

SUNTAF Appendix 5

Water monitoring framework - (B) Water and cost saving

Adapted from Spenceley, A., Relly, P., Keyser, H., Warmeant, P., McKenzie, M., Mataboge, A., Norton, P., Mahlangu, S., and Seif, J. (2002) Responsible Tourism Manual for South Africa, Department for Environmental Affairs and Tourism, July 2002

NOTE: Amounts here are presented in Rands currency - adapt the currency as relevant to the country in which the enterprise is situated, or utilise \$, £ or Euros where international comparisons are required.

KEY

	Recorded water information (from water bills, meters, or flow rates)
	Enterprise information (no. beds, occupancies, no. taps etc)
	Benchmarks of volumes (calculated figures)
	Calculated costs and cost savings

WATER AND Rands SAVINGS

Flow rate readings and predicted savings																	
Source of use	Location	Number of fittings I	Flow Rate / Unit volume J	Frequency of use (estimate) K	Annual No. bed nights L	Predicted annual occupancy M	Estimated consumption per year (at predicted occupancy) Benchmark 10	Estimated annual consumption per bed Benchmark 11	Estimated consumption per occupied bednight Benchmark 12	Cost of New unit N	Total new units cost O	Cost Water consumption (per kilolitre) P	Cost water consumption per year Q	Financial saving per year R	Pay-back time for investment (days) S		
SHOWERS										(obtain from supplier)	= N x I	(from bill, or from calculated pumping costs)	=B'mk 10 x Q	=Q(old) - Q(new)	= O / (R / 365 days)		
Existing showers	Honey Badger Lodge	12	30 litres/minute	7 mins/guest per day	=24 beds x 365 days = 8760	72%	= J x K x L x M =30 x 7 x 8760 x 0.72 = 1324 kilolitres	= B'mk 10 / 24 beds = 1324 / 24 = 55.2 kilolitres	= B'mk 10 / (L x M) = 1324 / (8760 x 0.72) = 210 litres	R 60.00			R 7,149.60				
New showers flow control devices - flow restrictors	Honey Badger Lodge	12	10 litres/minute	7 mins/guest per day			= J x K x L x M =10 x 7 x 8760 x 0.72 = 441 kilolitres	= B'mk 10 / 24 beds = 441 / 24 = 18.4 kilolitres	= B'mk 10 / (L x M) = 441 / (8760 x 0.72) = 70 litres	R 80.00	R 960.00	R 5.40	R 2,381.40	R 4,768.20	73		
Difference			20 litres/min				883 kilolitres less p/a (64% less)	36.8 kilolitres less (66% less)	140 litres less (66% less)						around 2.5 months		
TAPS (guest rooms)																	
Existing taps	Honey Badger Lodge	12	20 litres/minute	5 mins/guest per day	=24 beds x 365 days = 8760	72%	= J x K x L x M =20 x 5 x 8760 x 0.72 = 631 kilolitres	= B'mk 10 / 24 beds = 631 / 24 = 26.3 kilolitres	= B'mk 10 / (L x M) = 631 / (8760 x 0.72) = 100 litres				R 3,407.40				
New tap flow control devices	Honey Badger Lodge	12	5 litres/minute	5 mins/guest per day			= J x K x L x M = 5 x 5 x 8760 x 0.72 = 158 kilolitres	= B'mk 10 / 24 beds = 158 / 24 = 6.6 kilolitres	= B'mk 10 / (L x M) = 158 / (8760 x 0.72) = 25 litres	R 180.00	R 2,160.00	R 5.40	R 853.20	R 2,554.20	309		
Difference			15 litres/min				473 kilolitres less p/a (75% less)	19.7 kilolitres less (75% less)	75 litres less (75% less)						around 10 months		
TOILET CISTERNS																	
Existing cisterns	Honey Badger Lodge	12	12 litres/flush	8 flushes/guest per day	=24 beds x 365 days = 8760	72%	= J x K x L x M = 12 x 8 x 8760 x 0.72 = 605 kilolitres	= B'mk 10 / 24 beds = 605 / 24 = 14.5 kilolitres	= B'mk 10 / (L x M) = 605 / (8760 x 0.72) = 96 litres				R 3,267.00				
New smaller cisterns	Honey Badger Lodge	12	6 litres/flush	8 flushes/guest per day			= J x K x L x M = 6 x 8 x 8760 x 0.72 = 302 kilolitres	= B'mk 10 / 24 beds = 189 / 24 = 7.3 kilolitres	= B'mk 10 / (L x M) = 189 / (8760 x 0.72) = 48 litres	R 250.00	R 3,000.00	R 5.40	R 1,630.80	R 1,636.20	669		
Difference			6 litres/flush				303 kilolitres less p/a (50% less)	7.2 kilolitres less (50% less)	48 litres less (50% less)						just under 2 years		
LAWN SPRINKLER																	
Existing sprinkler	Honey Badger Lodge	2	20 litres/minute	60 mins/day	=24 beds x 365 days = 8760	72%	= J x K x No. Days =20 x 60 x 160 days = 192 kilolitres	= B'mk 10 / 24 beds = 192 / 24 = 8 kilolitres	= B'mk 10 / (L x M) = 192 / (8760 x 0.72) = 30 litres				R 1,036.80				
New flow restrictor fitted	Honey Badger Lodge	2	4 litres/minute	60 mins/day			= J x K x No. Days = 4 x 60 x 160 days = 38.4 kilolitres	= B'mk 10 / 24 beds = 38.4 / 24 = 1.6 kilolitres	= B'mk 10 / (L x M) = 38.4 / (8760 x 0.72) = 6 litres	R 35.00	R 70.00	R 5.40	R 207.36	R 829.44	31		
Difference			16 litres/min				153.6 kilolitres less p/a (80% less)	16.4 kilolitres less (80% less)	24 litres less (80% less)						around 1 month		

This table can be used for other sources such as hose pipes, washing machines, dishwashers and baths.

* Remember to take care when using litres and kilolitres. 1 kilolitre = 1000 litres