

CARBON MONOXIDE COST ANALYSIS MATRIX 2009

This cost analysis matrix uses actual 2007 cost and animal data from a municipal animal control agency in North Carolina. Although the actual agency reported best practices use of euthanasia by injection (EBI) for animals younger than 4 months of age (25% of total animals euthanized), this cost analysis assumes 100% chamber use in order to more accurately reflect the industry as a whole and to provide a more useful cost comparison to EBI. Although frequent, 100% chamber use is NOT acceptable practice.

Industry standards demand the use of EBI for animals less than 4 months of age and for animals suffering from respiratory conditions, generally poor health or severe injury.

Industry standards recommend administering 0.5 mg / pound acepromazine maleate (tranquilizer) to adult dogs 20 minutes prior to placing them in the chamber to reduce vocalization/agitation. The dose is typically 25 mg for an average 50-pound dog.

- Total number of dogs euthanized: 2430
- Total number of cats euthanized: 2997
- Total number of dogs and cats euthanized: 5427
- Average number of dogs and cats euthanized per day: 15 (365 days)
- Number of employees (operators): 2 (alternate costs for 1 operator are included)
- For purposes of this cost analysis matrix, an average dog is 50 pounds.

CARBON MONOXIDE EQUIPMENT COST		
1	CO chamber: \$10,500	Cutting Edge Fabrication, estimated usable life: 10 years
2	CO sensor: \$300	Unknown brand, estimated usable life: 10 years
3	Chamber lifetime routine maintenance: \$5,000	Estimated cost to maintain seals, gaskets and hardware over 10 years = \$500 per year

January 2009; Doug Fakkema, Consultant to Animal Care & Control – dkfakkema@aol.com

4	Annual depreciation: \$1,080	Chamber: \$10,500 + sensor: \$300 = \$10,800 / 10 = \$1,080
5	Annual depreciation + maintenance: \$1,580	Equipment depreciation: \$1,080 + maintenance: \$500 = \$1,580
6	CO equipment cost per animal: \$0.29	\$1,580 (annual depreciation/maintenance) / 5427 (total animals euthanized per year) = \$0.29
	TRANQUILIZER COST	
7	Acepromazine tranquilizer per average dog: \$1.00	Average dog: 50 pounds: 2.5 ml at \$0.40 per ml = \$1.00
8	Syringe / needle cost per dog: \$0.013	Syringe (reused) cost: \$0.003 + needle cost: \$0.01 = \$0.013
9	Tranquilizer cost per 50 pound dog: \$1.013	\$1.00 + \$0.013 = \$1.013
10	Number of dogs tranquilized (estimate): 1701	1701: number of estimated adult dogs euthanized by CO chamber (70% of total dogs)
11	Total annual cost of tranquilizer: \$1,723.11	1701 dogs X cost per dog: \$1.013 = \$1,723.11
12	Tranquilizer cost per animal: \$0.32	\$1,723.11 / 5427 (total animals euthanized) = \$0.317
CO LABOR COST		
13	Number of employees to euthanize: 2	<i>Note: actual municipal animal control agency uses 2 operators (employees) to euthanize by carbon monoxide</i>
14	Load time: 10 minutes	Includes transport to chamber
15	Run time: 35 minutes	Employees do paperwork and watch chamber
16	Unload time: 5 minutes	Remove carcasses, clean chamber for next cycle
17	Total cycle time: 50 min	Load: 10 + run: 35 + unload: 5 = 50 minutes

18	Number of dogs or cats per cycle: 6	Dogs and cats are not mixed in a cycle
19	Number of cycles per day: 2.5	Average number of animals euthanized per day: 15 / number of animals per cycle: 6 = 2.5
20	Total time per day: 125 minutes	Load + run + unload (cycle time) = 50 minutes X 2.5 cycles = 125 minutes (2.08 hours)
21	Labor cost per minute per person: \$0.226	Hourly wage: \$10.44 + 30% fringe: \$3.13 = \$13.57 / 60 minutes = \$0.226
22	Total labor cost per minute (2 operators): \$0.452	\$0.226 X 2 operators = \$0.452
23	Total labor cost per cycle: \$22.60	\$0.452 X 50 minutes = \$22.60
24	Labor cost per day: \$56.25	\$22.60 X 2.5 cycles = \$56.50
25	Labor cost per animal: \$3.77	\$56.50 / 15 animals = \$3.766
26	Alternate: labor cost per animal with 1 operator rather than 2: \$1.88	\$0.226 X 50 minutes = \$11.30 X 2.5 cycles = \$28.25 / 15 animals = \$1.88 (note: will likely take longer to load and unload but is not reflected in this matrix)
	CO SUPPLY COST	
27	CO gas cylinder: \$219.00	Includes cylinder rental plus gas
28	Annual number of cylinders: 15	Total number of cylinders used in 2007
29	Total gas cost:	\$219 per cylinder X 15 cylinders = \$3285
30	Gas cost per day:	Annual cost / 365 days = \$9.00

31	Supply cost per animal: \$0.60	$\$9.00 / 15 \text{ animals} = \0.60
CARBON MONOXIDE TOTAL COST		
32	CO cost per animal: \$4.98	Equipment cost per animal: \$0.29 + tranquilizer cost: \$0.32 + labor cost per animal: \$3.77 + supply cost per animal: \$0.60 = \$4.98
33	Alternate CO cost (1 operator): \$3.09	Equipment cost per animal: \$0.29 + tranquilizer cost: \$0.32 + labor cost per animal: \$1.88 + supply cost per animal: \$0.60 = \$3.09

CARBON MONOXIDE Vs EBI

34	EBI cost per animal	\$2.29
35	CO cost per animal (2 operators)	\$4.98
36	CO cost per animal (2 operators) <i>without tranquilizer</i>	\$4.66
36	CO cost per animal (1 operator)	\$3.09
37	CO cost per animal (1 operator) <i>without tranquilizer</i>	\$2.77