DESIGN OF WATER SUPPLY SCHEME FOR BGSBU RAJOURI

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Abstract: Jammu and Kashmir is home to several valleys such as the Kashmir Valley, Tawi Valley, Chenab Valley, Poonch Valley, Sind Valley and Lidder Valley. The main Kashmir valley is 100 km wide and 15,520.3 km2 (5,992.4 sq mi) in area. The Himalayas divide the Kashmir valley from Ladakh while the Pir Panjal range, which encloses the valley from the west and the south, separates it from the Great Plains of northern India. Along the north eastern flank of the Valley runs the main range of the Himalayas. This densely settled and beautiful valley has an average height of 1,850 metres above sea-level but the surrounding Pir range has an average elevation of 5,000 metres. Because of Jammu and Kashmir range of elevations, its biogeography is diverse. North western thorn scrub forests and Himalayan subtropical pine forests are found in the low elevations of the far southwest. These give way to a broad band of western Himalayan broadleaf forests running from northwest-southeast across the Kashmir Valley. Rising into the mountains, the broadleaf forests grade into western Himalayan sub alpine coniferous forests. Above the tree line are found north western Himalayan alpine shrub and meadows. Much of the north east of the state is covered by the Karakoram-West Tibetan Platform.

Division	Area km^2	Percentage Area
Kashmir	15,948	15.73%
Jammu	26,293	25.93%
Ladakh	59,146	58.33%

Table - 1 Areas of divisions of J and K

Rajouri is a town and a municipal council in Rajouri district Rajouri is about 130 kilometers from Jammu city on the Poonch Highway. Rajouri is known as the Vale of Lakes as there are many lakes around the city. Baba Ghulam Shah Badshah University is based in the town. The climate of Rajouri is somewhat cooler than the other areas of Duggardesh plains. Summers are short and pleasant while sometimes they may be irritating. The summer temperature generally does not exceed 41 degrees. Winters are cool and chilly characterized with rainfall due to western disturbances. Snowfall is scanty but may occur in cool months like that of December.

I. OBJECT OF THE WORK

The objective of a public protected water system is to supply safe and clear water conveniently and as economically as possible. The water supply projects formulated by the various state authorities and local bodies at present do not contain all the essential elements for the appraisal and when projects are assessed for their costs, benefit ratio and for institutional and other funding. This project mainly deals to propose waters supply scheme for above mentioned project of about the university including girls and boys hostel, faculty quarters.
Other work included finding out possible location of sources of water in area, water quantity estimates, population estimation, and mode of conveyance of water, water storage structures and finally water supply networks. It is important to look at operational objectives first, and use these to establish the objectives for the project phase, otherwise there is a risk that the water supply system will operate inefficiently even if the project phase was completed successfully.

The objectives of the water supply should contain the following:

- The provision of water for domestic consumption and personal hygiene in terms of the Water Services Authority's by-laws requires that a minimum of 25 litres per person per day be provided).
- The improvement of the quality of the existing supplies.
- The improvement of the availability of water to the community (both reliability and accessibility).
- Community involvement (acceptability).
- The improvement of public health.
- The improvement of the living standards of the community.

The development of local technical, financial and administrative skills

II. LITERATURE REVIEW

Water supply is the provision of water by public utilities, commercial organizations, community endeavors or by individuals, usually via a system of pumps and pipes. Irrigation is covered by pipes.
Water supply systems get water from a variety of locations after appropriate treatment, including ground water (aquifers), surface water (lakes and rivers), and the sea through desalination. The water treatment steps include, in most cases, purification, disinfection through chlorination and sometimes fluoridation. Treated water then either flows by gravity or is pumped to reservoirs, which can be elevated such as water towers or on the ground (for indicators related to the efficiency) of drinking water distribution. Once water is used, waste water is typically discharged in a sewer system and treated in a sewage treatment plant before being discharged into a river, lake or sea or reused for landscaping, irrigation or industrial use.

Forecasted Population of Polytechnic College

Year	Population	Increment	Incremental Increase
2009	190		
		100	
2010	290		60
		160	
2011	450		-60
		100	
2012	550		-25
		75	
2013	625		50
		125	
2014	750		25
		150	
2015	900		
		x = 118.33	y =10

$$P_n = P_0 + nx + n\left(\frac{n+1}{2}\right) y$$
$$P_{2045} = 900 + (30)(118.33) + (30)\left(\frac{30+1}{2}\right)(10)$$
$$P_{2045} = 910$$

6.13.4 Forecasted Population for Hostels

Year	Population	Increment	Incremental Increase
2008	329		
		108	
2009	437		51
		159	
2010	596		-39
		120	
2011	716		-16
		104	
2012	820		-4
		100	
2013	920		-15
		85	
2014	1005		5
		90	
2015	1095		
		x = 109.43	y = -3

$$P_n = P_0 + nx + n\left(\frac{n+1}{2}\right) y$$
$$P_{2045} = 1095 + (30)(109.43) + (30)\left(\frac{30+1}{2}\right)(-3)$$
$$P_{2045} = 2983$$

6.13.5 Forecasted Population for Residential Buildings

Year	Population	Increment	Incremental Increase
2007	50		
		60	
2008	110		10
		70	
2009	180		-20
		50	
2010	230		-10
		40	
2011	270		30
		70	
2012	340		-60
		10	
2013	350		-5
		5	
2014	355		0
		5	
2015	360		
		x = 38.75	y = -7.86

$$P_n = P_0 + nx + n\left(\frac{n+1}{2}\right) y$$
$$P_{2045} = 360 + (30)(38.75) + (30)\left(\frac{30+1}{2}\right)(-7.86)$$
$$P_{2045} = 2132$$

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