Name of Practice: DAIRY LOAFING LOT MANAGEMENT SYSTEM
DCR Specifications for No. WP-4B

This document specifies terms and conditions for the Virginia Department of Conservation and Recreation's loafing lot management system best management practice, that are applicable to all contracts, entered into with respect to that practice.

A. Purpose and Description

To prevent those areas exposed to heavy livestock traffic from experiencing excessive manure and soil losses due to the destruction of ground cover. Unimproved loafing lots that are used for herd exercise and loafing are usually denuded of vegetation and harbor undesirable plants.

The intent of this practice is to prevent manure and sediment runoff from entering watercourses and sensitive karst areas and to capture a portion of the manure as a resource for other uses such as crop fertilizer. This is accomplished by dividing the area into lots. The cattle are rotated from lotto lot as is necessary to maintain a vegetative cover. One lot is designated as a sacrifice area for use in periods of wet weather.

B. Policies and Specifications

1. A management plan and practice design is to be developed with consultation from a qualified consultant, VCE, NRCS and/or SWCD.

2. A minimum of three grassed loafing paddocks are required. Each grassed loafing paddock will be sized based on soil type, topography and herd size not to exceed one acre per twenty to twenty-five (1,000 lb. EAU) cattle and be maintained in permanent forage.

3. All live streams must be fenced from livestock use in the loafing paddocks and sacrifice area. A minimum 35-ft. buffer must be maintained.

4. Concrete walkway(s) with curbing or other hardened walkway(s) (crusher run is not an acceptable surface material) may be installed to facilitate herd movement from the barn to the loafing lots. Slope is to be no greater than 8%. See VCE publication on installing dairy lanes.

5. A sacrifice area is required unless adequate housing facilities are available (e.g. free stall barns).
   i. Sacrifice area (if needed) must be scraped periodically.
   ii. The sacrifice area should not be sized to exceed 600 to 650 square feet per animal (1,000-lb. equivalent). It should be sloped between 1% minimum to 8% maximum.
   iii. Divert surface water away from the sacrifice area.
   iv. Provide filter strip per NRCS standard 393 to filter runoff from the sacrifice area.

6. In order for the forage to take up nutrients such as nitrogen it must be managed for growth and harvested for hay when possible. Dry cows or other grazers can be used to remove forage growth.

7. Critical eroding and sensitive areas will be fenced out and permanent cover established.

8. If a sacrifice lot is impractical due soil and/or topographical conditions, a loose housing structure may be substituted for the sacrifice lot.
   i. All other potential more cost-effective approaches to reducing the water quality impact from the unimproved loafing lot must have been explored and rejected, due to economic inefficiency or lack of space for relocation, before cost-share or tax credit can be approved for constructing a loose housing structure.
   ii. Cost share funding for a loose housing structure will only be authorized if a "Risk Assessment for Water Impairment from Concentrated/Feeding/Loafing* Livestock Areas" has been completed and a score of 120 or greater has been obtained.
   iii. General Design guidelines for Loose Housing Structures

      a) Bedded pack space requirements:
         1) 60 sq. ft. per heifer minimum
         2) 100 sq. ft. per lactating cow minimum
         3) 120 sq. ft. per dry cow

      b) If the loose housing structure is to have a roof, wind and snow loads shall be as specified in NRCS 367 Roofs and Covers or ASAE EP288.5 Agricultural Building Snow and Wind Loads. A PE shall certify roof designs. If the facility is to serve as part of a foundation or support for a building, the total load shall be considered in the structural design.

9. A nutrient management plan developed in accordance with requirements for nutrient management plan content and procedures as stipulated in the Nutrient Management Training and Certification Regulations for land application or a planned waste management system for any other uses of manure produced. The nutrient management plan should address all the acreage, which the participant farms where manure from the loafing lot system will be applied. The nutrient management plan should be implemented and maintained for the life of the practice. Design storage capacity of animal waste facilities should be coordinated with the nutrient management plan so that adequate storage capacity is installed for the specific cropping system.

10. Cost-Share is authorized for watering facilities in the loafing lots .

11. For Structural Design Specifications for Loose Housing Structures refer to NRCS Standard 313 Waste Storage Facility.

12. This practice is subject to NRCS Standards; 342 Critical Area Planting, 362 Diversion, 367 Roofs and Covers, 382 Fence, 516 Livestock Pipeline, 533 Pumping Plant, 558 Roof Runoff Structure, 561 Heavy Use Area Protection, 574 Spring Development, 575 Trails and Walkways, 590 Nutrient Management, 614 Watering Facility, 620 Underground Outlet, 633 Waste Recycling, 634 Waste Transfer and 642 water well.

13. All practice components implemented must be maintained for a minimum of 10 years following the calendar year of installation. The lifespan begins on Jan. 1 of the calendar year following the year of certification of completion. By accepting either a cost-share payment or a state tax credit for this practice the participant agrees to maintain all practice components for the specified lifespan. This practice is subject to spot check by the SWCD throughout the lifespan of the practice and failure to maintain the practice may result in reimbursement of cost share and/or tax credits.

C. Rate(s)

1. The state cost-share payment, alone or if combined with any other cost-share payment, will not exceed 75% of the total eligible cost. The maximum state cost share payment is $70,000 per year for the construction of a system to manage concentrated livestock traffic.

2. As set forth by Virginia Code § 58.1-339.3 and §58.1-439.5, Virginia law currently provides a tax credit for implementation of certain BMP practices. The current tax credit rate, which is subject to change in accordance with the Code of Virginia, is 25% of the total eligible cost not to exceed $17,500.00.

D. Technical Responsibility

Technical and administrative responsibility is assigned to qualified technical DCR and SWCD staff in consultation, where appropriate and based on the controlling standard, with DCR, Virginia Certified Nutrient Management Planner(s), NRCS, DOF, and VCE . Individuals certifying technical need and technical practice installation shall have appropriate certifications as identified above, and/or Engineering Job Approval Authority (EJAA), for the designed and installed component(s). All practices are subject to spot check procedures and any other quality control measures.

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Risk Assessment for Water Quality Impairment from Heavy Use Areas/Animal Concentrated Areas

Client's Name: _____ Farm #: _____ Tract #: _____

Livestock Type: _____ No: _____ Avg. Wt.: _____

Is the cooperator currently feeding hay or other feedstuffs from a fixed location? ☐ Yes ☐ No

If yes, then describe where and how they are feeding:

If the cooperator is not feeding hay or other supplements, then do not complete this form.

For those who are feeding, are alternative concentrated feeding locations available? ☐ Yes ☐ No

Could relocation of the concentrated feeding area reduce the risk to the water resources? ☐ Yes ☐ No

Describe the alternatives discussed with the landowner:

Describe the selected alternative:

Note: The Landowner should be informed that if the selected alternative includes manure or wastewater handling, storage, or treatment practices, a Comprehensive Nutrient Management Plan (CNMP) must be developed and implemented for the farm prior to construction of the storage facility.

VA NRCS Concentrated/Feeding Livestock Area Manure and Nutrient Loading Estimator

1. Manure Estimator - Input site specific data into the table below:

Select Livestock Type from the list below in Table 1:	INPUTS								OUTPUT - Waste deposited annually in concentrated area		
	A	B	C	D	E	F	G	H			
	Number of animals fed	Average animal weight (lbs)	Days in concen-trated area (per year)	Portion of manure dropped in concen-trated area (%)	Size of concen-trated area (ac)	Manure production rate (lbs/day per 1,000 lbs of live weight)	Total N per ton of manure	Total P_2O_5 per ton of manure	Manure (tons/ac/ yr)	Total N (lbs/ac/ yr)	Total P_2O_5 (lbs/ac/ yr)
6	100	75	250	90%	0.25	40	22.5	8	**135**	**3,038**	**1,080**

2. Guidance on inputs:

Column A, B, C, D, E, are site specific and may be adjusted according to site conditions and professional judgement.

Column D: If water is available in concentrated/feeding area, assume 60-70% drops in the area (adjust to site conditions).
If water is only available in pasture outside concentrated/feeding area, assume 40-50% drops in the area (adjust to site conditions).

Column E: The concentrated feeding area includes the feeding pad plus the total surrounding area with < 60% cover.

Columns F through H (see Table 1 below) are auto-filled with appropriate values when livestock type is selected.

TABLE 1

Livestock Type	Weight	Manure lbs./day/1,000lbs.	N/ton of manure	P_2O_5/ton of manure
1: Beef Finishing	400 - 1,000	65	11	3.1
2: Beef Cow/calf	900 - 1,400	104	7	3.5
3: Non Lact. Dairy	150 - 1,500	56	10	4
4: Lactating Dairy	1100 -1,500	119	13	5.4
5: Horse	1000-1,500	52	9.6	4.2
6: Goats/Sheep	30-200	40	22.5	8

Note: Calculation of manure weight, N, and P are associated with livestock concentrated/feeding locations. Dairy, beef, horse and sheep values are based on NRCS Agricultural Waste Management Field Handbook (AWMFH).

3. Guidance on interpreting output:

TABLE 2

Loading Rate (lbs/ac/yr) from Estimator above		Level of Concern	Water resources at risk	Loading Points
N	P2O5			
Less than 200	Less than 80	Minor	No	0
201 to300	81-120	Moderate	Possibly	15
301 to 800	121-310	Major	Possibly	40
801 to 1000	311-390	Excessive	Possibly	75
1,001 +	390 +	Extreme	Possibly	80

	Comments	**Loading Points**
Loading Points:	From Table 2	

Site Information - Receiving water feature and buffer considerations: (see exhibit 1 to determine if points are to be given in Section A below for overland flow to a vulnerable water feature *or* Section B below for a concentrated flow to a vulnerable water feature)

(A1) Overland Flow - Proximity to Vulnerable Water Feature:

		Comments	
< 100 Feet:	40 points	*Distance from edge of concentrated/ feeding area to edge of a water feature which includes open sinkholes, springs, streams (perennial or intermittent), wetlands and ponds.*	
100- 199 Feet:	25 points		
200-300 Feet:	15 points		
>300 Feet:	0 points		

(A2) Buffer width adjacent to the selected water feature:

< 35 Feet:	20 points	*A buffer is a vegetative area which effectively filters overland flow to the adjoining water feature (0-34' is not an effective buffer). Source: P Index and FOTG.*	
35 -100 Feet:	10 points		
>100 Feet:	0 points		
		Sum of A1 and A2:	**0**

or

(B) Concentrated Flow - Does the runnoff from the ACA enter a transport feature within 300 feet of the edge of the ACA?

Yes	60 points	*Transport Feature - A swale, grassed waterway, gully, or similar feature where concentrated water flow occurs. (This transport feature must flow into the vulnerable water feature in the above question)*	
No	0 points		

The greater of A *or* B (maximum 60 points can be earned here):	**0**

Is the Vulnerable Water feature or Receiving Water Feature above classified as high value water?

High Value Water - A stream, lake, or estuary designated within a TMDL watershed based on the 303d Impaired Waters List, endangered species, and/or designated trout waters.	Yes =	20 points	
	No =	0 points	

Site Information: **Scoring Boxes**

	Comments	
Environmental Sensitivity Index: High 15 points Medium 10 points Low 0 points	From DCRs *Virginia Nutrient Management Standards and Criteria, Revised 10/2005,* Table 1-4. Includes soils with leaching potential, shallow soils and poor drainage. *(Use soil series at the existing HUA/ACA.)*	
Slope: 0-2 % 0 points 2-6% 5 points 6-15% 15 points 15-25% 25 points	General slope of the HUA/ACA from the edge of feeding area to the vulnerable water feature.	
	Total Score:	0

Note: If total is 120 or greater, there is a significant risk of water resource impairment. Follow the planning process to address this concern. Consider both structural and non-structural alternatives.

Definitions:

Buffer - A permanently vegetated area with a minimum width of 35 feet.

High Value Water - A stream, lake, or estuary designated within a TMDL watershed based on the 303d Impaired Waters List, endangered species, and/or designated trout waters.

Karst features - Includes sinkholes, limestone rock outcrops, and fractured limestone that are direct conduits to ground water.

Vulnerable Water Feature - An open sinkhole, stream (perennial or intermittent), spring, wetland, or pond that is receiving overland flow.

Transport Feature - A swale, grassed waterway, gully, or similar feature where concentrated water flow occurs.

HUA/ACA - Areas which have a high concentration of livestock, large amounts of waste and the inability to sustain vegetation.

Exhibit 1