Appendix “A”

TABLE 1 OF 7 – Tables for Minimum Distance Separation

Type of Livestock and Factors		
Beef Cattle	• open feedlot with barn • total confinement	0.8 0.7
Broilers	• chicken • turkey	0.6 0.7
Dairy Cattle	• free stall • tie stall • loose housing	0.7 0.65 0.8
Hens	• caged • floor housing • breeding flocks • pullets	0.9 0.8 0.7 0.7
Hogs	• feeder • dry sows	1.1 1.0
Horses		0.7
Mink		1.1
Rabbits		0.8
Roasters		0.7
Sheep		0.7
Veal Calves	• white	1.0

See Notes following Table 2.

Appendix "A"

TABLE 2 OF 7 – Tables for Minimum Distance Separation

Animal Units of Production	
Type of Livestock or Poultry	**Maximum Number on Farm for Complete Year**
1 dairy cow (plus calf)	1 animal unit
1 beef cow (plus calf)	1 animal unit
1 bull	1 animal unit
1 horse	1 animal unit
4 sheep (plus lambs)	1 animal unit
4 sows (plus litter to weaning)	1 animal unit
125 laying hens	1 animal unit
100 female mink (plus associated males & kits)	1 animal unit
40 female rabbits (plus associated males)	1 animal unit
	Maximum Number Marketed During Years
2 beef feeders (gain 180-500 kg.)	1 animal unit
4 beef feeders (gain 180-340 kg.)	1 animal unit
4 beef feeders (gain 340-500 kg.)	1 animal unit
15 hogs (gain 18-90 kg.)	1 animal unit
1000 broiler chickens or roasters (1.8-2.3 kg.)	1 animal unit
300 turkey broilers (5-5.5 kg.)	1 animal unit
150 heavy turkey hens (4.5-9 kg.)	1 animal unit
100 heavy turkey toms (13.5-14.5 kg.)	1 animal unit
40 veal calves (gain 9-136 kg.)	1 animal unit
1000 pullets	1 animal unit
NOTES:	
1. Dairy	A dairy farm usually has milking cows, dry cows, heifers and calves. E.g. a herd of 50 milking cows is usually considered 75 animal units.
2. Feeder Hogs	A feeder hog operation will market annually 2 to 3 times (average 2.5 times) the number of feeder hogs housed at one time.
3. Chicken Broilers	Usually 4 batches per year.
4. Turkey Broilers	Usually 3 batches per year.
5. Heavy Turkeys (confinement)	Usually 1 or 2 batches per year.
6. Veal Calves	Usually 4 batches per year.

Appendix “A”

TABLE 3 OF 7 – Tables for Minimum Distance Separation

Animal Units Factor B							
Animal Units	Animal Units Factor B	Animal Units	Animal Units Factor B	Animal Units	Animal Units Factor B	Animal Units	Animal Units Factor B
2 or less	.151	72	.950	320	1.455	1650	2.195
3	.238	74	.958	340	1.480	1700	2.345
4	.301	76	.965	360	1.505	1750	2.364
5	.349	78	.972	380	1.528	1800	2.383
6	.399	80	.979	400	1.551	1850	2.402
7	.423	82	.986	420	1.573	1900	2.420
8	.452	84	.993	440	1.594	1950	2.438
9	.477	86	1.000	460	1.614	2000	2.456
10	.500	88	1.006	480	1.634	2100	2.491
12	.540	90	1.012	500	1.653	2200	2.524
14	.573	92	1.019	520	1.672	2300	2.556
16	.602	94	1.025	540	1.690	2400	2.588
18	.628	96	1.031	560	1.707	2500	2.618
20	.651	98	1.038	580	1.724	2600	2.647
22	.671	100	1.044	600	1.741	2700	2.676
24	.690	105	1.058	620	1.758	2800	2.704
26	.707	110	1.072	640	1.774	2900	2.731
28	.724	115	1.086	660	1.789	3000	2.758
30	.739	120	1.099	680	1.805	3200	2.809
32	.754	125	1.112	700	1.820	3400	2.858
34	.767	130	1.125	730	1.842	3600	2.905
36	.779	135	1.137	760	1.863	3800	2.951
38	.792	140	1.149	800	1.890	4000	2.994
40	.803	150	1.172	850	1.924	4200	3.036
42	.815	160	1.194	900	1.955	4400	3.077
44	.825	170	1.214	950	1.986	4600	3.116
46	.836	180	1.234	1000	2.015	4800	3.154
48	.846	190	1.254	1050	2.043	5000	3.191
50	.856	200	1.272	1100	2.071	5500	3.279
52	.866	210	1.290	1150	2.097	6000	3.362
54	.875	220	1.307	1200	2.123	6500	3.440
56	.884	230	1.324	1250	2.148	7000	3.513
58	.893	240	1.340	1300	2.172	7500	3.583
60	.902	250	1.356	1350	2.195	8000	3.650
62	.910	260	1.371	1400	2.218	8500	3.714
64	.919	270	1.386	1450	2.241	9000	3.775
66	.927	280	1.401	1500	2.262	9500	3.833
68	.935	290	1.415	1550	2.284	10000	3.890
70	.943	300	1.428	1600	2.304		

Appendix “A”

TABLE 4 OF 7 – Tables for Minimum Distance Separation

Operations Increase Factor C

Percent Increase	Factor C	Percent Increase	Factor C	Percent Increase	Factor C	Percent Increase	Factor C
0	.55	48.0	.70	111.0	.85	232	1.00
3.1	.56	51.5	.71	116.4	.86	246	1.01
6.1	.57	55.0	.72	122.1	.87	260	1.02
9.2	.58	58.7	.73	128.0	.88	276	1.03
12.3	.59	62.4	.74	134.1	.89	294	1.04
13.4	.60	66.2	.75	140.6	.90	314	1.05
18.5	.61	70.1	.76	147.5	.91	336	1.06
21.6	.62	74.1	.77	154.7	.92	361	1.07
24.8	.63	78.3	.78	162.3	.93	390	1.08
28.0	.64	82.5	.79	170.3	.94	423	1.09
31.2	.65	86.9	.80	179.0	.95	461	1.10
34.5	.66	91.4	.81	188.1	.96	506	1.11
37.8	.67	96.0	.82	197.9	.97	560	1.12
41.1	.67	100.8	.83	208.4	.98	628	1.13
44.5	.69	105.8	.84	220	.99	700	1.14

Over 700% increase……1.14

New operation……1.14

NOTES to Table 4

Note 1 - where there are no livestock or livestock buildings on the farm now, but would be after construction, use factor for “new” livestock enterprise, 1.14.

Note 2 - where the barn is being remodeled or rebuilt (such as after a fire) representing substantial capital investment, but with increase in A.U. and no change in kind of livestock, use 0.70.

Note 3 - where the barn is being remodeled or rebuilt (such a as after a fire) representing substantial capital investment, and with increase in A.U. , and with or without change in kind of livestock, increase the factor from Table 4 by 0.10, but in no case enter less than 0.70.

Note 4 - whether the additional housing is annexed to or separate from the existing housing, in either case enter the factor for increase from Table 4.

Appendix “A”

TABLE 5 OF 7 – Tables for Minimum Distance Separation

Type of Manure System and Factor D		
Type of Manure System	**Examples**	**Factor D**
1. Wet and anaerobic within the barn, (stored wet in the barn more than 14 days).	1. Total Confinement barns for cattle or hogs on slats. 2. Caged laying barn with wet droppings stored under the cages.	0.82
2. Wet or semi-solid, removed from the barn frequently (stored in the barn 14 days or less).	1. Free-stall dairy barn, alleys scraped frequently. 2. Piggereies with deep, narrow gutter system. 3. Caged laying barn with set droppings, mechanical scraper.	0.78
3. Semi-solid, using bedding or air-drying of the manure.	1. Cattle and pigs, partially bedded. 2. Beef cattle and pigs bedded and high density housing. 3. Caged laying barns with air-dried droppings stored under the cages. 4. Mink.	0.75
4. Solid or dry-bedded manure system within the barn.	1. Poultry on dry bedding. 2. Cattle or sows, heavily bedded, housed loose in low density, or stabled. 3. Horse and sheep barns.	0.70

Appendix “A”

TABLE 6 OF 7 – Tables for Minimum Distance Separation

Encroachment Factor E for Specific Uses Adjacent to Livestock Buildings in an Agricultural Zone	
Condition prevailing at time of application. Applicant requests:	Encroachment Factor E
1. Permit to build dwelling on lot already severed	.8
2. Consent to allow severance of lot on which a dwelling will be erected	.8
3. Permit to build new dwelling on rural parcel of land (over 0.8 hectares).	.75
4. Permit to build dwelling on adjacent farm (no severance involved).	.7
5. Permit to replace and relocate dwelling on rural parcel of land (over 0.8 hectares).	.6
6. Rezoning of land from agricultural to recreational, institutional or residential for orderly enlargement of an urban area.	.75
7. Rezoning of land in pockets such as for estate residential.	1.5

Appendix “A”

TABLE 7 OF 7 – Tables for Minimum Distance Separation

Type of Manure Storage	**Factor M**
Open Pile	.9F* + .06
Covered Concrete Tank	.6F* + .2
Anaerobic, Open Concrete Tank or Silo	.7F* + .3
Above grade or partially above grade storage with concrete or clay side walls and concrete floor – for semi solid manure	.8F* + .25
Anaerobic, open earth sided pit, pond or lagoon	.5F* + 1

FOR NEW MANURE STORAGE

* when calculating the acceptable distance, use MDS formula 2.

Valves of “C” in the formula F = ABCD should never be less than following minimums

- open concrete tank, silo, or pile……0.8
- covered concrete tank……..0.6
- open earth sided pit, pond or lagoon……..1.0

—— To determine the minimum separation distance between livestock operations and non-agricultural uses (Table 6) establishing or expanding in close proximity to existing livestock buildings

APPLICATION - As a guideline for land use planning
1. To evaluate severance applications
2. To evaluate building permit applications
3. To evaluate plans of subdivision

PURPOSE - 1. To reduce fragmentation and attrition of land as an agricultural resource and to enhance its future development for agricultural purposes.

2. To reduce the potential for environmental conflicts between livestock operations and incompatible neighbouring land uses-

METHOD - Involves assessment of the livestock operation, the selection of factors from tables, the calculation of the minimum acceptable distance and evaluation.

II Assessment of Livestock Operation and Selection of Factors (complete only this section if calculations are to be made by central computer)

Type of livestock, housing capacity and calculation of animal units (Table 2)

Type of Livestock	Existing Housing Capacity Number Per Year	Animal Units
	Total Animal Units	

Selection of Factors

1. Calculate animal units factor 'B' - Table 3 using the greater of:

(a) existing housing capacity ..... Animal Units

OR

(b) basic quota of 2 times the number of tillable acres under single ownership at this site ..... Animal Units (up to a maximum of 150 animal units)

Factor B

2. Factor for type of livestock 'A' - Table 1 If there are more than one type of livestock use average of factors weighted according to number of animal units in each category ..... Factor A

3. Factor 'D' for type of manure system - Table 5 ..... Factor D

4. Encroachment factor 'E' for siting of land uses, or change in land use designation, or zoning (Table 6) ..... Factor E

III Calculation of Minimum Acceptable Distance (Complete this section only if central computer is not to be used for calculations)

1. Distance coef. H = A x B x D x E = ____ x ____ x ____ x ____ = Coef. H.

2. Minimum acceptable distance to nearest part of the livestock operation (e.g. building, silo, manure storage tank, concrete pad or stacker, but not including milkhouse, implement shed or dry food storage buildings)

= H x 300 m. = ____ x 300 m. = _____ ft.

3. Actual distance ..... _____ ft.

Evaluation: Application meets / does not meet above criteria

Application reference _____ Date of Evaluation _____

By

or remodelled livestock facilities within agricultural areas.

APPLICATION - In concert with MDS FORMULA ONE

1. As a guideline for rural land use planning.
2. As a guideline for certification of proposed changes to livestock facilities under the Ontario Certificate of Compliance program.
3. As a method of control of the siting of new, enlarged or remodelled livestock housing and manure storage facilities when desired by the municipality by incorporation into by-laws as authorized by Section 35 of the Ontario Planning Act.

PURPOSE - 1. To permit the orderly development of livestock operations within agricultural areas.

2. To reduce the potential for environmental conflicts between livestock operations and incompatible neighbouring land uses.

METHOD - Involves assessment of the proposed change in the livestock operation, the selection of factors from tables, the performance of test one (calculation of acceptable distances and comparison with actual distances) and, if required, performance of test two (calculation of performance index and total performance, and comparison to minimum accepted values), and performance of test three (siting of manure storage).

ASSESSMENT OF THE PROPOSED CHANGE IN THE LIVESTOCK PROGRAM

1. Types of livestock, housing capacity and calculation of animal units (Table 2)

Type of Livestock	Existing Housing Capacity Number/Yr	Animal Units Table 2	Additional Capacity Number/Yr.	Animal Units Table 2	Total Housing Capacity Number/Year	Animal Units Table 2
Total Animal Units						

2. Calculation of percentage increase in animal units

[ ] X 100 = [ ] % increase

[ ]

Selection of Factors

1. Factor for livestock to be added (Table 1) ..... [ ] Factor A
2. Factor for total number of animal units (Table 3) ..... [ ] Factor B
3. Factor for new operations, or rebuilding, remodelling or enlarging (Table 4) ..... [ ] Factor C
4. Factor for manure system (Table 5) ..... [ ] Factor D

Calculation of Distance Coefficient F for Livestock Housing

Distance Coef. F = A X B X C X D = [ ] X [ ] X [ ] X [ ] = [ ] Coef.F

Calculation of Modified Coefficient Fs

When C (above) is equal to or greater than the following minimum values of Cs, then Fs = F.

	Min. Value of Cs
- for a covered concrete tank	0.6
- for an open pile or open tank or silo	0.8
- for an earth-sided pit or pond	1.0

Otherwise, calculate Fs using the above values of Cs in the following equation

Fs = A X B X Cs X D = [ ] X [ ] X [ ] X [ ] = [ ] Coef. Fs

Manure Storage Factor M

Select appropriate Factor M from table 7 [ ] Factor M

Distance Coefficient S for Manure Storage

Select Coef. S from table 7 OR [ ]

TEST ONE

Calculation of acceptable distance (Col.C) between the subject structure and neighbouring uses, and comparison with actual distances (Col.D). Multiply basic distances (Col.A) times distance coefficient F. (Col.B)

TEST TWO

(To be used when application fails to meet all criteria in Test One).

1. To be acceptable, application must meet both of the following (a) each value in Col.E must equal or exceed the value in Col.F, (b) the totalvalues in Col.E must equal or exceed 7.40 except as provided in the footnotes.*
2. Enter a figure not greater than 1.50 in Col.E

TEST THREE

(Siting of manure storage. Multiply the basic distances (Col.A) by the storage distance coefficient S (Col.C) and compare with actual distances (Col.H)

Neighbouring Land Use	Column A Basic Distance	Column B Distance Coef. F	Column C Acceptable Distance	Column D Actual Distance	Column E Col. D / Col. C	Column F Minimum Index	Column G Acceptable Distance = Factor M x Basic Distance	Column H Actual Distance
1. Area zoned or designated residential *	610m.x		=			0.90		
2. Area zoned or designated commercial **	305m.x		=		insert lowest value of items 2, 3, 4, 5 & 6			
3. Area zoned or designated industrial **	305m.x		=					
4. Area zoned or designated recreational **	610m.x		=					
5. Area zoned or designated institutional **	610m.x		=					
Non-forming	305m.x		=			0.90		
Nearest ghbour's residence	305m.x		=			0.90 **		
8. Next nearest neighbour's residence	305m.x		=			0.90 **		
9. Middle of the road allowance	91m.x		=			0.90		
10. Nearest lot line	61m.x		=			0.70		
11. Intersection of road allowance and lot line	182m.x		=			0.60		
					TOTAL *			

NOTES

* Applies to subdivisions, hamlets, towns and cities but does not apply to lots created by consent, unless such lots are located in a hamlet, village, town or city.

** Items 2, 3, 4 and 5 apply to areas zoned commercial, industrial, recreational and institutional or designated for such use in the official plan.

*Total values in Col.E shall equal or exceed 7.40 except where the below mentioned provision is invoked, the values in Column E shall equal or exceed 7.20 or 7.00 as applicable.

**If the neighbour's dwelling is an accessory to a similar livestock facility, the indicated value in Column E shall equal or exceed 0.70