported in horses with abrupt refeeding of concentrated calories causing death in 3 days. The best approach for initial refeeding of the starved horse consists of frequent small amounts of high-quality alfalfa. This amount should be increased slowly at each meal and the number of feedings decreased gradually over 10 days (Table 3). After 10 days to 2 weeks, horses can be fed hay in increasing amounts to reach a level of free choice hay. Grain supplementation is not recommended until the horse is near normal body weight, usually 6 months following the initiation of refeeding. Horses will show signs of increased energy after one to two weeks, but may be particularly aggressive at meal times. Ears, eyes and head movement will be the first noticeable change in activity in extremely emaciated horses. Some weight gain can be achieved in one month, but 3 to 5 months usually are needed to rehabilitate a horse back to a normal body weight. Vaccination and deworming

Table 3
Refeeding Recommendations for the Starved Horse*

Day	Number of Meals/Day	Feed (lbs)/Meal	Percent DE/Day
Days 1–3	6 (every 4 hours)	1.0–1.25 lbs alfalfa	50
Days 4–5	6 (every 4 hours)	1.75–2.0 lbs	75
Days 6–10	3 (every 8 hours)	Increase to 5 lbs	100

* Based on a starved horse with a projected normal weight of 1,000 lbs or 450 kg. Daily digestible energy (DE) requirement per horse can be calculated using the formula:

$$\text{Mcal DE/day} = 1.4 + 0.03 \text{ Body Weight (kg)}$$

DE of alfalfa hay is 2.28 Mcal/kg. Thus, the DE requirement for the horse is 15 Mcal DE/day, which can be provided with 6.6 kg or 14.5 lb of good-quality alfalfa. Witham et al., 1998.

programs should be considered with the consultation of the facility's veterinarian after approximately 2 to 3 weeks of refeeding. A physical exam of the horse prior to any riding or exercise program is advisable to ascertain any organ damage (i.e., heart) or other limiting disorders.

Water Management

Since a horse's need for water can be as much as 25 gallons per day, the need for a free access to an uninterrupted supply of water is paramount to the well being of the animals. Indeed, lack of water represents a much higher health risk than similar interruptions in supplies of feed. Consequently, not only do the proper type and sufficient numbers of watering devices need to be supplied, their continued operation and accessibility must be assured. Waterers must be checked for function at least twice daily and perhaps more often in periods of extreme heat. This twice daily monitoring easily can coincide with feeding, stall cleaning, or other husbandry practices. Watering devices or containers also must be kept clean and free of any contaminating debris. Dirty water, particularly that containing the horses own fecal material, will keep horses from drinking. Water troughs contaminated with dead animals or others noxious materials can be a source of toxins or microbial contaminants which are a threat to health. In areas of severely cold winters, water sources must be heated to insure that horses will have proper access to, and drink sufficient amounts of water, to prevent dehydration. Wintertime colics due to dehydration from lack of water consumption are common in areas of cold climate. Sudden changes in weather in any climate can also decrease water consumption causing dehydration and possible colic.

Bedding Requirements

The purpose of all bedding materials is to provide comfort and sanitation to horses housed within enclosed structures. There is a wide choice of acceptable bedding materials and the selection of those used depends on local, availability, affordability,

consistency of quality, the requirements for disposal and the personal health care needs of the horse(s) to be housed. The bedding most often utilized in the United States is wheat, oat or rye straw. Wood byproducts such as shavings or sawdust are also increasing in popularity due to price considerations and ease of storage. Shavings are preferable to sawdust because these are generally cleaner and easier to handle for waste removal. There are certain types of shavings that are toxic to horses and should never be used such as those derived from black walnut trees, pressure treated lumber or freshly cut cedar. Consequently, the source and type of shavings should be checked carefully before purchasing for equine use. Other types of materials that are acceptable and frequently used are peat, shredded paper or manufactured bedding materials designed specifically for horses.

The single most important factor in the selection of bedding for horses is that the material should be as clean and dust free as possible. This is due to the fact that dusty bedding and dust accumulation within enclosed stable creates an undesirable environment for the respiratory health of the animals housed. Since straw, wood shavings and hay are dusty by nature it is extremely important that care is taken to purchase only those of high quality. Old, dirty, or moldy bales of hay, straw or wood materials are simply not acceptable due to the potential health hazards they present. Likewise, quality materials must be properly stored after purchase to avoid water damage, weathering, varmint (rodents, insects, etc.) infestation or other contaminating effects that create health risks. If possible, it is advisable to have horses taken out of their stalls during the bedding process to avoid the dusty air that is normally created during the spreading of these materials. Sometimes bedding can be sprinkled with a light drizzle of water if dust seems excessive. Dust buildup within barns and stables over time also creates an environmental hazard and so these structures should periodically have the horses removed so that power washing or cleaning of their interior surfaces can be accomplished.

Regardless of the type of bedding selected for use and the type of structure employed to house horses, the comfort and cleanliness of the animal is the primary concern. Therefore, sufficient amount of bedding material must be distributed within the stall or enclosure to provide a soft, yet stable ground surface that allows the horses to recline comfortably and return to the standing position safely. The suitable depth of the material is dependant upon the type of bedding used and the underlying floor surface over which the bedding is spread. Hard floor surfaces such as brushed cement, asphalt or wood will require more bedding material to provide a deeper cushion than floors consisting of rubber mats, packed sand or clay. Secondly, bedded stalls must be thoroughly cleaned at least once daily such that all feces and wet material are completely removed. Any bedding material removed in this process must obviously be replaced with a like amount of new dry bedding. Depending on the size of the horse, size of the stall, diet, and the available labor supply, a second removal of manure can be carried out later in the day and may be beneficial to the cleanliness of the horse. While this process represents an increased cost of labor those costs may be offset as the daily amount of bedding removed due to fecal contamination will be decreased.

Animal Grouping and Housing Selection Criteria

The natural social structure of horses is one of strong herding instincts with a social order that is based upon individual dominance within a given group. Once these group orders are established they tend to remain stable. Over time, horses develop strong social attachments to individual herd mates. Consequently, the grouping of individual hoses within pens, corrals, dry lots and pastures should be done with careful consideration. Even horses housed alone in stalls or individual pens will be more content if they can have visual contact with other horses or animals on the property. When selecting horses for cohabitation, the gender, age, health, and individual disposition should be considered to avoid confrontational and

aggressive behaviors such as fighting. All newly arrived horses should be quarantined (2-3 weeks) before mixing with resident horses. Before new horses are co-mingled, they can be exposed to the group by allowing an across-the-fence acquaintance period. All introductions of new individuals to each other regardless of group size should take place in daylight hours and under close supervision to avoid unnecessary harm or injury to horses.



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The type of housing selected and the number of horses grouped together within a single enclosure will depend upon the types of horses involved, the available housing alternatives, climatic conditions and the health and soundness of the individual animals. Generally, animals of like gender (mares & geldings), similar ages and sizes should be grouped together. Old, geriatric horses whose mobility and activity is limited should be grouped together with individuals of similar disability to avoid injuries and to insure that they receive their proper share of feed and water. Usually, mature stallions are housed individually in stalls or small pens or pastures and not grouped together with other stallions. In most sanctuaries and rescue facilities, stallions or colts are not grouped with fertile mares or fillies. It is important that animals housed individually in outdoor pens or grouped together in larger enclosures have adequate space

since overcrowding may lead to aggressive behaviors such as fighting. Ideally, there should be adequate space to allow for exercise and free movement of every member of the group and enough space such that individual animals can separate themselves from the group. As mentioned previously, inadequate space for feed and water access is a common stimulus to confrontations. Additionally, excessive numbers of horses enclosed in small spaces represents a health risk due to the rapid accumulation of manure and urine. Stocking densities for horses placed on pasture will depend largely on the amount and quality of grass available; the American Association of Equine Practitioners recommends a minimum of 2 acres per horse.

Sanitation and Waste Removal

Clean and sanitary surroundings within the confines of any equine facility are absolutely essential for the health and welfare of the horses and for the avoidance of unnecessary environmental contamination. Therefore, the excessive buildup of feces, urine and other waste products within the housing enclosures or in and around the grounds of the facility is not acceptable under any circumstances. Indoor stalls and outdoor pen type enclosures must be cleaned of manure and other waste products daily; larger paddocks and dry lots must be placed on a regular schedule for manure removal and ground maintenance. Pastures should have accumulated manure either removed or spread on a regular and recurring basis to lessen environmental impacts and to minimize intestinal parasite infestation. Standing water or urine also must be prevented from accumulating in housing enclosures by proper drainage or absorbent bedding materials. Standing ground surface water provides optimal breeding grounds for disease transmitting insects and for microbial contamination of the environment. Manure attracts breeding flies and other insects which are both irritating and unhealthy to animals and humans, alike. Therefore, care must be taken to prevent the manure buildup under fence lines, along the edges of shelters, under feeders and waterers, and along roadways and horse paths. Areas

designated as collection areas for the temporary storage of animal waste products before pickup and removal must be well maintained and kept clean. Areas where horses are groomed, shod, or provided health care services must be maintained as sanitary as possible. Barns, storage sheds, hay barns and all other structures should be properly maintained to prevent injuries and maintain a healthy environment. In short, a clean and orderly environment is healthy and safe for both the horses and the people who care for them. The pursuit of that goal should be made foremost in the minds of all employees and volunteers working within any rescue or sanctuary facility.

Daily Animal Inspection and Welfare Maintenance

Every animal maintained within an equine facility must be visually inspected for health and soundness daily. An exception is for farms or sanctuaries composed of very large land areas housing high numbers of animals (as with many wild horse type sanctuary operations) where the numbers of horses and the distances involved make such daily inspections impractical. Even in these situations, however, some sort of regular and routine system for the observations of equine residents should be devised to insure that injured, sick or entrapped animals are discovered as soon as possible to avoid needless suffering.

Horses, by their nature are curious and inquisitive and react to unexpected events through a "fight or flight" mechanism. Consequently, their propensity for injury, both minor and serious, is significant. Horses are highly susceptible to digestive disturbances and colic, especially after periods of abrupt weather changes or interruptions in water intake. Also, since they are inherently nomadic, their interactions with fences can result in escapes or entanglements often accompanied by injury. Vigilance by employees and volunteers is the single most important element to maintaining health and preventing injuries in horses. Therefore, equine rescue farms and sanctuary facilities should develop written protocols for both routine care and

emergency procedures. All employees should be held responsible for compliance to those standards and procedures.

Hoof Care

Regular and proper hoof care is an essential practice in the basic maintenance of all horses. Very old, very young horses and those with significant disabilities or orthopedic problems require more attention to hoof care. Consequently, all equine operations must enlist the services of a qualified farrier on a regular basis. The farrier selected should work in conjunction with the facility's manager and veterinarian to develop a program for hoof health maintenance. Once the program is established, careful record keeping and adherence to trimming and shoeing schedules should be made a mandatory element of the facility's management procedures.

It is generally accepted that normal foot growth in the adult horse is approximately 3/8 inch per month, thus hoof trimming should occur every 6-8 weeks if proper hoof-pastern alignment and foot balance is to be maintained. Horses with hoof abnormalities, conformational abnormalities or chronic lameness issues may need hoof trimming or attention more often. Some horses may need to be shod regularly to maintain comfort and soundness. As a general guide, the AAEP recommends that "horses be trimmed and/or shod according to their individual needs, which are dependant on its housing, musculoskeletal problems, conformation and environment". In foals the hoof grows more rapidly with about 5/8 inch of new hoof wall produced each month. Consequently, foals and weanlings should have their hooves trimmed monthly until at least 1 year of age. Foals, weanlings and yearlings with conformational issues may need specialized trimming and/or corrective shoeing to insure proper limb growth and alignment.

Transportation Accommodations

Equine rescue operations and sanctuary facilities by their very nature will require the ability to transport

horses on and off the farm. Horses to be rescued most often need to be transported from their current location to the rescue or sanctuary facility, and resident horses may need transportation to new homes or veterinary facilities. Health care emergencies are always a possibility within horse facilities, and these often require that afflicted animals be transported rapidly at any given hour of the day for immediate hospital care. Consequently, it is essential that all such operations have permanent and ready access, if not outright ownership of some type of horse hauling equipment. The selection of equipment, be it horse vans or trailers, will vary depending on the size of the sanctuary operations, the type, numbers and sizes of animals routinely transported and the budgetary limits of the operating agency. Regardless of the type of vehicles chosen, these must be adequately maintained in operational order and "street ready" at all times. Employees should be adequately trained in their use and well practiced in the proper method for loading and unloading horses from the vehicle



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being used. They should, likewise, be knowledgeable and experienced in driving vans or trailers containing animals such that they can maneuver these in all situations and road conditions without endangering the horses being transported. Management should establish a written standard operating protocol for these transportation vehicles that includes all of the considerations previously described as well as any factors specific to a particular facility. A copy of these transport protocols should be maintained within the vehicle at all times.

Emergency Evacuation Plan

Natural and human caused disasters can occur at anytime and anywhere. These take many forms from wildfires to earthquakes to windstorm damage to flooding from a violent rainstorm. Any of these occurrences may necessitate the rapid evacuation of animals from a farm location. Consequently, it is important that all equine rescue farms and sanctuaries develop a written evacuation protocol or plan of action. It is recommended a list of volunteers be developed and maintained who can be called upon to provide assistance when disaster strikes. All disaster procedures should be reviewed and practiced in periodic training sessions with both the facility's employees and volunteers. This is particularly important when large numbers of animals are being housed at a given location. Arrangements with local horse van companies to supply adequate numbers of transportation vehicles should be made and maintained ahead of time if the facility houses more horses than their own hauling equipment can rapidly evacuate. Because in an emergency there is no time for animal training, all horses should be trained in loading and transport procedures as a routine part of their care and management.

The facility's written disaster protocol should include a plan with designated facilities to re-locate horses in emergency, alternate driving routes to those locations, and an option for removing horses if vehicle access to the farm is blocked. Sufficient halters and lead ropes should be conveniently located and clearly marked with the farm's identity and telephone contact number.

As previously stated, all horses in equine sanctuaries or rescue facilities should have permanent identification. If not, they must be identified by a name or number that is securely fixed to the halter, neck collar, or similar identification tag.

A basic first aid kit with adequate supplies for the number of horses involved should be prepared in advance and maintained in proper order. This kit should reside either within the farm's own transportation vehicles or placed in a location that is readily accessible during the animal loading process. Additional supply kits containing feed tubs, water buckets, pitchforks, shovels, grooming supplies and other implements should be planned for as well. If time allows and space is sufficient, enough feed and water to maintain horses for 72 hours should be transported along with each load of horses.

Not all disaster situations will necessitate or allow for total facility evacuation. Occurrences such as barn or structure fires are possible and so protocols for dealing with these should be included in the facility's disaster plan. At times the circumstances of natural disasters such as floods or wildfires may block any chance of evacuation. In such instances "hold in place" procedures should be outlined within the overall disaster plan. Large cleared pastures or drylots may provide safe places to corral large numbers of animals safely from surrounding fires. High ground areas of a farm may be identified where animals could be taken, held and fed for extended periods during floods. These and other types of contingency plans that have specific application to the facility's location and operational activities should be developed, discussed, practiced and included in the facility's written disaster plan. Multiple copies of this document should be placed in strategic locations that are easily accessible to all personnel. The plan should be reviewed and updated if necessary at least once a year.

Section 4

MEDICAL HEALTH CARE PLANNING



Attending Veterinarian of Record

The proper medical management and health care for horses within equine rescue and sanctuary facilities is an absolute necessity. Effective procedural health policies and medical treatments will require the participation of qualified veterinary professionals. Consequently, all equine facilities should establish a permanent working relationship with a local veterinary practice experienced in the care of horses. Adequate veterinarians should be available either through the attending veterinary practice or through a cooperating back-up system of veterinarians, such that emergency service can be provided 24/7. The veterinarian(s) selected should not only be utilized to provide routine and emergency medical care but should be called upon to help design and plan adequate health care facilities and procedures for the facility. Their guidance and recommendations should be solicited and incorporated into all aspects of the health and care of the horses within any facility.

Basic Health Care Program

A program for routine health care and preventive medicine for all horses must be established within the rescue and sanctuary facilities. An individual medical record should be created for each horse housed that includes both past and current medical evaluations and procedures (routine or otherwise). Periodic routine medical examinations should be planned and performed on all horses to insure the early detection of health problems. Standard preventative medicine programs such as vaccination, de-worming and dental care should be designed in consultation with the attending veterinarian and implemented according to schedule. Suggested vaccination and deworming programs can be found on the web sites for both the American Association of Equine Practitioners and the UC Davis Center for Equine Health. Routine hoof care, hoof trimming and shoeing procedures should

be designed in consultation with both the farrier and the attending veterinarian and implemented according to their recommendations. Additionally, programs for proper insect, rodent and other predator control should be adopted and carried out effectively.

Isolation, Quarantine and Biosecurity Procedures

Housing facilities must be provided and protocols established to provide for the proper isolation of horses newly introduced to the property and for the medical quarantine of those animals suspected of having contagious diseases. Isolation units can consist of as little as a few pens or stalls that are located well away from other horses and out of the routine flow of traffic, or they can be as elaborate as a small barn or medical unit that has strict biosecurity rules and procedures, depending upon the needs and size of the facility. All horses newly introduced onto the property or those that are returning from a long absence should be isolated from the farm's resident horses for a period of time (usually 2-3 weeks) to prevent the untoward introduction of contagious diseases. All individuals that exhibit signs of contagious diseases such as coughing, sneezing, high fevers, etc should be quarantined immediately. When sick horses are identified and placed within isolation units, biosecurity procedures must be implemented and followed carefully. Since disease can often be transmitted by fomites on clothing, tack and farm implements, all direct and indirect contact between these sick individuals and the farm must be prevented. Feed, bedding and waste materials must be kept separate and husbandry equipment and health care materials must be used only on the diseased horse and no others. Insect control should be implemented to prevent the transmission of disease or infections. Personnel should wear protective clothing and footwear, which should remain within the designated quarantine area. Disinfectant foot baths should be strategically placed and all unnecessary visitors should be kept away. The attending veterinarian should provide guidance regarding other additional biosecurity measures that may be necessary in such cases.

Emergency Medical Protocols

Horses may arrive at rescue farms and sanctuary facilities with injuries which have occurred during transportation or that were sustained prior to rescue. Consequently, all horses should be immediately examined upon arrival. A medical record should be started for each horse that includes photographs of the entire horse to document its general condition and any injuries or abnormalities that are present. Simply determining if a horse can move freely and wants to eat and drink are important observations and should be recorded. The animal's temperature, pulse and respiration should be noted and evidence of indicators for disease such as nasal discharge, diarrhea, wounds, swellings, or external parasites described. Signs of orthopedic problems like lameness or reluctance to move should also be documented. Horses with chronic painful conditions need to be identified and evaluated properly soon after arrival. Since many animals may require immediate or long-term health care for rehabilitation, veterinary consultation is essential when examining these new arrivals. Once diagnostic procedures have been implemented and therapeutic measures prescribed, these should be carried out effectively and all procedures documented within the horse's medical record.

Permanent residents of equine sanctuary facilities may become severely ill or seriously injured at any time. These animals should be immediately evaluated by the farm's attending veterinarian and recommended diagnostic and health care procedures should be initiated and carried out. These procedures also must be duly recorded within the horse's medical record.

Occasionally newly arrived or resident horses may be found lying down and unable to rise (recumbent). They may be permanently recumbent for a number of reasons, all of which are serious and often life threatening. Horses deteriorate very quickly when recumbent and rapidly develop muscle crush syndrome along with digestive and urinary problems. Many recumbent horses struggle to rise and may injure themselves. Struggling horses may present a

great danger to people near the horse. Recumbency in horses, therefore, is considered a veterinary emergency that requires immediate attention. Veterinary inspection, diagnosis and immediate treatment or humane euthanasia should be decided within 1-2 hours or further damage can occur. The use of slings and supports to assist recumbent horses in rising to their feet requires special facilities, equipment and veterinary expertise, and therefore should only be attempted by personnel experienced in these procedures.

Evaluation of Stages of Disability

In general, horses that have normal ambulatory movement (M) capability, are eating (E) and drinking (D), and have stable body weight (W) are considered healthy (Table 4). Observation should also be made within the horse's environment for their ability to lie down and get up in the pasture or area of confinement. Short-term conditions which can produce illness or lameness need to be diagnosed and those conditions with a favorable prognosis for cure should be treated by the attending veterinarian. Their guidance should determine whether on-site short term treatments or hospitalization with acute care measures are appropriate for the resolution of each individual case. Rescue facilities should have a small treatment area and individual stalls assigned for medical treatments to insure the proper care of horses treated on-site.

The health status of geriatric or medically compromised horses may sometimes degenerate to levels which are inconsistent with humane care and sustenance of life. Consequently, a predetermined experienced and knowledgeable individual should be identified who can work in conjunction with a veterinarian to assess horses when there is a question raised as to their ability to live a life without pain and/or severe physical restrictions. Each case must be evaluated carefully and individually as a degree of subjectivity is often an unavoidable part of the decision making process. Often a horse may have to be closely observed and monitored for a period of time with multiple and sequential evaluations to determine the magnitude

Table 4
MEDW Criteria Expanded for Chronic Conditions

Movement (M)

Horses are able to walk, trot, lie down and get up without substantial lameness or lack of weight bearing on all four limbs. In veterinary medicine, lameness is graded on a 5 point scale with mild conditions starting a grade of 1 progressing to total lack of weight bearing graded a 5. When a given horse must constantly struggle to move, its condition may very well have progressed to a point where euthanasia should be considered.

Eating (E)

Horses must be able to eat long stem hay, processed feed pellets or cubes, and/or supplements. A loss of appetite, a general disinterest in feed or the physical inability that prevents chewing and swallowing are all signs for concern. If eating desire or ability is severely compromised and dental or other conditions cannot be corrected, then euthanasia may be considered.

Drinking (D)

Horses must be able to easily seek, move towards, and consume appropriate amounts of water daily for proper fluid balance and digestive function. Failure to consume adequate amounts of water leads to a rapid and dangerous degeneration of health. Horses with a physical or neurological impairment which prevents them from obtaining adequate water consumption should be considered for euthanasia.

Weight (W)

Horse's body condition scores (BCS) will vary with time of year, age, and response to a medical condition. An older, skinny horse that is eating, drinking and moving is not a reason for euthanasia. Deteriorating body weight and condition as the result of old age or an on-going medical condition will lead to weakness and inability to comfortably survive. Horses which arrive at this state should be considered for euthanasia.

of a disability and its consequences. An equine sanctuary or rescue facility should never become a hospice for horses that are severely infirmed, in chronic pain or for those where their humane continuance of life is not sustainable. Animals whose health status puts them in such a category should receive careful consideration for a humane end of life. Modern veterinary medicine has the ability to humanely end the life of an animal whose pain and suffering cannot otherwise be alleviated. "While medicine aims at restoring or maintaining healthy living, similarly, it is also conceptually part of the veterinarian's duty to end suffering totally erosive of the animal's quality of life." (Rollins, 2006).

Long-term Survival Evaluation and Care of Geriatric Horses

Regardless of the horse's age in years, the physical criteria of normal movement, eating, drinking, and normal weight (MEDW) should be the basis of evaluation of a horse's general state of well being. Additionally, the ability to lie down and get back up without significant difficulty is especially important in the older horse. Geriatric horses may loose some weight or appear, physically different due to redistribution of fat and the normal ventral curvature of the spine that occurs with aging, but if the other components of MEDW are present then quality of life is presumed to be adequate for their continued maintenance within the rescue facility or sanctuary. Regular assessments of these basic criteria should be used. In general older horses need more attention to hoof care, dental care, parasite control, and segregation from aggressive horses which may prevent them from eating hay placed in group feeders or pasture. Signs that an older horse has reached an end point vary but the use of MEDW is the basic assessment criteria. Additionally, frequent veterinary health examinations must be part of the routine care with geriatric animals so that early signs of metabolic organ failure or disease will be recognized and adequately addressed. Failure to attend promptly to diseases common to older horses can lead to unnecessary suffering and premature loss of life.

Decision Tree for the Timing and Need for the Humane End of Life

There are two instances where euthanasia of a horse needs to be considered. The first is the emergency setting where a painful, acute onset, condition such as fracture, head or spinal trauma and recumbency, severe colic, severe body wound, penetrating wound to a joint, etc. The second is a chronic longer term problem which may be progressing to a situation that is erosive to the quality of life or involves uncontrollable pain.

The emergency situation requires an immediate veterinary response and prompt evaluation and consideration for euthanasia. If immediate veterinary attendance is not possible, experienced farm managers, animal control officers, or others who have had training to certify them in the use of emergency euthanasia of horses may perform euthanasia on an animal if it is a clear cut situation with massive suffering and/or the impossibility for recovery.

Specific information regarding emergency euthanasia procedures can be found at: www.vetmed.ucdavis.edu/vetext/animalwelfare/euthanasia/emergencyEuth_horses2-2pdf

In chronic conditions the decision to end the life of a horse which has slowly progressed is much more difficult. While quality of life is always the primary consideration economic factors can also have influence. If a very old or infirmed animal cannot be maintained properly due to lack of the financial ability to sustain care, then euthanasia, may be a reasonable option. There is no standard flow chart or set of rules for decision making other than attempting to answer the following questions:

- How much suffering is the horse going through?
- What, if any, are the chances for recovery?
- What will be the veterinary costs of recovery?
- How much will it cost to maintain the debilitated animal?

- Can the care needed for the horse's condition be provided and maintained?
- Will other animals under the care of the facility be negatively affected by the commitment of time and expense to this one horse?
- Does the horse not meet MEDW standards for normal life in spite of the fact that it has been adequately treated for an extended period of time?

Specific guidelines for the humane end of life decision process for horses have been developed by the AAEP and can be found on their web site (www.aaep.org).

Carcass Disposal Protocols

Each state and many of the counties within them have specific guidelines for proper disposal of a horse's body following death or humane euthanasia. All rescue or sanctuary facilities should be familiar with the laws and regulations for their location. They should also have the contact information for a service which picks up

deceased horses, and the options provided through that service for burial, composting, cremation, or rendering. Horses euthanized by chemical injection of euthanasia solutions (pentobarbital) are considered contaminated with that substance, and if left uncovered on open ground for any length of time represent a health hazard to scavenging birds, dogs, and other animals through the ingestion of the contaminated tissue. Supervision of the carcass disposal is part of the duty of the facility.

Additional Assistance for "Medical Health Care Planning"

Further information and assistance can be found at the following web sites:

- Center for Equine Health, UC Davis, www.vetmed.ucdavis.edu/ceh
- International Animal Welfare Training Institute, UC Davis, www.vetmed.ucdavis.edu/iawti
- American Association of Equine Practitioners, www.aaep.org



Resources

AAEP Equine Welfare Committee, *Care Guidelines for Equine Rescue and Retirement Facilities*, American Association of Equine Practitioners, 2004.

FASS, *Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching*, Federation of Animal Science Societies, Savoy, IL, 1999.

Henneke, D. R., G. D. Potter, J. L. Kreider, and B. F. Yeates, *Relationship between condition score, physical measurements and body fat percentage in mares*, Equine Veterinary Journal 15(4):371–372, 1983.

Kronfeld, D., *Nutritional assessment in equine practice*, In *The Veterinarian's Practical Reference to Equine Nutrition* (K. N. Thompson, Ed.), American Association of Equine Practitioners and Purina Mills, Inc., USA, ISBN 0965959007, 1997.

National Research Council, *Nutrient Requirements of Horses* (5th Ed.), National Academy Press, Washington, DC, 1989.

National Research Council, *Nutrient Requirements of Horses* (6th Ed.), National Academy Press, Washington, DC, 2007.

Rollin, B. E., *Euthanasia and quality of life*, Journal of the American Veterinary Medical Association 228(7):1014-1016, 2006.

Stull, C. L., P. J. Hullinger, and A. V. Rodiek, *Fat supplementation to alfalfa diets for refeeding the starved horse*, The Professional Animal Scientist 19:47-54, 2003.

Witham, C. L., and C. L. Stull, *Metabolic responses of chronically starved horses to refeeding with three isoenergetic diets*, Journal of the American Veterinary Medical Association 212(5):691-696, 1998.

UC Davis Veterinary Medicine Extension Animal Welfare website,

www.vetmed.ucdavis.edu/vetext/animalwelfare.

About the Authors



Dr. Gregory Ferraro with Hilde

Dr. Gregory Ferraro, Director of the Center for Equine Health in the School of Veterinary Medicine at UC Davis, has contributed to the health and well being of horses through clinical practice, veterinary medical education and research. He has authored more than 50 scientific papers and articles on equine health. In 1976, Dr. Ferraro took the lead in establishing the Southern California Equine Foundation, which revolutionized equine racetrack practice by building an on-site hospital facility for use by all attending veterinarians to protect and advance the welfare of equine athletes. Their model of an on-site racetrack hospital has been emulated at racing venues throughout the world. The foundation partnership was also responsible for development of the Kimzey Equine Ambulance and the Kimzey Breakdown Splint, which have greatly improved veterinary care for severely injured horses. Dr. Ferraro was instrumental, in partnership with Dr. Madigan, in the development of the UC Davis large animal lift.

Dr. Ferraro earned his DVM degree at UC Davis School of Veterinary Medicine in 1971. He practiced clinical equine medicine and surgery in Southern California from 1971 to 1997 and was a professor of surgery at UC Davis in the Department of Surgical and Radiological Sciences, School of Veterinary Medicine, from 1979 to 1996. In 1998, he was appointed Director of the Center for Equine Health. He has served as president and chief executive officer for the Southern California Equine Foundation and is a trustee of the California Thoroughbred Foundation. In 2001, he was appointed by the governor to membership on the California State Veterinary Medical Board. He is a former director of the Dolly Green Research Foundation, former vice-chair of the Medication Committee of the California Horse Racing Board, and has served on several committees of the American Association of Equine Practitioners. In January 2009, Dr. Ferraro was appointed to the Equine Advisory Task Force by California Department of Food and Agriculture Secretary A. G. Kawamura. The task force is intended to increase collaboration between the horse industry and Department of Food and Agriculture on equine issues.



Dr. Carolyn Stull with Windfall

Dr. Carolyn Stull received her BS degree in biochemistry from Purdue University and continued her studies as a graduate student at the University of Illinois. She received her MS and PhD degrees while working on research projects focusing on muscle and exercise physiology in the horse. Currently, as a Cooperative Extension Specialist, Dr. Stull directs the School of Veterinary Medicine's Animal Welfare Program focusing on the well being of agricultural animals, primarily dairy cattle and horses. She is the national recipient of the "Hank Award," presented for outstanding research benefiting the welfare of the horse. She has served as the Chair of the Animal Welfare Committee of the U.S. Animal Health Association and has worked in collaboration with the U.S. Department of Agriculture on issues such as the Horse

Protection Act and the Commercial Transport of Equines to Slaughter. Dr. Stull was the North American representative to the ad hoc group on Land Transportation for the OIE, the World Organization for Animal Health. Her research projects have been focused on examining long-term transportation stress in horses, developing nutritional rehabilitation programs for starved animals, determining the glycemic index of common equine feeds, evaluating the impact of extreme weather events on the welfare of dairy cattle on commercial dairies, the care and handling of cull dairy cattle, and the characterization of unwanted horses relinquished to nonprofit rescue and shelter facilities throughout the United States.



*Dr. John Madigan with
Allie and Suzi*

Dr. John Madigan is a professor of medicine in the Department of Medicine and Epidemiology, School of Veterinary Medicine, UC Davis. He has been recognized for his contributions to equine medicine, neonatal care, and animal welfare and rescue. He earned his DVM degree at UC Davis in 1975 and is a Diplomate of the American College of Veterinary Internal medicine. He was a veterinarian in private practice until joining the UC Davis faculty in 1983 in the roles of assistant professor, clinician in equine medicine and head of the Equine Neonatal Intensive Care Program. In 1989 he became associate professor and head of the Horse Rescue Program. Since 1994, he has served as professor of medicine and epidemiology, senior clinician in Equine Medicine and Critical Care at the William R. Pritchard Veterinary Medical Teaching Hospital (VMTH), head of the Veterinary Emergency Response Team, coordinator and head of the Equine Helicopter Rescue Program, and chief of the Equine Medicine Service at the VMTH. He is the director of the International Animal Welfare Training Institute at UC Davis.

In addition to serving as research scientist, mentor and educator, Dr. Madigan has made important personal and professional contributions to animal welfare. He was instrumental in the development of the UC Davis Anderson Sling and the UC Davis Large Animal Lift, state-of-the-art equipment for both emergency medicine and large animal rescue. He has actively engaged in several rescue operations for animals in natural disasters such as floods and fires and has been the driving force behind the UC Davis Veterinary Emergency Response Team.

Since 2001, Dr. Madigan has served on the State of California Committee for Animal Care during Disasters, and since 2000 on the California Veterinary Medical Association Disaster Preparedness Committee. He was a member of the American Veterinary Medical Association Committee on Disaster and Emergency Issues from 2002 to 2006. He received the Pfizer Award for Research Excellence in 1996 and in 2006 received the Animal Welfare Award from the American Veterinary Medical Association, the Distinguished Service Award from the American Association of Equine Practitioners, the Legend of Veterinary Academic Medicine Award from Kansas State University, the American Red Cross Hero Award, and the United States Congressional Achievement Recognition Award.

Appendix

EQUINE SANCTUARY & RESCUE FACILITY EVALUATION CHECKLIST



Equine Sanctuary & Rescue Facility

EVALUATION CHECKLIST

Name of evaluator: _____ Date of inspection: _____

Name of facility: _____

Location of facility: _____

Number of acres owned: _____ or leased: _____

Telephone number: _____ Fax: _____ E-mail: _____

Website: _____

Name of contact person or facility manager: _____

Name of key officer: _____

Year of establishment: _____

Current number of horses receiving care: _____

Number of horses provided care by the facility in a given year: _____

Name of attending veterinarian of record: _____

Telephone number of attending veterinarian: _____

Name of farrier(s) for facility: _____

Telephone number of farrier(s): _____

Section 1: Operational Business and Financial Plan

Yes No NA

- | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Management has established the basic type of business entity (i.e., sole proprietorship, limited partnership, corporation, nonprofit 501(c)(3) status, etc.) suitable for the facility and its goals and programs. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Management has developed and implemented a written business plan including the goals of the facility, operational parameters, and financial structure. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Oversight authority such as a Board of Directors or Trustees has been established to contribute to the viability of programs and financial security. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Management has established with written protocols the key areas of operational responsibility and identified key personnel. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Management has employed professional and independent accounting, tax preparation, and financial planning services. |

Section 1: Operational Business and Financial Plan (continued)

Yes No NA

- The facility owns the land and buildings utilized for their operations and programs.
- Management established and implements standards for the care, handling and well being of animals on the sanctuary/rescue facility and communicates expectations to employees.
- Written emergency/weekend/holiday animal care plans (emergency phone numbers, contacts and protocols) are posted in a visible location.

Section 2: Facility Design and Construction

- Facilities are designed and maintained to provide safe and comfortable conditions for all horses including ventilation, flooring and fencing.
- Adequate lighting in facilities and stalls allows for inspection of animals and provides safe working conditions.
- Water supply and watering devices are designed to be safely accessible to all horses and maintained to provide safe, clean and ample water supply.
- Horses housed in stalls are provided with a clean, safe and properly bedded stall.
- Adequate shelter or shade in case of extreme weather conditions is provided to all horses permanently kept outside.
- Barbed wire or small-gauge, high-tensile wire fencing is not used for any enclosure of horses at the facility.
- A designated workspace for grooming, farrier services, or veterinary care is available that is well-lit with a nonslip ground surface and access to a water supply.
- Hay and feed are stored in areas protected from moisture and sunlight with adequate insect and rodent control measures established.
- Adequate tools and equipment for manure removal area readily accessible and maintained in working condition.
- A waste removal plan has been developed in accordance with city, county and state regulations to ensure proper control and timely removal of manure and contaminated bedding materials in both the indoor and outdoor areas of the facility.

Section 3: Husbandry Practices

- An appropriate system for animal identification is utilized on all horses housed within the sanctuary/rescue facility.
- Written feedback protocols have been developed for maintenance diets, geriatric, sick or injured horses, and obese or starved horses.

Section 3: Husbandry Practices (continued)

- | Yes | No | NA | |
|--------------------------|--------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Poor-quality feed, such as moldy or dusty hay, is never fed to horses. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Horses housed in indoor facilities are fed at least twice per day. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The supply of water for all horses is checked twice per day. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | In severely cold climates, water sources are heated to ensure access. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Newly arrived horses are quarantined for two weeks before co-mingling with resident horses. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The selection of horses for cohabitation considers gender, age, health and disposition to avoid aggressive behaviors. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Horses are visually inspected and monitored morning and evening to identify any new injuries or health problems that may have been acquired. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Hoof care by a farrier is practiced on a regular schedule for each horse. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The facility maintains and safely operates horse transportation equipment. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Horses are trained to load into the transport van or trailer. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | An emergency evacuation plan is written and reviewed yearly by all employees, including designated alternative facilities for relocation, alternate routes for evacuation, adequate transportation identified, and contingencies for "hold in place" emergency procedures. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | There are sufficient halters and lead ropes to allow for the evacuation—on foot or by van—of every horse in a disaster situation. |

Section 4. Medical Health Care Planning

- | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The sanctuary or rescue facility has a permanent working relationship with a local veterinary practice that is experienced in the care of horses and the contact information is posted. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | The sanctuary or rescue facility has individual stalls and necessary supplies available for medical treatments to ensure proper care of horses treated on site. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | A medical record is established and kept current for every horse provided care by the sanctuary or rescue facility. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Standard preventative health programs such as vaccinations, deworming and dental care are developed and written in consultation with the attending veterinarian and implemented according to schedule. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Periodic routine medical examinations are performed on all horses to ensure early detection of health problems. |

Section 4: Medical Health Care Planning (continued)

Yes No NA

- | | | | |
|--------------------------|--------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Housing facilities, necessary supplies and equipment, and written protocols are in place to provide proper isolation of horses newly introduced to the property and for the medical quarantine of those animals suspected of carrying contagious disease. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Written protocols for emergency medical procedures for newly arrived horses and resident horses have been developed in consultation with the attending veterinarian and are ready to be implemented by employees of the facility. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Horses unable to rise receive immediate emergency veterinary evaluation within 1 to 2 hours of the discovered recumbency to ensure proper medical care and humane treatment. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Protocols are developed in consultation with the attending veterinarian for the care, feeding and medical treatment of geriatric horses. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Written humane end-of-life protocols are developed for assessing geriatric or medically compromised horses. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | A protocol has been developed for emergency euthanasia in the event that prompt veterinary attendance is not possible. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Following death or euthanasia of a horse, the carcass is disposed of properly according to local regulations and the contact information posted for employees. |

