

A Report on

NMCG 118 RIVER FRONT POINTS IDENTIFICATION KIRTINAGAR, UTTARAKHAND



By

**Manish Kumar Nema, Scientist-C
T R Sapra, Research Associate**

**NATIONAL INSTITUTE OF HYDROLOGY
ROORKEE – 247 667
MAY - 2015**

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NMCG 118 RIVER FRONT POINTS IDENTIFICATION (KIRTINAGAR, UTTARAKHAND)

1. BACKGROUND

Riverfront Development projects are an urban landscaping and transportation projects primarily aimed at transforming both sides of the riverbank into leisure space, with claims of providing solutions to flood management, protection of the river from sewer pollution, as well as creating value on land that is wasted as currently used. The river front development projects were started in North American cities in early 60s. Nowadays, waterfront development is a global trend and thousands of schemes are being carried out in large metropolises, medium size cities and even small towns all over the world. Whereas the early examples of waterfront development primarily focuses on leisure and retail, contemporary schemes have a broader scope; many setup with a aim to create attractive mixed urban environment that appeal to the imagination of the people and persuade them to work there, to live there or to visit there. In India also there are few examples of river front developments like Sabarmati riverfront development.

Under the national mission on clean Ganga, Ministry of water Resources, river development and Ganga rejuvenation has identified 118 number of river front point to be considered for development. National Institute of Hydrology (NIH) has been assigned with the responsibility of collecting the preliminary information about the selected points, which falls in state of Uttarakhand by the ministry. For collecting the requisite information 12 groups of the scientists has been formed and visited the respective locations earlier in December 2014 and again in May 2015. Team number 8 comprising of Shri Manish Kumar Nema, Scientist-B and Shri T.R. Spara, SRA of NIH have been allocated for the proposed River front town Sr. No. 12 Kirtinagar in Uttarakhand. The team has undertook the visit on the 19.05.15 for observe the development made since the last visit in December 2014. A brief report is presented here about team's observation during the visit.

2. ABOUT KIRTINAGAR

Kirtinagar is a town and a Nagar Panchayat (NP) with four wards in Tehri Garhwal district in the Indian state of Uttarakhand. It is smallest Nagar Panchayat of the Uttarakhand as informed by the executive officer of NP. As per 2011 India census, Kirtinagar had a population of 1517. Males constitute 57% of the population and females 43%. Kirtinagar has an average literacy rate of 73.10%, almost matching with the national average of 74.04 %. In Kirtinagar, 11% of the population is under 6 years of age. It is located upstream of the Devprayag on the bank of River Alaknanda (Fig 1). Nearby big city is Srinagar which is around 6 km from it. With the prevailing urbanization and population growth, Kirtinagar is expected to be the twin city of Srinagar in near

future. Being a home to literate people most of the population are in government or private jobs and other are involve in agriculture for their livelihood. There is no major or micro and small scale industry or enterprises present in Kirtinagar Panchayat. At present the chairman is Mrs Kalpana Kathot and the executive officer is Mr Vinod Kumar for Kirtinagar Nagar Panchayat. Fig 2 presents the locations of various features in Kirtinagar, Uttarakhand.



Location of New Bridge seen from Nagar Panchyat Kirtinagar

There is one unique fair named “Nagendra Saklani -Molu Bhardhani Memorial Fair” is also being organized during 11th -14th of January every year. And during that time the floating population of Kirtinagar touches around 20,000 in these four fair days due to large population influx from nearby villages

3. WATER RESOURCES / RIVERS /TRIBUTARIES

Detailed information on water resources, rivers, and tributaries has been reported in the last report. Although, Alaknanda is the major river in the Kirtinagar Panchayat, other than this one small tributary named Dhundgad is also joining the river Alaknanda at Dhundgad-Prayag. This prayag (Confluence) is having some local religious importance located 600 meters downstream of the new bridge (Fig. 3). Water of Alaknanda and Dhundgad is appears to be very clean.

3.1 Water Supply

Uttarakhand Jal Sanshthan (UJS) is the agency responsible for drinking water supply in Kirtinagar. In the last visit for seeking the information about source of water supply and sewage the team has approached to local office and met to the junior engineer (JE). This time the team has visited Executive Engineer's office located at Srinagar to fetch more information. The Dhundgad stream is being tapped around 1.5km upstream of the confluence point with Alaknanda near at village Ghirkoti. And daily approximately 237 m³ of water is being supplied from there to entire Kirtinagar Panchayat after necessary treatments and disinfection.



Fig 2: Locations of various features in Kirtinagar, Uttarakhand



Dhundgad Stream Joining Alaknanda River d/s new bridge

3.2 Sewage Details

The Executive officer of NP as well as the JE of UJS, has informed us that as of now there is no provision of sewage treatment as well as for collection or pumping. Most of the individual have adopted the soak pit type traditional sewage disposal system with the overflow going into open drains. The team along with the local body officer have also inspected the two main open drains going into river bed. Both the drains are located in the back portion of the main Bazar of Kirtinagar upstream of New Bridge (Fig 4.). These drains are very small and light discharge in nature. Although there is no monitoring of discharge quantity and quality is being done but, the discharge can be related to discharge from two 4" diameter pipe. The approximate quantity of sewage generated per day is about 180 m³ as informed by JE, UJS.

During the visit it has come to know that recently Construction and Maintenance Unit (Ganga) of Uttarakhand Jal Nigam has conducted a preliminary survey for preparation of DPR for the sewer system at Kirtinagar Panchayat. The Assistant engineer of unit Er. S. N. Singh and Er. Virender Bhatt has confirmed this information.



Fig 4. Open Drain 2 going into Alaknanda riverbed

4. PROBABLE RIVER FRONT

In our last visit based on the survey conducted, one probable location of river front development has been identified by NIH team and Kirtinagar Panchayat team jointly. Dhundgad-prayag ghat site can be developed as river front for Kirtinagar. In the current visit while going to Srinagar to meet executive engineer, the team has noticed that there is a huge possibility for river front development in between these twin cities, i.e. Kirtinagar-Srinagar. Some of the river bank protection work is under progress in this stretch. The photographs taken of the sites are displayed in Fig 5 and Fig 6.



Other View of Probable Site of River Front Development

5. GOOD POINTS TO MENTION

Kirtinagar panchayat have a very good mechanism for solid waste disposal. All possible solid waste of city get collected at a trenching ground, where first it got segregated and then compacted by a compactor for safe disposal. It's an Uttarakhand Government initiative. During the visit team has observed that the panchayat has constructed a garbage bin on the Dhundgad-prayag ghat near to the river bed for collection of bio-degradable and non-biodegradable wastes separately (Fig. 7).

SNo. 12 Kirtinagar



Fig 6.

Probable site for River Front Development



Fig. 7 Bio-degradable and Non-biodegradable Garbage Bin

6. PLANNING AND SURVEY

As the city do not have its own sewage treatment plant, the Uttarakhand Jal Nigam (construction/developmental agency) has planned for a common sewage treatment plant (STP) of 3 Million Litres per Day (MLD) capacity for nearby village and as well as for Kirtinagar at Jakhani a nearby village about 1km upstream of the city (Fig 7). Not much of the progress has been seen, as only preliminary survey for sewer line has been done to prepared DPR. The team during the first viist has also surveyed and collected a variety of information about river, its tributaries, sewerage generation, population, fairs etc., has been complied and presented in Annexure 1.



Fig. 8 Proposed site for planned STP by Uttarakhand Jal Nigam

7. CONCLUSION

Kirtinagar may be a potential site for river front development, but the absent of other tourist activity and small town style city culture may not make it economical viable and feasible project. The river front development plan should be made in consent with the local administration as they will be in better position to suggest about the best possible way to make it happen at Kirtinagar. In near future the Kirtinagar is going to be the satellite city of the nearby major city Srinagar, so the development of Alaknanda Riverfront at Kirtinagar will always be advantageous for handling the increased tourist influx in future. There is huge potential site for river front development in between Kirtinagar and Srinagar.

KEY CONTACTS AT KIRTINAGAR

1. **Mr. Vinod Kumar**
Executive Officer
Nagar Panchayat Kirtinagar
Kirtinagar-249161 (Uttarakhand)
Tel: 01370-260439 M: 8449872622
E: npkirtinagar@gmail.com

2. **Er S. N. Singh**
Assistant Engineer
Development and Maintenance Unit (Ganga)
Uttarakhand PeyJal Nigam
Srinagar - 246174 (Uttarakhand)
M: 7830500850
E: snsingh.p@gmail.com

2. **Er Virender Bhatt**
Assistant Engineer
Development and Maintenance Unit (Ganga)
Uttarakhand PeyJal Nigam
Srinagar - 246174 (Uttarakhand)
M: 8923303595
E: vpbupn@gmail.com

2. **Er Naresh Pal Singh**
Assistant Engineer
Uttarakhand Jal Sansthan
Kirtinagar -249161 (Uttarakhand)
M: 9997887871; 9639118964
E: np@gmail.com

SURVEY FOR NMC 118 RIVER FRONT POINTS IDENTIFICATION AT KIRTINAGAR, UTTARAKHAND

DATE : 05.12.14

Sr No.	Checklist				Remarks
1	Name of River :	Alaknanda			
2	Location :	Kirti Nagar City			Nearby Major City is Srinagar, Dist. Tehri-Garhwal
		From	To		
3	Stretch of River :	New Bridge	Dhund Prayag Ghat		Name of Towns/Villages/Landmark
a	Length		0.6 km		
b	State :	Uttarakhand			
c	Tehsil :	Dev Prayag	Dist. Tehri-Garhwal		
4	City/Town/Village :	Kirti Nagar City			Give all name of all villages/town/City
5	Locations of Religious/Historic Importance :	Dhund Prayag Ghat			Please mention name of ghat/temple/palace etc.
a	Any annual fairs/festival etc along the stretch :	Yes.			If yes, list all of them
b	Name of Fair/festival	Approx Population visiting	Interval (Annual/Biannual etc)	Time of year (Christian /Hindu/ Muslim Calender)	
	Nagendra Saklani - Molu Bhardhani Memorial Fair	20000 No.	Annual	11 th - 14 th January	
6	Map No. :	53 J/16			Survey of India Toposheet Reference
7	Details of Nallah/Rivers tributing :				
a	Name :	Dhund Gad Stream			Rows to be repeated for each Nallah/River
b	Location of Confluence :	Dhund Prayag 600 meters downstream of new Bridge			
c	Width :	3-4 Meters in lean season to 7- 9 Meters during Monsoon			
d	Flow (Seasonal/ Perennial) :	Perennial			
e	Is Sewage/Effluent Flow Observed :	NO			Yes/No
f	Nature of Flow (Light/Moderate/Heavy) :	Light			
g	Quality of Water :	Crystal Clear			Arsenic - 0.0 ppm
(i)	pH	7.6			Fluoride - 0.0ppm
(ii)	SS	NA			Calcium - 160 ppm
(iii)	BOD	NA			Magnesium - 40 ppm
(iv)	COD	NA			Sulphate - 4 ppm
(v)	N	4.5			Alkalinity - 160 ppm
(vi)	P	NA			Turbidity - 0.50 NTU
(vii)	Coliforms	Abst.			Total Hardness - 200 ppm
(viii)	Date of Sample :	01.08.2014			Residual Chlorine - 0.0ppm
(ix)	Time of Collecting Sample :	Not Specified			
(x)	Test Carried out by :	Uttarakhand Jal Sansthan (UJS)- Dev Prayag T.G. Laboratory			

8	Details of Storm /Sewer Outlets	Two Drains			
a	Location of Drain :	Both Near Main Bazar Upstream of New Bridge			
b	Whether Pipe Drain/Box Drain/Open Drain :	Open Drain			
c	Approximate Size :	4" Dia pipe X 2			
d	Is Sewage/Effluent Flow Observed :	NO			
e	Nature of Flow (Light/Moderate/Heavy) :	Very Small / light			
f	Quality of Water :	Not Available			
(i)	pH	Not Available			
(ii)	SS	Not Available			
(iii)	BOD	Not Available			
(iv)	COD	Not Available			
(v)	N	Not Available			
(vi)	P	Not Available			
(vii)	Coliforms	Not Available			
(viii)	Date of Sample :	Not Available			
(ix)	Time of Collecting Sample :	Not Available			
(x)	Test Carried out by :	Not Available			
9	Details of Towns/Villages/Cities in the Stretch :				
a	Name :	Kirti Nagar			
b	Area :	2.5 km ²			
c	Jurisdiction (Panchayat /Municipality /Municipal Corpotion)	Nagar Panchayat			Executive Officer, Nagar Panchayat Kirti Nagar- 249161 (Uttarakhand) Tel: 01370-260439 M: 8449872622 E: npkirtinagar@gmail.com
d	Concerned Jal Board official (Not below Ex en)				Asst. Engineer, Uttarakhand Jal Sansthan, Kirti Nagar - 249161 (Uttarakhand) M: 9997887871; 9639118964
e	Population (2001 Census) :		1040		
f	Population (2011 Census) :		1517		
g	Arrangement for Water Supply :				
h	Source :	Dhund Gad Stream at Ghirkoti Village			
i	Quantity of Water Supplied (m3/day) :		235 m3/Day		
j	Quantity of Sewage Generation : (m3/day) :		180 m3/Day (Approximate)		
k	Present Arrangement for Sewage collection :	No Collection System			Most of the individual have arranged Soak Pit type sewage disposal system
l	Is there any interception/diversion drain available to prevent sewage flow in the river :	NO			open drains / lined drains /underground pipe network
m	Size :	NA			
n	Disposal Point :	NA			(To STP/ To Pumping Station)

10	Details of Sewage Pumping Stations if any :	NA			Repeat rows for each Sewage Pumping Station
a	Location :	NA			
b	Capacity (m3/day) :	NA			
c	Year of construction:	NA			
d	Condition (working/not working)	NA			
e	Availability of Continous Power :	NA			
f	Is DG Set Provided :	NA			If provided please give KVA
g	Is DG Set in working condition :	NA			
h	Does it have bypass arrangment :	NA			Yes/No
11	Details of Sewage Treatment Plants/Effluent Treat	NA			There is no STP/ETP as of now, Uttarakhand Jal Nigam is planning for a common STP plant for near by village as well as for Kirti Nagar at Jakhani a near by village about 1km upstream
a	Location :	NA			(Oxidation Pond/ASP/UASB/SBR etc)
b	Capacity (m3/day) :	NA			
c	Technology :	NA			
d	Year of construction:	NA			
e	Name of Implementing Agency :	NA			
f	Condition (working/not working)	NA			
g	Does Inlet contain Industrial Effluent mixed with Sew	NA			Yes/No
h	Inlet Sewage Parameters	NA			
i	Outlet Sewage Parameters	NA			
j	Availability of Continous Power :	NA			
k	Is DG Set Provided :	NA			If provided please give KVA
l	Is DG Set in working condition :	NA			
m	Does it have bypass arrangment :	NA			Yes/No
n	Details of Outlet :	NA			
o	Location:	NA			
p	Size :	NA			
q	Design Parameters (Inlet)	NA			
r	Design Parameters (Outlet)	NA			
s	Is there any O&M agency appointed for the plant :	NA			
t	Does the agency have skilled technical staff :	NA			
u	Is official permission for discharge of treated sewage	NA			
v	Is the STP underutilised or under capacity :	NA			
w	What is the Gap in Treatment Capacity :	NA			Yes/No
x	Does the plant have SCADA and Automation :	NA			
11	Details of Industries in Stretch :	NA			No Major as well as MSME is present in Kirti Nagar
a	Name :	NA			
b	Raw Material Used (Name and Quantity) :	NA			
c	Product (Name and Quantity) :	NA			
d	Quantity of Effluent Generated :	NA			
e	Quality of Effluent :	NA			
f	Disposal Point :	NA			

	Policy Related points :				Describe in detail
12	What are the Prevailing discharge norms for land disposal/ River disposal/ Pond Disposal				Common STP is proposed for river disposal. Kirti Nagar have a trenching ground for soild waste collection, where all the solid waste of city get colleted and segregated and then compacted by a compactor for safe disposal of solid waste.
13	Who is the Ground Water Regulatory Authority in th	Uttarakhand Jal Sansthan			Uttarakhand Jal Sansthan have dug out some manual hand pumps for drinking water at common places, but any monitoring of ground water or estabishment of pizometer is not being done.
14	Methodology for observation and monitoring of bor	NO Observations			
15	Is there any policy on penalty non compliance of discharge norms from STP/ETP	NA			
16	Is local Municipal Staff and Jal Board staff with acquainted with latest technology such as SBR/MBBR/MBR etc.	NO			Both the local body i.e. Nagar Panchayat and the Uttarakhand Jal Sansthan staff were not aware of any of the mentioned water technology
17	Are there any opportunities to recycle and reuse sewage for Agriculture, horticulture, Industry etc	Recycle sewage can be used for landscape irrigation			
18	Is there a policy to provide SCADA, Automation and remoe monitoring of all exisitng and proposed STP's	NA			
19	Is there any policy/regulations/resolutions/incentives for reuse and recycle of sewage water	NA			
20	Is there any revenue generation model for self sustainance of sTP by utilisation Gas/Sludge etc.	NA			
21	Is there any policy/regulations/resolutions/incentives for utilisation of waste to energy	NA			
22	Is there any policy for encouraging PPP in STP projects	NA			There must be such policy but the person with whom we have interacted have no information about this