

Planning Guidance for Heavy Use Areas/Animal Concentration Areas

1. Applicability

This guidance applies to all existing and planned animal concentration areas (non-pasture) where technical and/or financial assistance will be provided. Animal concentration areas (ACAs) can include but are not limited to animal holding areas, exercise lots, loafing lots, feeding areas, watering areas, and at paddock or fence gates. ACAs can pose a direct threat to surface and ground water quality where many of these concentration areas have the potential to receive large amounts of nutrients in the form of manure and urine. Livestock concentration areas have long been suspected to contribute to nutrient enrichment of water quality through highly elevated soil nutrient levels and with no surrounding vegetation to filter the runoff. Assistance can only be provided where there is a documented resource concern, and/or where the assistance will result in net environmental benefits. These benefits will include water quality, soil quality, animal health, and may also include others such as air quality.

This planning process is to serve as a guide to solve resource concerns associated with heavy use areas/animal concentration areas but this document cannot capture every situation. Site specific planning and sound judgment is essential in planning practices associated with animal concentration areas.

2. Procedure

An inventory and evaluation (I&E) must be conducted to evaluate the resource concerns and develop feasible alternatives, including cost estimates. All reasonable practices and alternatives must be documented, which may include but are not limited to Heavy Use Area Protection (561), Constructed Wetland (656) and/or Filter Strip (393) or Vegetated Treatment Area (635), Fence (382), Access Control (472), Waste Storage Facility (313), Roof Runoff Management (558); Roofs and Covers (367), Diversion (362), Nutrient Management (590), and Prescribed Grazing (528).

I&Es must be conducted with the landowner's involvement, and the reports prepared by someone with the appropriate Engineering Job Approval Authority for the I&E. The I&E should be documented with a draft Animal Waste Management System Plan (AWMSP) along with the conservation plan. If the I&E is not completed with the conservation plan, it must be completed before a program contract can be written. The "Risk Assessment of Water Impairment for Concentrated/Feeding Livestock Areas", Virginia Technical Note Water Quality Nutrient Management #2 should be completed as part of the I&E and is part of the conservation planning process. This risk assessment tool is to provide an evaluation method for conservation planners to assess the risk of water quality impairment from a concentrated/feeding area. The determination of potential to impair water quality in this tool looks at two factors 1) Determines the nutrient loading rate on the ACA and 2) Evaluates the on site features that affect the potential to transport nutrients from the ACA to water features. Exhibit 1 is a decision tree to help guide the planning process and possible alternatives when working with clients to solve water quality resource concerns associated with ACAs.

Installation of Heavy Use Area Protection (HUAP) on Animal Feeding Operations to address manure and/or wastewater handling must be part of a Comprehensive Nutrient Management Plan (CNMP). A CNMP is a conservation plan that is unique to Animal Feeding Operations (AFOs). It is a grouping of conservation practices and management activities which, when implemented as part of the conservation system, will help ensure both production and natural resource protection goals.

Typically a CNMP is comprised of six elements, two of which are optional:

- 1) Manure and Wastewater Handling and Storage
- 2) Land Treatment Practices
- 3) Nutrient Management
- 4) Record Keeping
- 5) Feed Management (Optional)
- 6) Other Utilization Options (Optional)

The CNMP accounts for the nutrient flow through the farm system. A CNMP must include 1) the production areas, including animal concentration areas, feed, and other raw material storage areas, animal mortality facilities, manure handling and storage areas and 2) the land treatment area, including any land under control of the owner or operator, whether it is owned, rented, or leased which manure or wastewater is, or may be applied, for crop, hay, pasture, or other land uses.

Together the Conservation Plan, the Agriculture Waste Management System Plan, and the Nutrient Management Plan are parts that make up a CNMP. The Conservation Plan, which addresses all production areas of the operation and the associated spreadable acres, must meet NRCS quality criteria for water quality (nutrients, organics, and sediments in surface and groundwater) and soil erosion (sheet and rill, wind, ephemeral gully, classic gully and irrigation on production areas and land treatment area). The conservation plan must also mitigate, if feasible, any excessive air emissions and/or negative impacts to air quality resource concerns that may result from practices identified in the CNMP or may be existing on the operation. The CNMP must comply with Federal, State, and local laws, regulations, and permit requirements.

3. Location or Site Selection

The environmental risk of an unimproved animal concentration area can be directly related to its proximity to surface water bodies and sinks. The alternatives to solve problems close to streams and karst/sink holes may include relocation of the animal concentration area to a less sensitive area. Care must be taken to identify and separate practices that address environmental concerns from production practices such as housing and the feeding and watering facilities that are part of it. Proximity to groundwater, or location on poorly drained or excessively well drained soils may pose similar risk. Providing drainage and/or impervious base or surface material can usually address these problems.

4. Management Considerations

Management considerations along with identifying proper sites or locations of an animal concentration area need to be considered and discussed with the landowner or operator. Many times simply identifying the ACAs and/or potential concentration areas and working with the producer to properly locate and manage these areas can avoid impacting our resources and costly structural alternatives to reduce those impacts. Moving feeding areas, unrolling of hay bales, properly locating

gates or watering facilities, locating or relocating holding areas and exercise lots to non-sensitive locations may alleviate water quality resource concerns. Proper siting and management of animal concentration areas where there is an adequate filter down slope of the ACA and, diverting surface water to keep clean water from becoming contaminated may be an adequate solution to the identified resource concern.

5. Space

In planning animal concentration areas, it is important to provide appropriate space, depending on the type, age and size of livestock, the intended use of the space, the frequency and duration the livestock will be in the space, the availability of feed and water in the animal concentration area or accessibility to them in the barn or elsewhere, and the surface material on which the livestock will be confined. In addition, space must be provided for traffic flow, manure scraping maneuverability, and manure stacking and filter areas where applicable.

Design Note # 561 provides appropriate animal concentration area size ranges on paved and unpaved surfaces for three size ranges of dairy and beef cattle. These size ranges are intended as basic space needs which can be adjusted to account for the factors described above. These size ranges do not include animal housing, and are assumed to be in addition to appropriate housing or shelter, which are production practices. These size ranges do not supersede criteria that may appear in Section IV conservation practice standards.

A combination of surface materials and pro-rated sizes can be used within an animal concentration area to transition from more intensely used areas around feed and water sources to less intense exercise and loafing areas. A rotational loafing lot system is intended to have vegetative cover at all times and prevent nutrient and sediment runoff. Cattle are rotated from lot to lot to maintain vegetative cover. Plant species will need to be considered for durability to withstand the expected use. In order for the forage to take up nutrients it must be managed for growth and harvested for hay when possible. If adequate housing facilities are not available when wet weather conditions prohibit the use of the lots, a sacrifice area will be required and must be scraped periodically to remove the nutrients. This sacrifice area should follow the guidelines contained in this document for sizing, location, and management.

6. Roofs

If a roof is planned for anything other than an Agrichemical Handling Facility (596), Waste Storage Facility (313) for stackable manure, Composting Facility (317), or an Animal Mortality Facility (316), it must be compared to all other technically feasible alternatives. If there are no other technically feasible alternatives, there must be a clear explanation in the I&E report of the site specific conditions that prohibit all other alternatives.

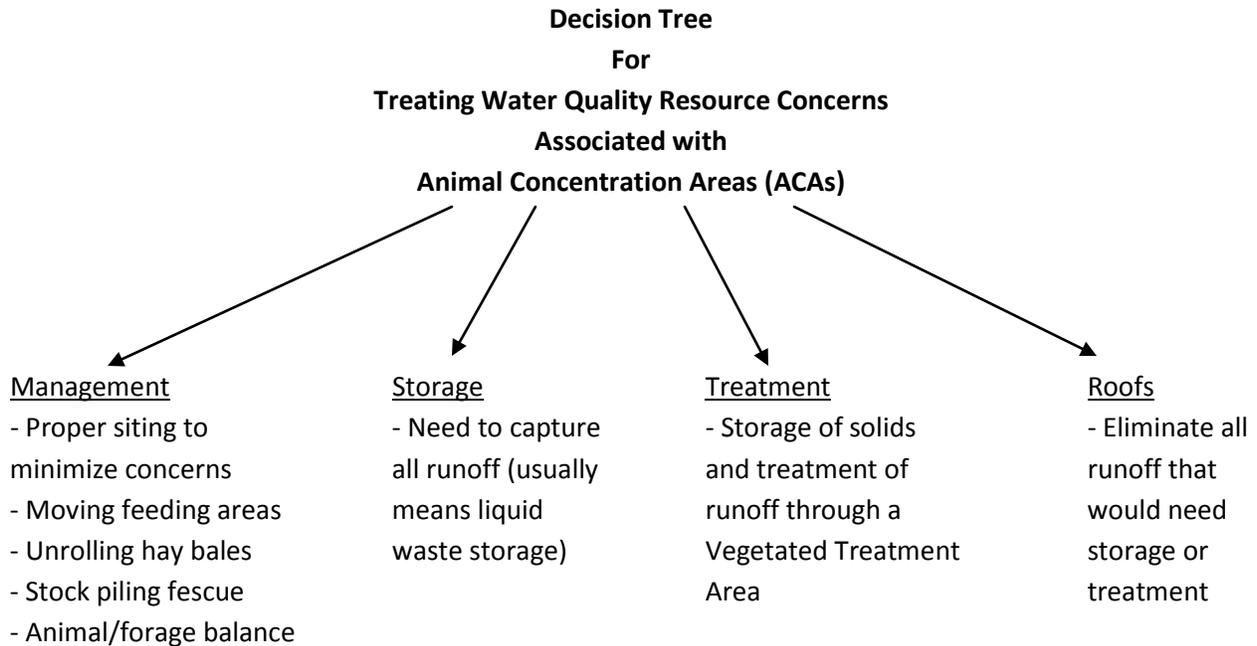
7. Conditions

The technically feasible alternatives in the I&E are the only ones to be offered to the landowner or operator. The identified resource concerns and the alternatives to address the concerns must be documented in the Environmental Evaluation, NRCS-CPA-52 form. The selected alternative (including all component practices) must be documented as the landowner's record of decision in the

conservation plan which defines further assistance. The cost items in a program contract must be based on the selected alternative as described in the I&E report, or in the design cost estimate, unless otherwise limited to less than the cost estimate by program constraints.

Any expansion or relocation of the current planned facility must be implemented to the same degree of environmental benefits. The intended use of the practices must be documented. If the constructed facility is used for an unintended purpose, there must be no conflict with the intended purpose.

A site specific O&M plan that explains the performance expectations and necessary actions to assure the longevity of the practices shall be reviewed with the landowner. The environmental benefits of the facility cannot be jeopardized.



* Treating water quality resource concerns associated with ACAs includes managing all runoff (both solids and liquids) from that area of concern.

* There are many associated practices that keep clean water clean when treating water quality resource concerns with ACAs including but not limited to: Waterways, Diversions, Prescribed Grazing, Roof Runoff Structure, etc.

* In order to meet water quality resource concerns, concrete curbs and fencing of the HUA needs to be considered in order to have proper management of the area and the associated nutrients.

* Vegetated Treatment Areas (VTAs) need to be fenced and managed to remove nutrients from this area.

Application of Filter Strips vs. Vegetative Treatment Areas (VTA)

Filter Strip Standard

Purpose: To protect environmentally sensitive areas (streams, wetlands, sinkholes, karst areas, etc.) from sediment, other suspended solids and dissolved contaminants in runoff.

Application: Areas down slope of cropland, grazing land, loafing lots, or disturbed land (including forest land) adjacent to environmentally sensitive areas.

Vegetated Treatment Area

Purpose: To improve water quality and treat contaminated runoff associated with livestock and other agricultural operations.

Application: Feedlots, compost areas, barnyards, and other livestock holding areas.