

DRINKING WATER REQUIREMENTS FOR ANANTAPUR DISTRICT FOR THE PROJECTED POPULATION UPTO 2030

I. ALTERNATE 1.

I	a.	Population of towns & cities as per 2001 census	919563
	b.	Annual growth	2.3%
	c.	Projected population by 2030 (i.e, 2030-2001 = 29 years) = $919563 (1+2.3/100)^{29}$ = 919563×1.023^{29} = $919563 \times 1.93372 = 17.782$ Lakhs	17.782 Lakhs
II.	a.	Population villages as per 2001 census (=3640478 – 919563)	2720916
	b.	Annual growth	2%
	c.	Projected population by 2030 (29 years) = $2720916 (1 + 2/100)^{29} = 4831803$	48.32 Lakhs
	d.	Live stock population as per 2007 census	5957358
	e.	Poultry as per 2007 census	1826856
	Total Livestock and Poultry as per 2007 census		

SCALES OF REQUIREMENTS

- a) For Rural Population = 70 litres per head per day
- b) For Urban population = 200 Litres per head per day
- c) For Livestock & Poultry = 50 Litres per day

REQUIREMENT OF WATER PER DAY

S.No.	Details	Population (in lakhs)	Scale	Qty in Litres per day
1	For Urban	17.782	200 Lt	355.64×10^6
2	For Rural	48.320	70 Lt	338.24×10^6
3	For Livestock & Poultry	77.842	50 Lt	389.21×10^6
Total Qty Per day		143.944 Lakhs (or) 14.4×10^6		1083.09×10^6

For 365 days $\rightarrow 1083.09 \times 10^6 \times 356$
= 395327.85×10^6 Litres

For 1 Cubic feet = 28.316 Litres

Requirement per year in Cubic feet = 13961.29×10^6 Cubic feet

(OR) 13.961 Thousand Million Cubic Feet (TMC)

II. ALTERNATE CALCULATIONS

1. Projected population upto 2030 = 14.4×10^6 (OR) 14.4 MTC
2. Requirement @ 165 Litres per day per year in cubic feet

$$= \frac{14.4 \times 165 \times 10^6 \times 365}{28.316}$$
 = 30627 x 10⁶ cubic feet (OR) 30.63 TMC

III. ALTERNATE CALCULATIONS FOR TOTAL POPULATION OF 42 LAKHS

1. Requirement of water @ 165 Liters per day for 365 days

$$= 4.2 \times 10^6 \times 165 \times 365$$

$$= 252945 \times 10^6 \text{ Litres}$$
 In cubic feet = 8933 x 10⁶ cubic feet (OR) 8.933 TMC

Add 30% extra for evaporation and transmission and other frictional losses
 = 8.933 + 2.670
 = 11.613 TMC

1. As per alternate I - 13.961 TMCft
2. As per alternate II - 30.630 TMCft (Need not be taken into _____)
3. As per alternate III - 11.613 TMCft

a.	For the projected population upto 2030 one can consider alternate I calculation which appears to be realistic	13.961 TMC
b.	Add for losses @ 20 %	2.792 TMC
Total		16.753 TMC

B. REQUIREMENT OF WATER FOR FEEDING TANKS

Sl. No.	BASIN / SUB BASIN	Catchment in Sq.Km	No. of Tanks	No. of Villages	Ayacut approx. in TMC
1	Pennar Basin	9569	17	793	35150
2	Chitravathy sub basin	4946	11	608	29960
3	Vedavathy sub basin (Hagdri)	4030	06	133	8720
4	Papagni sub basin	590	02	160	4280
Grand Total		19135	36	1694	78110

Requirement of water per crop @ 5 acres per
 = 1 Million feet or For one TMCft 5000 Acrs
 = 78110 / 5
 = 15622 M.ft (OR) 15.622 TMCft