

Standards based on ARM 36.12.115, ARM 36.12.101, and DNRC Water Calculation Guide.

Deviations from standards require information from appropriator supporting justification of the requested amount.

Purpose	Use Standard (per year)	0.28 AF	0.5 AF	1 AF	5 AF	10 AF
Domestic (DEQ Standard)	0.28 AF/ household	1 household	1 household	3 households	17 households	35 households
Domestic (DNRC Standard)	1 AF/ household	N/A	N/A	1 household	5 households	10 households
Lawn & garden irrigation	2.5 AF/ acre	0.11 acres	0.2 acres	0.4 acres	2 acres	4 acres
Beef Cow* (1 AU)	0.017 AF/ cow	16 beef cows	29 beef cows	58 beef cows	294 beef cows	588 beef cows
Dairy Cow* (1.5 AU)	0.0255 AF/ cow	10 dairy cows	19 dairy cows	39 dairy cows	196 dairy cows	392 dairy cows
Horse* (1.5 AU)	0.0255 AF/ horse	10 horses	19 horses	39 horses	196 horses	392 horses
Sheep* (0.20 AU)	0.0034 AF/ sheep	80 sheep	147 sheep	290 sheep	1,470 sheep	2,940 sheep
Chickens* (0.003 AU)	0.017 AF/ 300 chickens	4,800 chickens	8,823 chickens	17,400 chickens	88,200 chickens	176,400 chickens
Pigs* (0.33 AU)	0.0057 AF/ pig	48 pigs	88 pigs	174 pigs	882 pigs	1,764 pigs
Irrigation near Billings [^] (Climatic Area I, sprinkler)	3.04 AF/ acre	0.09 acres	0.16 acres	0.33 acres	1.64 acres	3.28 acres
Irrigation near Glasow [^] (Climatic Area II, sprinkler)	2.69 AF/ acre	0.10 acres	0.18 acres	0.37 acres	1.86 acres	3.72 acres
Irrigation near Kalispell [^] (Climatic Area III, sprinkler)	2.41 AF/ acre	0.12 acres	0.20 acres	0.42 acres	2.08 acres	4.15 acres
Irrigation near Shelby [^] (Climatic Area IV, sprinkler)	2.07 AF/ acre	0.14 acres	0.24 acres	0.48 acres	2.42 acres	4.83 acres
Irrigation near Anaconda [^] (Climatic Area V, sprinkler)	1.48 AF/ acre	0.19 acres	0.33 acres	0.68 acres	3.38 acres	6.76 acres
Department Store (year-round use)	400 GPD/ toilet room	0 toilet rooms	0 toilet rooms	2 toilet rooms	11 toilet rooms	22 toilet rooms
Campground (flush toilets, year-round use)	25 GPD/ person	9 visitors/ day	17 visitors/ day	35 visitors/ day	178 visitors/ day	357 visitors/ day
School (200 days/ year)	25 GPD/ person	18 people/ day	32 people/ day	65 people/ day	325 people/ day	651 people/ day

* Quantities for livestock based on Animal Unit (AU) use rates defined in ARM 36.12.101(3); land carrying capacity not considered in this exercise.

[^] Based on the highest consumption range for 70% efficient sprinkler irrigation systems, as identified in ARM 36.12.115(2)(e). The irrigation climatic areas are identified in the 1986 Irrigation Climatic Areas of Montana map. Climatic area I is high consumptive use, climatic area II is moderately high consumptive use, climatic area III is moderate consumptive use, climatic area IV is moderately low consumptive use, and climatic area V is low consumptive use.

Volume	Purpose Examples: Volume Allocation				
	<i>Domestic and Lawn & Garden Irrigation (considering DEQ standard for domestic use)</i>	<i>Irrigation (CA III)</i>	<i>Cattle</i>	<i>Livestock Mix</i>	<i>Commercial/ Industrial*</i>
0.28 AF	1 household (HH), 0 acres lawn & garden	0.12 acres	16 beef cows	14 sheep, 9 dairy cows, 50 chickens	Campground (with flush toilets) open 200 days/year, 45 visitors per day
				4 horses, 10 beef cows, 1 pig	
0.5 AF	1 HH, 0.08 acres lawn & garden	0.20 acres	29 beef cows	7 horses, 9 dairy cows, 6 pigs, 15 sheep	Restaurant open year-round, serving 44 people/day
1 AF	1 HH, 0.29 acres lawn & garden	0.42 acres	58 beef cows	40 sheep, 33 dairy cows, 3 pigs, 90 chickens	Department Store with 2 toilet rooms, open year-round
	2 HHs, 0.09 acres lawn & garden per HH (0.18 acres total)			30 pigs, 10 horses, 10 dairy cows, 18 beef cows, 240 chickens	
	3 HHs, 0.021 acres lawn & garden per HH (0.064 acres total)				
5 AF	1 HH, 1.88 acres lawn & garden	2.08 acres	294 beef cows	200 beef cows, 60 horses, 12 pigs	School open 200 days/year, serving 325 people/day
	3 HHs, 0.51 acres lawn & garden per HH (1.5 acres total)				
	5 HHs, 0.28 acres lawn & garden per HH (1.44 acres total)				
	8 HHs, 0.13 acres lawn & garden per HH (1.10 acres total)				
	12 HHs, 0.05 acres lawn & garden per HH (0.65 acres total)				
	15 HHs, 0.02 acres lawn & garden per HH (0.32 acres total)				
10 AF	1 HH, 3.8 acres lawn & garden	4.15 acres	588 beef cows	350 dairy cows, 315 sheep	50 days X 6.5 miles of road spraying
	3 HHs, 1.22 acres lawn & garden per HH (3.66 acres total)				
	5 HHs, 0.68 acres lawn & garden per HH (3.44 acres total)				
	8 HHs, 0.38 acres lawn & garden per HH (3.1 acres total)				
	10 HHs, 0.28 acres lawn & garden per HH (2.88 acres total)				
	15 HHs, 0.15 acres lawn & garden per HH (2.32 acres total)				
	20 HHs, 0.08 acres lawn & garden per HH (1.76 acres total)				
	30 HHs, 0.02 acres lawn & garden per HH (0.64 acres total)				

**Quantification of industrial purpose example based on hypothetical water use. No DNRC standard exists for industrial purposes. Industrial water use quantification must be presented and justified by appropriator.*