Mahee- Narmada water supply project for part of GirSomnath district based on Rajula (Kadiyali)- Veraval trunk lines

Pranchi Group
(formerly Khambha group)

TALUKA :Talala, Veraval&Sutrapada **DISTRICT : GirSomnath**

1.0 Preamble: -

The state of Gujarat is geographically located on latitude of 20 degree North & Longitude of 71 degree east. located on western side of India. The state is generally divided as (I) North Gujarat (II) South Gujarat (III) Central Gujarat and (IV) Saurashtra &Kutchh region (West & South west part of Gujarat).

Gujarat State has very few perineal rivers namely Narmada, Tapi and Mahi, which are following the South Gujarat Region. There is no perennial river in Saurashtra &Kutchh region. Mainly the sources of w3ater supply projects of Urban& rural area entirely depend on rain fed surface normal average rainfall the project area is generally facing water storage.

Moreover, due to peculiar geographical & geological condition of Saurashtra region, recharging of ground water is very less compared to drawl of water. Geological formation of Saurashtra region is of hard massive basaltic rocks having few cracks & crevices. Rivers are also of shorter length & shallow depth, water flows in river during monsoon period only.

Surface reservoirs (dams) constructed in Saurashtra region are of moderate storage capacity because rivers are not perennial. If rainfall is less than average rainfall, replenishment in dams will be very less which will not be sufficient for water supply throughout the year, Due to less recharging, groundwater dwindle down every years & yield of sub surface sources decreases. Moreover, Saurashtra region is also having sea on west & southwest side, & hence sources of water in costal belt districts of Amreli, Bhavnagar, Junagadh, Jamnagar, Porbandar and some pat of Rajkot are affected by sea water intrusion, resulting in to increase in salinity of ground water, beyond permissible limit. Looking to the aforesaid position districts of Saurashtra region are facing water shortage every year.

2.0 Over allproject :-

Sardarsarovar project of Narmada river has allocated 1.06 MAF of water for domestic and industrial use. The Government of Gujarat has therefore conceived a major and challenging drinking water supply master plan with the SardarSarovar Narmada canal as source of water. The Project aims at supplying 3571 MLD of drinking water (2900 MLD for domestic consumption and 671 MLD. for industrial consumption) to 8215 Villages & 135 Towns of Saurashtra, Kutchh, North Gujarat and Panchmahal.

The Goverment of Gujarat of Gujarat and Gujarat Water infrastructure Ltd. has planned to draw water from the vallbhipur&Maliyabranch canal for supply to the coastal Saurashtra region including Kutchhh. For the same four canal off take have already been identified in consultation with the Narmada Department and the SardarSarovar Nigam.

The Section-B of SardarSarovar canal Based drinking water supply Project is catering the part of Bhavnagar, Amreli and Junagadh District. as per the Project the water is to be drown from tail end of Vallbhipur branch canal by providing offtake at Ch.118.751 Km. in canal. The work of off take is to be carried out by SSNNL as

deposit work. It is planned to cater trunk pipe line as under from the said off take point.

Offtake point	Transmission section	Projected Population to be served in million		Projected Demand in Mld	
		2011	2021	2011	2021
B	Vallabhipur-Veralval	3.68	4.67	299.67	423.71

Detailled proposal for trunk main from Kadiyali (Rajula) to Veraval amounting Rs. 325 Crore was prepared by GWIL to cater 205.45 MLD of water among which 188.49 MLD of water is proposed to serve demand of Junagadh &GirSomnath districts, which has been commissioned . hence it is of prime importance to prepare and implement group regional water supply scheme for distribution up to villages (i.e. and user).

Trunk pipeline between vallabhipur to Veraval has to cater water requirement of 423.71 Mld. For the year 2021. This project is named as section "B" Till the Narmada based project is implemented. Government of Gujarat decided to execute a water supply scheme based on Pariyej&Kaneval tank to supply 275 Mld of Mahi water to part of Bhavnagar, Amreli&Bhal area of Ahmedabad District. As per this project. it was planned to lay a pipe line from Vallabhipur to supply 150 MLD of water. This pipeline is already laid up to Rajula and further pipeline work up to Sonariya near Veraval are also laid by Gujarat Water infrastructure Ltd.,Gandhinagar. Trough this Mahi pipeline is designed to carry 150 MLD of water from Vallabhipur can be used to cater water demand up to 200 MLD with some minor modification.

`According groups as under were formulated to fulfill the drinking water need of Una,Kodinar, Veraval, Sutrapada, Talala&MaliyaHatina Taluka under Junagadh &GirSomnath Districts.

Sr.No.	Name of Group	Beneficiary			Future water demand	Tapping point
		Taluka	No. of villages	Town		
1	Bedia-Machhundri and Una	Una	34	0	6.94	Rameshwarch. 199.08 km
		Una	56	0	13.71	Kesariyach. 231.68 km
2	Existing una-div r.w.s.s.	Una	39	3	30.04	Near Unach. 212.85 km
3	Kodinar	Kodinar	63	0	22.12	Near Malgamch. 247.39 km
		Sutrapada	11	0		
4	kodinar city	Kodinar	0	1	5.58	Near kodinar city ch. 257.67 km
5	Pranchi	Veraval	15	0	29.2	Near Pranslich. 270.83 km
		Talala	41	1		
		Sutrapada	21	0		
6	Sonariya	Veraval	38	0	11.37	Near Bolas ch. 287.19 km
		Talala	4	0		
		Sutrapada	15	0	12.48	Near Sonariyach. 293.29 km
		MaliyaHatina	13	0		

7	Veraval	Veraval	0	1	28.59	Near Veraval city
		Total	**350**	**6**	**160.03**	

In future duplicate pipeline from Vallabhipur canal will have to be laid for the remaining prospective demands as planned under project "B" and at that time this Mahi Pipeline can be switched over to supply Narmada water.

3.0 Necessity of the project :-

All the 77 villages and 1 town included in this scheme are the grip of severe scarcity of drinking water during summer every year, even after having average rainfall in normal monsoon. Out of which 5 villages are covered under Pranchi Regional Scheme. As such water supply schemes based on open wells or tube wells or simple wells or dams has been implemented to provide safe drinking water. The same becomes in-active during hot season due to non-availability of water from source. In certain cases, quality of water is also deteriorated due to salinity ingress or increase in total Dissolved Solids (TDS), Fluoride and Nitrates etc.

Most of villages are facing water shortage due to less or megre yield from locally available ground sources. This is evident from the fact that during scarcity year water has been supplied to most of the villages by tankers from far away water sources. This is one of the temporary measures resulting in to huge unfruitful expenditure.

The geological formation of the area is of hard massive Basaltic Rock and hence ground water recharging is very less in comparison of drawl. As such, ground water is depleting continiously. Under these circumstances there is very little possibility of getting reliable under ground water sources for individual villages water supply project.

Further in this region topography is very undulating and rainfall is inadequate, scanty and irregular because of this there is no proper recharging of ground water. In this region there is no perennial river within or nearby the project area. Under these circumstances the only reliable source is surface source.

As such water is required to be procured from a surface reservoir providing adequate water during whole the year situated within or near by the project area. At present Saurashtra pipeline project is under construction with Gujarat water infrastructure Limited in the project area and same is adopted as a source of water supply to this water supply project. This pipeline is laid up to Rajula and further pipeline up to Sonariya near Veraval is also laid by G.W.I.L.

4.0 source of the water supply :-

The source proposed to be utilized is a surface source is SardarSarovar. For this ground project the source is off take point as Ch. 118.751 Km. of Vallabhipur branch canal. In first instance Saurashtra pipeline based on Pariyej and Kaneval tank will be used as a source of water supply and in future ame will be switched over the duplicate pipeline to be laid from Vallabhipur canal.

5.0 Design criteria for the project :-

➢ 5.1 Population Projection :-

Population projection has been made for design period of 15 & 30 years.
Considering base year 2017, intermediate year 2032 & Ultimate year 2047.The Population is worked out on following methods.

- For the year 2011 population as per census data.
- For the year 2017 i.e. base year arrived 10.20 % increase on population of 2011 year (considering 1.7 % increase per year).

- For the year 2032 i.e. intermediate year arrived 25% increase on population of 2017 year.
- For the year 2047 i.e. ultimate year arrived 50% increase on population of 2017 year.

5.2 Design Period & Phasing:

The following design criteria are considered for preparation of detailed report and cost estimation.

- The following components are designed on the basis of design period of 30-year.
  - Considering available capacity of surface water sources is sufficient.
  - Treatment plant work (except for the Nos. of filters) provision for the total capacity of treatment plant should be restricted to maximum available quantity of water from Saurashtra Pipeline project.
  - Rising main, gravity main, internal distribution line etc.
  - Village level storages (sump / h.g.l.r.)
  - Building etc. civil works
- The following components are designed on the basis of design for 15 years.
  - Pumping machinery.

5.3 Design criteria for each of the Project components:

The following design criteria are considered for preparation of detailed report and cost estimation.

A Sources (i.e. taping point)

- 22 hours running capacity per day.
- in case of 1 Pump. 1 Pump stand by up to 50 HP capacity.
- increase of more pumps, 50% pumps stand by (More than 50 HP)

B Storage reservoir at taping point / main head work:

- Raw water sump having capacity of 12-hour ultimate stage requirement is proposed to avail quantity of water from trunk line.
- Clear water sump having capacity of 12-hour ultimate stage requirement is proposed to store filtered water.

C Storage reservoir at sub head works:

- 12-hours ultimate stage demand storage capacity in form of sump 4-hours storage capacity in form of ESR (wherever proposed).

D Transmission Line (Pumping mains)

- Transport capacity from tapping point to main head works and from main head work to sub head work is respectively 1.50 and 2.0 times average hourly demand based on 16-hour & 12-hour running.
- D.I. K-9 Pipes are proposed for the Rising main as the terrain is hilly and undulating

E Distribution line (Gravity main)

- Transport capacity 1.5 times average hourly demand based on 24 hours running.
- Due to hilly region and un dual ups and down gravity main pipe lines are proposed of D.I. k-7 class, that will much useful to supply uninterrupted water to beneficiary villages and easy operation and maintenance of regional water supply scheme.

G Treatment Plant :-

- Design criteria depending on treatment process 22 hours running per day, effluent quality according to w. h. o. standards.
- Minimum capacity of treatment plant has been kept 10 MLD.

H Storage at village level :-

- Considering present requirement, it is proposed to provide 24 hour storage in form of sump / h.g.l.r.
- To derive the capacity of existing serviceable storage is taken in account.
- At some villages i.e. At 17 villages where due to non availability of land to construct new storage , provision to demolish old un serviceable storage is also kept in the project.

I Financial Criteria :-

- All cost estimates are based on 2014-15 g.w.s.s.b. S.o.r. and 2015-16 r. & b. s.o.r.
- Contingencies @ 5% and work charged establishment charges @2% is added to derive Net cost. And to derive Gross cost 17.5% ETP Charges is added into Net cost.

6.0 Technical feasibility of the project :-

6.1 Short description of the project :-

- The Talala ,Sutrapada&Veraval talukas of GirSomnath district is situated in south-western side of the Saurashtra region of Gujarat State.
- The geological formation of the Saurashtra region in general and project area in particular is rocky in nature. The topography of project area is uneven and slopping towards the sea. The average annual rainfall is nearly 450mm. The maximum temperature is 45 degree and minimum is 12 degree centigrade.
- Looking the topography of the area, the proposed ground scheme covers 77 villages and 1-town . It is proposed to draw water from Vallbhipur off take point. From where water will be pumped to Kadiyali (Near Rajula). From Kadiyali water will again pumped at Kadiyali thereafter at Kesharya near Una.
- From bulk pipe line the water shall be collected near Pransli off-take point into Raw water sump and treated through WTP . From where the clear water will be pumped to different sub head work. and thereafter distributedthrugh gravity main and rising main to village level storages.

6.2 Actual situation & constrains:

- The situation in the project area with regard to the potable water supply is rather critical because of two reasons firstly, project area receives inadequate rainfall, which is also fluctuating from year to year, the area experiences a drought situation at an interval of every two to three years. The situation has resulted in poor recharging of the ground water aquifers as well as low reliability of sub-surface water storage. Secondly, project area is of inverted saucer shape which does not allow the rain water to stop for more time and hence resulting into lesser recharging, existing village level sources for potable water supply is also inadequate and not assured.

6.3 Population Projection & Water Demand:

Considering rate of water supply as 100 LPCD, water demand is as follows.

No. of villages	Population to be served				Water demand In Mld			
	2011	2017	2032	2047	2011	2017	2032	2047
77/1	176575	194625	243309	291955	17.66	19.46	24.33	29.20

6.4 Description of Project components:

- Near off-take point at Pranslih.w. water shall be collected in Raw water sump having 15.00 ML capacity.
- Near off-take point at Pranslih.w. water shall be Filtered through WTP having capacity 26.50 MLD and Collected in to clear water sump having 15.00 ML capacity.
- From where water shall be pumped and distributed through Sub head work by gravity main & pumping main to village level storage reservoirs.

A Rising main Storage reservoirs at Sub-Head works:

Rising main DI K-7				D.I.K-9	
Head work	service point	Size & Length		Size & Length	
		mm	Mtr	mm	Mtr
Pransli	r.w.s. to f.p.	600	300		
	pranchih.w.	350	4425		
Pranchi	prop. e.s.r.	350	100		
	mahobatpara	200	2900		
Pransli	Bhetalih.w.			350	16000
Bhetali	prop. e.s.r.	250	100		
Pransli	Ramparah.w.			600	11400
Rampara	Ankolvadih.w.			300	8200
moruka	moruka	150	900		
	jashapur	150	1670		
raydi	javantri			200	6900
Rampara	jashdharh.w.	500	6800		
Jashadharh.w.	Dhavah.w.	300	9100		
	Lushala			100	4400
Dhavah.w.	prop. e.s.r.	250	100		
Ramrechih.w.	prop. e.s.r.	200	100		
Ramrechih.w.	Chitravad, sangodra, haripur&hiranvel			300	4745
				250	430
				200	425
				150	11970
				100	600
		Total	**26495**		**65070**

B Storage reservoirs & villages to be served at Sub-Head works

Location of Storage	Storage capacity (ML)		Villages to be served
	Sump / h.g.l.r.	e.s.r.	
Pransli	15.0 + 15.0	-	0 / 77/1
Pranchi	1.60	0.85	18
Bhetali	2.50	0.50	19
Rampara	10.0	-	10+30/1
Ankolvadi	1.70	-	3+6
Raydi	0.20	-	1
Morukapadar	0.35	-	2
Jashadhar	6.50	-	9 / 1 + 11
Dhava	0.50	0.50	4
Ramrechi	1.10	0.20	7
Total	**54.45**	**2.05**	**77/1**

C Pumping Machinery at different head works:-

Pumping machinery		Capacity			
Proposed at Sub head works	**For Sub head works**	**K.W.**	**Nos.**	**LPS**	**Head**
pranslii	filt. Plant	37	2 + 1	16	153
	to pranchi	11	2 + 2	20	36
	to Bhetali	37	2 + 2	54	44
	to rampara	180	2 + 1	90	132
pranchi	e.s.r.	45	1 + 1	32	96
	Mahobatpara	15	1 + 1	28	20
Bhetali	e.s.r.	30	1 + 1	27	59
Rampara	Ankolvadi	45	2 + 2	92	33
	Jashadhar	90	2 + 1	50	115
Vadla	Bamnasa	15	1 + 1	48	10
Raydi	Javantri	22	1 + 1	77	18
moruka	moruka	22	1 + 1	40	24
	jashapur	15	1 + 1	40	17
jashadhar	dhava	15	2 + 2	33	29
Dhava	e.s.r.	15	1 + 1	25	37
	Lushala	15	1 + 1	59	5
Ramrechi	e.s.r.	15	1 + 1	35	23
	villages	37	2 + 2	95	40

D Gravity main :-

It is proposed to supply 77 villages and 1 town through sub head works mentioned above though gravity main pipeline d.i. K-7 90 mm dia to 500mm dia having total length 202.08 Km. up to village level cistern/Sump.

E Sump and pumping Machineries Proposed at various village

As said earlier considering present demand of each village remaining storage is proposed from of sumps. / h.g.l.r.s after deducting existing serviceable storage.

Accordingly following capacity of Sumps / h.g.l.r.s are proposed in the Project. Details is furnished in the statement.

Sr. No.	Capacity	NO
1	0.50 Lac	15
2	1.00 Lac	15
3	1.50 Lac	8
4	2.00 Lac	15
5	2.50 Lac	7
6	3.00 Lac	5
7	3.50 Lac	1
8	4.00 Lac	1

At the villages where existing e.s.r. Is the only storage In good condition, remaining storage is proposed in form of sump or h.g.l.r. and at villages sump is proposed due to less effective head available, than at these villages Pumping machinery having capacity 5.0 HP is proposed to lift water to Cisterns/E.S.R.s.

And among these villages wherever required pump House having size 2x2 mtrs. Is proposed.

list of villages is appended in the statement.

F Pump house at Head work / sub head works :-

To install pumping machinery at main head work / sub head works following way pump houses are proposed.

Sl. No.	Head work	Size (mt.)	No.
1	At Pransli	25 x 10	1
2	At Rampara	12.5 x 6	1
3	At Bhetali	5 x 4	1
4	At Pranchi	5 x 4	1
5	At Jashadhar	5 x 4	1
6	At Ramrechi	5 x 4	1
7	At Dhava	5 x 4	1
8	At village level	2 x 2	8

G Details of other common components of the Scheme :-

1 L.T. Lines & Special feeder Lines :-

- Necessary provision is made as per requirement of L.T. Lines, special feeder lines etc. in the Project.

2 Staff Quarters :-

- Necessary provision for Staff quarters is made in the Project for office staff, at different head works site, to look after the project during execution of works and after completion of works for maintenance & operation of regional water supply scheme.
- Following total nos, of staff Quarter are proposed in the project. :-

Sl. No.	Details	No.
1	Staff quarter Class-III 1 no. At pranslih.w.	1
2	Chowkidar Quarter-IV at different h.w.	7

3 Communication arrangement :-

- Necessary provision is made for intercommunication to inter connect the head works proposed at various places. And also field offices.

4 Tools and Plants :-

- Necessary provision is made for Tools and plants for execution, operation & maintenance of the Project.

5 Compound wall :-

- Necessary provision for compound wall around the head works site proposed at various places is proposed in the project for the protection from animals and outsiders etc.

6 Land acquisition & crop compensation :-

- Necessary provision is made to acquire land for different head works and crop compensation for pipeline alignment etc.

7 Third party inspection charges :-

- Necessary provision is made for Third party inspection charges etc. at the time of execution.

7.0 Financial aspects :-

Recapitulation Sheet

No.	Name of Component		Cost of Component (Rs. Lack)
1	Connecting main from trunk line 900 mm D.I. K-7 400 mt		107.34
2	Raw water sump at Pransli H.W. 15.0 ML		292.49
3	Filteration Plant 26.50 MLD at Pransli H.W.		308.09
4	gravity main from filteration plant to c.w. sump 900 mm D.I. K-7 260 mt		81.01
5	Clear water sump at Pransli H.W. 15.0 ML		292.49
6	R.C.C. Sump / h.g.l.r. at different head works		
	a	1.60 ML at Pranchi H.W.	40.56
	b	2.50 ML at Bhetali h/w	57.41
	c	10 ML at Rampara H.W.	189.82
	d	6.50 ML at Jashadhar H.W.	129.90
	e	1.70 ML at Ankolvadi H.W.	40.40
	f	0.20 ML at Raydi village for Javantri	6.75
	g	0.35 ML at Morukapadar for moruka&Jashapur	10.92
	h	0.50 ML at Dhava H.W.	15.09
	I	1.10 ML at Ramrechi H.W.	28.84
7	R.C.C. E.S.Rs. At different head works		
	a	8.50 lacs 20 mt at Pranchi H.W.	80.09
	b	6.0 lacs 15 mt at Bhetali H.W.	58.23
	c	5.0 lacs 12 mt at Dhava H.W.	49.67
	d	2.0 lacs 20 mt at Ramrechi H.W.	27.83
8	Rising main lines		
	a	600 mm D.I.K-7 300 mt From r.w.sump to filteration plant at Pransli H.W.	47.87
	b	350 mm D.I. K-7 4425 mt From c.w.sump to pranchih.w.	200.53
	c	350 mm D.I.. K-7 From sump to e.s.r. 100 mt at Pranchi H.W.	13.43
	d	200 mm D.I. K-7 2900 mtFromPranchih.w. To mahobatpara Village	69.38
	e	350 mm D.I. K-9 16000 mt from Pransli H.W. to Bhetali H.W.	827.10
	f	250 mm d.I. K-7 From sump to esr 100 mt at Bhetalih.w.	9.14
	g	600 mm D.I. K-9 11400 mt From Pransli H.W. to ramparah.w.	1282.00
	h	300 mm D.I. K-9 8200 mt From ramparah.w. to ankolvadi H.W.	354.95
	i	150 mm D.I. K-7 1670 mt From morukapadar to jashapur	34.44
	j	200 mm D.I. 900 mt From moruka sump to h.g.l.r.	25.56
	k	500 mm D.I. K-7 6800mt From ramparah.w. To jashadharh.w.	501.28
	l	300 mm D.I. K-7 9100 From Jashdharh.w. to dhavah.w.	322.28
	m	100 mm D.I. K-9 4400 mt From Dhava sump to	65.28

		Lushala village	
	n	250 mm d.I. K-7 From sump to esr 100 mt at Dhavah.w.	9.14
	o	200 mm D.I. K-7 100 mt From Ramrechi sump to E.S.R.	8.06
	p	300 / 250 / 200 /150 /100 / 80 mm D.I. From Ramrechi H.W. to chitravad, sangodra, hiranvel&haripur 18170 mt	471.65
	q	200 mm D.I. K-9 6900 mt From raydi sump to javantri Village	180.92
9	Pumping Machineries		
	a	37 k.w. 3nos at c.w.sump to filteration plant at Pransli H.W.	26.13
	b	11 k.w. 4 nos at Pranslih.w. C.w. Sump to Pranchih.w.	10.36
	c	45 k.w. 2nos at Pranchi H.W. for proposed E.S.R.	21.19
	d	15 k.w. 2 nos at Pranchi H.W. for Mahobatpara village	7.07
	e	37 k.w. 4 nos at Pransli H.W. for Bhetali H.W.	34.84
	f	30 k.w. 2 nos at Bhetalih.w. for E.S.R.	14.13
	g	180 k.w. 3 nos at Pransli H.W. for Rampara H.W.	127.12
	h	37 k.w. 4 nos at Rampara for Ankolvadih.w.	42.38
	i	15 k.w. 2 nos at Vadla for Bamnasah.w.	7.07
	j	90 k.w. 3 nos at Rampara for Jashadharh.w.	63.56
	k	15 k.w. 4 nos at Jashadhar for Dhava H.W.	14.13
	l	15 k.w. 2 nos at Dhavah.w. for E.S.R.	7.07
	m	15 k.w. 2 nos at Dhava H.W. for Lushala village	7.07
	n	11 k.w. 2 nos at morukapadar for moruka village	5.18
	o	11 k.w. 2 nos at morukapadar for Jashapur village	5.18
	p	22 k.w. 2 nos at Raydi for Javntri village	10.36
	q	15 k.w. 2 nos at Ramrechi for e.s.r.	7.07
	r	37 k.w. 4 nos at Ramrechi for Chitravad, Hiranvel, Haripur &Sangodra villages	34.84
	s	5 k.w. At village level (at ankolvadi, amblash, timdi, dhava, hadmatiya, madhupur&jambur) 7 nos	8.24
10	Pump houses at various head works		
	a	at Pranslih.w. size 25x10 1 no	42.30
	b	at Rampara size 12.5 x 6 mt 1 nos	14.08
	c	at Bhetali , Pranchi , Ramrechi , Dhava H.W., Jashadharh.w. - 5x4 mt 5 nos	12.85
	d	at raydi(for javantri), morukapadar , Ankolvadi, madhupur , timbdi, amblash, dhava&hadmatiya 8 nos. 2mt x 2 mt size	9.12
11	Gravity main		4033.18
12	h.g.l.r.s at various villages		367.12
13	demolition of existing un serviceable storage at village level		4.55
14	inter connection of storages at village level		41.50
15	Staff quarters		
	a	Class III 1 no at Pranslih.w.	16.28

	b	Chowkidar quarter with store 7 nos at different h.w.	44.38
16	L.T. line		50.00
17	Communication arrangement		2.00
18	compound walls at various H.W.		132.99
19	Land acquisition, jungle cutting & crop compesation		200.00
20	Tools and plants		10.00
21	Third party Inspection		35.00
		Total Rs.	**11708.28**
		Add 17.85 % E.T.P. charge Rs.=	2036.91
		Grand Total Rs.=	**13745.19**

8.0 Cost per capita:

- **As per 2011 Population: Rs. 7969.22**
- **As per 2017 Population: Rs. 7230.14**
- **As per 2032 Population: Rs. 5783.45**
- **As per 2047 Population: Rs. 4819.80**

9.0 Funding , Operation & maintenance :-

9.1 policy

- Due to the extension of Nos. of schemes operated by G.W.S. & S. Board addition and new scheme require input on G.W.S.&S. Board for operation and maintenance as it requires budget for it.
- At present, the central input of G.W.S.&S.Board is focused on the O & M and of main structural works such as source, treatment plants, busting stations, reservoirs, transmission mains and village level facilities. It is new proposed that O & M at villages level facilities is to be done within the scope of the village organization structure, but with technical assistance of G.W.S.&S.Board For the reason It is suggested to split up to organization structure for operation and maintenance into two specifications , one for the head works and distribution network and another for the village level facilities.
- G.W.S.&S.Board will be responsible for the operation and maintenance of head work and distribution system, whereas Pani Panchayat or local level Gram panchayat will be responsible for O & M of the village level facilities.

9.2 Operation & maintenance at village level :-

- It has been considered useful to have community involvement in the O & M at village level. The task of the Pani Panchayat categorically spells out the village wise responsibility to be shared by them. For the reason village level GWS & S Board functionary (lineman is made member for the Pani panchayat, focused on sharing of the O & M responsibility. The provision of the community fund through the Pani panchayat is also a step in the direction to meet part of the cost of the O & M at village level. However, this fund should be logically administrated and controlled outside G.W.S. &S.Board at the Pani Panchayat level.

9.3 Annual O. & M. Cost :- Rs. 1012.24 Lacs

9.4 Cost of kilo litres of water:- Rs. 9.50

9.5 Cost of Recovery :-

- It is policy of the Govt.of Gujarat to operate & maintain Rural Regional water supply scheme and to recover Rs. 2.00 per 1000 litres of water from concern village panchayat. This scheme will also be operated and maintained on the similar basis.

10.0 Details of Previous Sanction :-

- The Project has been sanctioned for Rs. 3185.4 lack Nett& Rs.3344.70 lack Gross by G.W.S.&S.Board's T.S.C. during it's 70th meeting held on Dtd. 08.10.2004, with a condition to prepare detailed engineering project after detailed survey with actual hydraulic design duly checked.
- According after carrying out detailed survey the detailed project was prepared and submitted for approval. T.S.C. sanctioned during it's 80th meeting held on dtd. 20.10.2008 with some remarks.
- Thereafter a meeting with the chairmanship of Hon. Member Secretary was held at Rajkot on dtd. 02.01.2009 to discuss regarding the project re prepared after making compliance of the remarks raised during above said meeting of the T.S.C. During the meeting C.E.monitoring .&planning,Board head office, Gandhinagar ; C.E. zone-3, Rajkot ; S.E.,P.H.Circle, Junagadh, E.E., P.H.works Division, Junagadh and other field officers were remained present. Detailed discussion was made during the meeting.
- According the meeting's detailed discussion and direction the project was re prepared and submitted to the board office for approval.
- The C.E.monitoring .&planning,Board head office, Gandhinagar has principally approved the project vide his office letter no. Tech cell / zone-3 / junagadh-115 / khambha group / 276 dtd. 29.01.2009. for Rs. 4621.02 lacs Nett& Rs.5445.87 lacs Gross.
- The C.E., zone-3 , Rajkot has accorded administrative approval and overall technical sanction for the same amount respectively vide his office letter no. RWS/ 2403/ 9391 / PB-4 / 742 dtd. 26.02.2009 and RWS/ 2403/ 9968 / PB-4 / 1713 dtd. 11.05.2009.

11.0 Reason to rename the project:-

- Previously it was proposed to construct main head work of this group near village Khambha of Sutrapada taluka. So, the name of this project was kept Khambha group.
- Now main head work of the project is to be constructed near villagePransli along Kodinar-Veraval national high way and there is an existing regional water supply scheme named Pranchir.w.s.s.
- Also There is already a group named Khambha Group in Amreli district based on Mahee- Narmada bulk pipe line, so by keeping the same name of this project as Khambha group may result in complications. Moreover Hon. Minister, W.S. has suggested to rename this group as Pranchi Group. so, the name of this project is re named as Pranchi group.

12.0 Reasons for the delay of the project :-

A regional water supply scheme named Rasulpara covering 5 village 1 ness of Talala taluka was prepared based on well on bank of Singoda river. Rising main pipe line &

some part of gravity main pipe lines of this project was required to lay through Gir sanctuary forest between Jamvala village and Bamnasa village. For the same it was compulsory to get prior approval from Houn'ble supreme court of India. A proposal was submitted to state forest department.Then From G.W.S.S.B. An I.A. no. 1364-2013 was filed before Empowered committee of Houn'ble supreme court of india. Thereafter a long time Houn'ble supreme court of India has granted permission on dtd. 5-10-2015. Then As per letter dtd. 23/12/2015 Principal chief conservator of forests, Gujarat state has granted permission to lay pipe line between Jamvala to Bamnasa villages falling under Girsantury forest. After many years the permission was availed.

At many places some pipe lines for Khambha group was required to lay through protected forest / reserve forest area . At that time there was uncertainty about how much time may be consumed to get the permission to lay pipeline through forest area. Which may result unnecessarily delay in the execution of Khambha group. So, at that time it was decided to execute the Khambha group after getting necessary permissions from forest department and hence this project could not be executed.

Since last some years Ministry of Environment, Forest and Climate change, Government of India has simplified the process to get forest permission and has launched a portal for online permissions. So, at present process to get permission to lay pipe line through protected forest / reserve forest is became somewhat very easy. For this project process to get forest permission is being applied by sub division office. Permission shall be granted within very short period.

13.0 Causes to revise the project :-

Previously scheme was prepared based on 2007-2008 year SOR rates. Now scheme has been prepared on current SOR rates. Also in previous scheme rising main pipe line were proposed of M.S. pipes and gravity main pipes were proposed of P.V.C., H.D.P.E. and A.C. pipes. Now considering un even and hilly terrain D.I. K-9 Pipes are proposed for the Rising main pipes. Also due to hilly region and un dual ups and down gravity main pipe lines are proposed of D.I. k-7 class, that will much useful to supply uninterrupted water to beneficiary villages and easy operation and maintenance of regional water supply scheme.

14.0 **Conclusion :-**

Villages to be covered are suffering acute shortage of drinking water during three to four months of every summer and scarcity period. So, it is requested to approve the project based on sustainable water source to provide beneficiary villages adequate water during whole the year.

Executive Engineer
P.H.W. Division
Gju. W/S. & S. Board
Veraval