



LARAMIE COUNTY PLANNING & DEVELOPMENT DEPARTMENT

Planning • Building

MEMORANDUM

TO: Laramie County Board of Commissioners

FROM: Brad Emmons, Planning and Development Director

DATE: May 5, 2020

SUBJECT: A Public Hearing to discuss and adopt new rules for regulating setbacks for Concentrated Feeding Operations (CAFO) within Laramie County

Executive Summary:

On March 17th, 2020 a public hearing was held to determine whether an odor footprint tool could be used along with other requirements to come up with a setback distance. Based upon the discussion at that meeting and previous meetings the Laramie County Planning Office puts forward the attached regulations for review and approval of the Board of County Commissioners. If the Commissioners do decide to adopt these regulations planning staff recommends the Board replace the existing section 2-2-111 of the amended 2019 Laramie County Land Use Regulations with the new section 2-2-111 presented at the May 5, 2020 Laramie County Commissioners Board Meeting.

Proposed Motion:

I move to repeal section 2-2-111 of the amended 2019 Laramie County Land Use Regulation and replace with a new section 2-2-111 of the amended 2019 Laramie County Land Use Regulations contained in the staff report presented to the Board of County Commissioners at the May 5, 2020 meeting.

2-2-111 CONCENTRATED FEEDING OPERATIONS (CAFO)

- a. These regulations are promulgated by authority of W.S. 16-3-103, W.S. 18-5-201, and W.S. 35-11-302(a)(ix).
- b. These regulations are intended to promote the public health, safety, and general welfare of Laramie County, specifically to address pollution of ground and surface water, minimization of odors for public health concern, and minimization of pathogens and vectors capable of transporting infectious disease. Data for this tool was selected from the current Nebraska Odor Footprint Tool using the most similar weather area to Laramie County(The Panhandle Region). If a species type and type of facility is not listed the applicant shall provide data to the county on how that species correlates to a listed species and odor emission number.
- c. All Concentrated feeding operations require Board Approval and Site Plan Approval prior to operation and DEQ approval when applicable. Applicant shall provide maps and documentation on how they derived at the setback for Laramie County review. Mailed notice by Laramie County shall be to all property owners within 1 mile of the parcel boundary that the CAFO will be sited.
- d. For the purposes of this article, a concentrated feeding operation is any housed facility, including any lagoon and other waste treatment facilities associated therewith, wherein livestock are confined, fed and maintained for a total of forty-five (45) consecutive days or more in any twelve (12) months, and the feed lot or facility is designed to confine an equivalent of 1,000 or more animal units. Please refer to WYDEQ Appendix G – Criteria for determining a concentrated feeding operation and additional requirements applicable to new and existing concentrated animal feeding operation to see if you facility qualifies as a CAFO.
- e. Setbacks
 - I. All structures housing livestock, or the waste treatment works and lagoons associated therewith, shall adhere to the setback requirements of Laramie County by using the odor footprint tool included in this section. Required setback distances are to any residential use, commercial or industrial facility, or church, school or any other facility operated and/or facility utilized by the general public located at the time of CAFO application

unless they have written consent from the owner, school board, or municipality along with DEQ approval if required, Required setback distance shall be taken from the outer edge of the CAFO facility and be determined by the odor footprint tool or 1 mile whichever is greater. Any facility with a scaled odor emission rate of over 40 must provide an odor setback distance designed by a professional engineer.

- ii. An annoyance free 98% curve will be used
- iii. Odor Footprint Tool Information and Tables

ESTIMATING SETBACK DISTANCES USING THE ODOR FOOTPRINT TOOL
Worksheet for Calculating Separation Distances for a Particular Animal Production Site

Project description: _____

Location: _____
Region: _____

GENERAL INFORMATION FOR BASE PLAN						INFORMATION FOR ODOR CONTROL OPTION			
Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	
Source Facility <i>Describe</i>	Plan Dimensions (e.g. ft x ft) <i>Show</i>	Plan Area (sq. ft.) <i>Calculate</i>	Odor Emission Number (OU/s-ft ²) <i>Tables 1 & 2</i>	Odor Control Factor <i>Table 3</i>	Scaled Odor Emission Rate (x 10 ⁶ OU/s) <i>C x D x E + 1,000,000</i>	Odor Control Practice Being Considered <i>Describe</i>	Odor Control Factor <i>Table 3</i>	Scaled Odor Emission Rate (x 10 ⁶ OU/s) <i>F x H</i>	
1)									
2)									
3)									
4)									
5)									
Total scaled odor emission rate = <i>Sum of values in Column F</i>						Total scaled odor emission rate = <i>Sum of values in Column I</i>			
Annoyance-Free Percentage <i>Circle value chosen by you or by community</i>		Directional Setback Distances (miles or fraction thereof) <i>Locate using set of setback curves for region</i>				Directional Setback Distances (miles or fraction thereof) <i>Locate using set of setback curves for region</i>			
90 94 96 98 99 %		North / NE	East / SE	South / SW	West / NW	N / NE	E / SE	S / SW	W / NW
Base separation distance <i>Read off of regional curves</i>									
Applicable terrain factor <i>From Table 4</i>									
Adjusted separation distance <i>Base distance x Terrain factor</i>									

Prepared by: _____

Date prepared: _____

DETERMINING SEPARATION DISTANCE USING THE ODOR FOOTPRINT TOOL
FACILITY INFORMATION: ODOR SOURCE INPUT DATA

TABLE 1. ODOR EMISSION NUMBERS FOR ANIMAL HOUSING UNITS

SPECIES	TYPE/STAGE OF PRODUCTION	TYPE OF FACILITY	ODOR EMISSION NUMBER
CATTLE	BEEF	DIRT/CONCRET LOT (AREA IS SELDOM DRY)	20
	DAIRY	SCRAPED FREESTALL BARN	30
		SLATTED-FLOOR BARN	
		LOOSE HOUSING, SCRAPED	
	TIESTALL BARN		
SWINE	GESTATION	DEEP-PIT BUILDING	245
		SHALLOW-PIT BUILDING, (E.G PULL PLUG SYSTEM)	145
	FARROWING	SHALLOW-PIT BUILDING, (E.G PULL PLUG SYSTEM)	70
	NURSERY	DEEP OR SHALLOW PIT	205
	FINISHING	DEEP-PIT BUILDING	165
		SHALLOW-PIT BUILDING, (E.G PULL PLUG SYSTEM)	95
		HOOP BARN, DEEP-BEDDED & SCRAPED	20
		CARGILL/OPEN FRONT, SCRAPE	
LOOSE HOUSING, SCRAPED		55	
OPEN CONCRETE LOT, SCRAPE			
POULTRY	BROILER	FLOOR-RAISED ON LITTER	10
	TURKEY	LITTER	10

TABLE 2. ODOR EMISSION NUMBERS FOR MANURE HANDLING FACILITIES

TYPE OF FACILITY		ODOR EMISSION NUMBER
MANURE STORAGE FACILITY	EARTHEN BASIN	65
	STEEL OR CONCRETE TANK, ABOVE OR BELOW GROUND	135
	CRUSTED STOCKPILE	10

TABLE 3. ODOR CONTROL FACTORS

ODOR CONTROL TECHNOLOGY		% ODOR REDUCTION	ODOR CONTROL FACTOR
NO SUPPLEMENTAL ODOR CONTROL OF IMPLEMENTED ON THE FACILITY		NONE	1
BIOFILTER USED TO TREAT AIR FROM EXHAUST FANS	FULLY MECHANICALLY VENTILATED FACILITY; BIOFILTER TREATS 100% OF EXHAUST AR	90	0.1
	MILD-WEATHER AIRFLOW IS PROVIDED BY FANS; BIOFILTER TREATS ONLY AIRFLOW FROM MINIMUM VENTILATION FANS	60	0.4
	BIOFILTER TREATS ONLY AIRFLOW FROM MINIMUM VENTILATIONS FANS	30	0.7
OIL SPRINKLING USED TO CONTROL DUST WITHIN BUILDING		20	0.8
IMPERMEABLE COVER		90	0.1
GEOTEXTILE COVER (AT LEAST 2.4 MM THICK)		50	0.5
STRAW OR NATURAL CRUST ON MANURE	8" THICK	70	0.3
	6" THICK	60	0.4
	4" THICK	50	0.5
	2" THICK	40	0.6

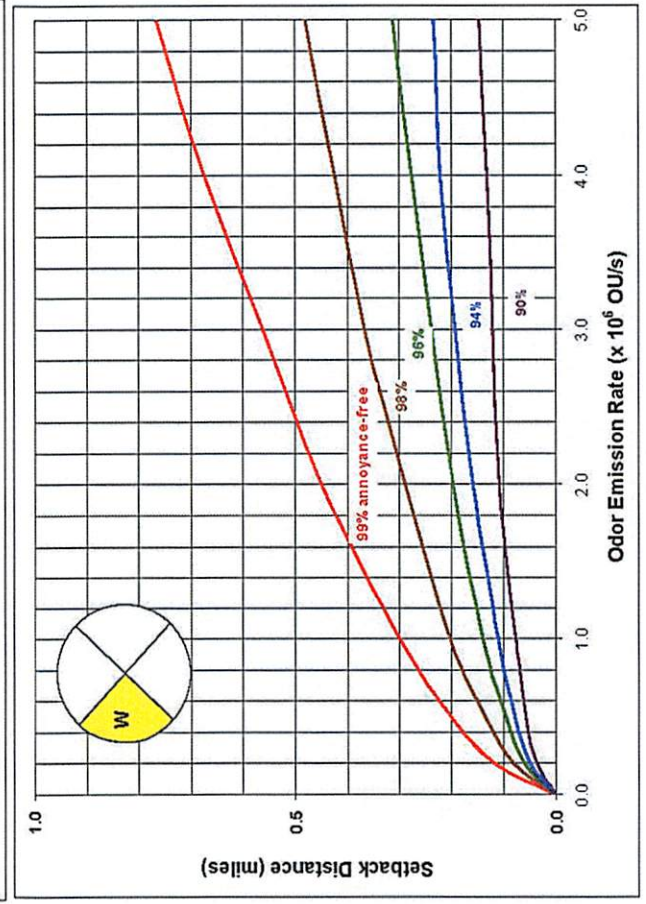
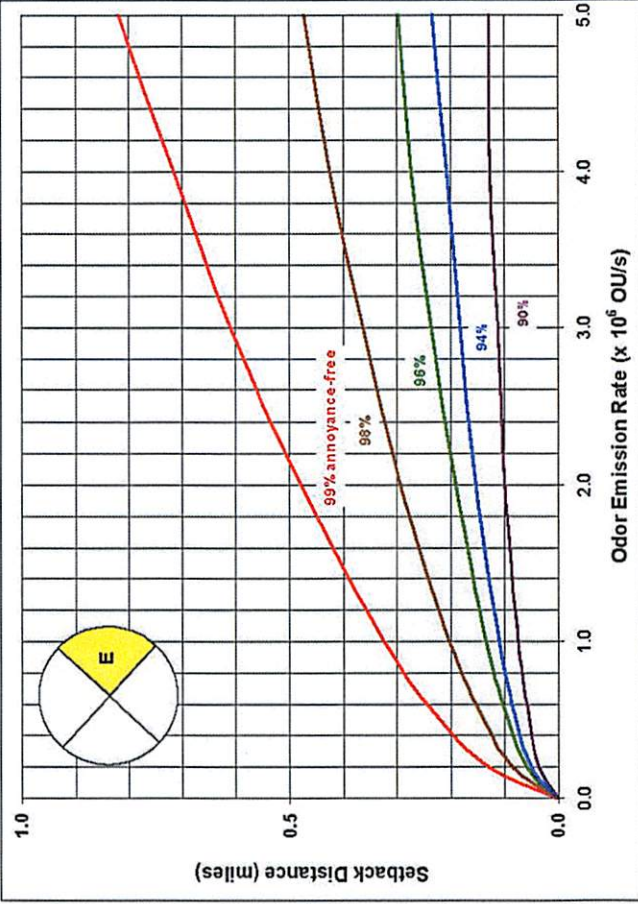
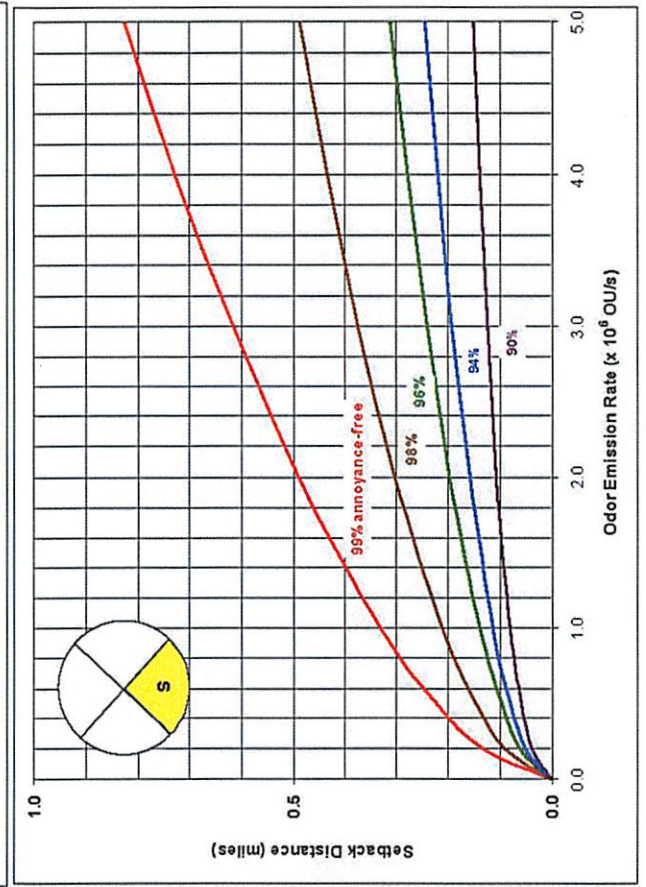
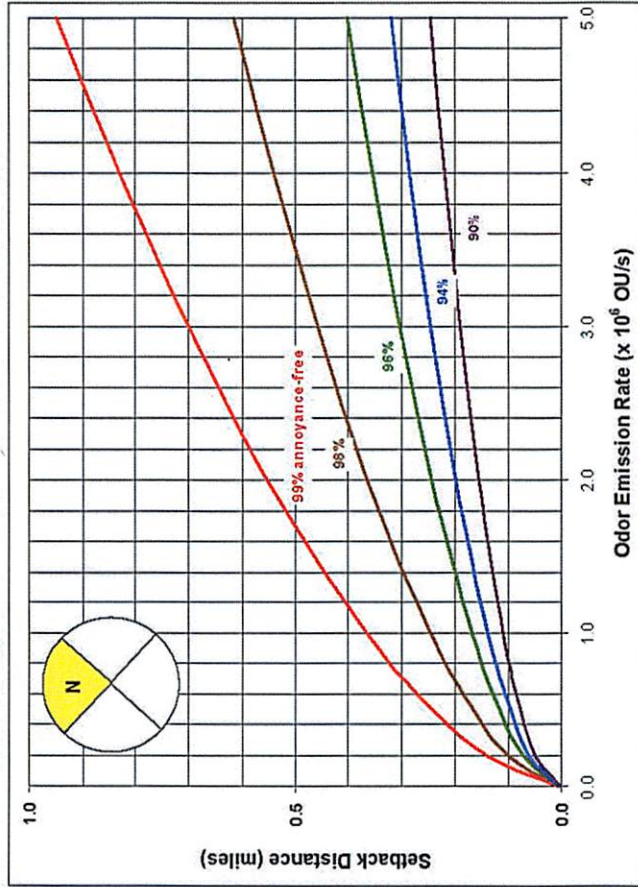
TABLE 4. TERRAIN ADJUSTMENT FACTORS

TYPE OF AREA	DESCRIPTION OF TOPOGRAPHY BETWEEN SOURCE AND RECEPTORS	TERRAIN FACTOR
FLAT TERRAIN	DEFAULT SCENERIO. MINIMAL CHANGE IN TOPOGRAPHY EXISTS. USE WHENEVER THE SITUATION DOES NOT FIT INTO ANOTHER LISTED CATEGORY OR THE LOCAL TOPOGRAPHY IS NOT KNOWN	1
UNCONFINED, LOW-LYING AREA	RECEPTORS ARE LOCATED DOWN-SLOPE OF THE SOURC (BELOW 2% GRADE LINE FROM SITE) WITHOUTH TOPOGRAPHY THAT WOULD CONFINED ODORS IN THE AREA.	1.2
CONFINED AIR DRAINAGE ZONE	RECEPTORS ARE SITUATED DOWN-SLOPE 0- BLEOW THE 2% FALLING GRADE LINE FROM THE SOURCE - WITHIN A VALLEY HAVING CONFINING SIDEWALLS THAT WILL RESTRICT THE DISPERSION OF ODORS	1.2-2.0*
ROLLING TERRAIN	UNDULATING COUNTRY BETWEEN SOURCE AND RECEPTER	0.9
HIGH RELIEF OR INTERVENING TERRAIN	RECEPTOR IS AT A HIGHER ELEVATATION THAN THE SOURCE (GREATER THAN 10% UPSLOPE FROM SITE) OR SIGNIFICAN HILLS AND VALLEYS ARE PRESENT BETWEEN THE SITE AND RECEPTOR	0.7

* VALUE DEPENDS ON THE DEGREE OF CONFINEMENT PRESENTED: THE STEEPNESS OF THE VALLEY AND CONFINING WALLS, THE WIDTH OF THE VALLEY, AND THE CONTINUITY OF THE CONFINING FEATURES SHOULD BE CONSIDERED IN SELECTING AN APPROPRIATE VALUE.

CURVE TABLES

Panhandle Region - small to medium facilities:



Panhandle Region - medium to large facilities:

