

MEMORANDUM FOR EMPOWERED STEERING COMMITTEE (ESC) ON THE PROPOSAL OF 'WATER QUALITY MONITORING SYSTEM FOR RIVER GANGA' UNDER NATIONAL GANGA RIVER BASIN AUTHORITY (NGRBA)

1.0 STATEMENT OF PROPOSAL

- 1(a) The approval of the Empowered Steering Committee (ESC) is sought for the proposal of "Water Quality Monitoring System for River Ganga" under the centrally sponsored scheme of National Ganga River Basin Authority (NGRBA) at an estimated cost of Rs. 94.45 crore. The project cost will be fully (i.e. 100%) met by the Govt. of India.
- 1(b) The procedure as suggested in NGRBA framework has been followed in finalizing the proposal. There is no other scheme with overlapping objectives in other Ministries/ Departments of the Central or the State Government.
- 1(c) This is a new proposal and being put up by the NMCG under the NGRBA Programme duly appraised by the NMCG in-house. The appraisal note is annexed.
- 1(d) CPCB has been identified as the implementing agency and proposed to carryout monitoring water quality of the main stem of river Ganga at selected locations including confluence points of some drains, tributaries and canals with river Ganga. The proposal is aimed to assess nature and extent of pollution control needed at various locations in the water bodies; to evaluate effectiveness of pollution control measures already in place; to plan rational pollution control strategies and their prioritization; to evaluate water quality trend over a period of time; to assess and use assimilative capacity of a water body and thereby reducing cost on pollution control; to understand the environmental fate of different pollutants; to assess the fitness of water for different uses and to achieve an overall improvement of the water quality of River Ganga and its tributaries and the proposal would enable a solution for achieving the very purpose of NGRBA.
- 1(e) The proposal is not a location specific but aimed for pollution abatement along the main stem of River Ganga and the selected tributaries, namely Ramganga & Kali rivers covering the States namely Uttarakhand, Uttar Pradesh, Jharkhand, Bihar and West Bengal.
- 1(f) CCEA has approved the NGRB project (World Bank assisted EAP component of the NGRBA Programme) for Rs. 7000 crores, of which Rs. 900 crore was allocated for Institutional development and project implementation support component including the CPCB proposal of "Water Quality Monitoring System for River Ganga" under NGRBA.

As per the mandate of the NGRBA it has to be ensured that by 2020 no untreated municipal sewage and industrial effluents flow into Ganga.

Rs. 512.50 crore was allocated in the Budget Outlay for 2012-13 for NGRBA programme, which includes outlay of Rs. 50.66 crores for the Institutional development component of the World Bank assisted NGRB project. The instant project proposal indicates tentative budget outlay of Rs. 11.96 crores for the financial year 2012-13, to be met out of the overall budget outlay of the programme.

- 1(g) Implementation of the proposal is important from socio-economic and environment point of view. The estimated yield from the project shall be in terms of improved water quality and river ecology. An estimation reveals that 1,39,000 kg per day of biological oxygen demand (BOD) load is discharged into the river, which needs to be addressed in totality covering both industrial and municipal wastes (liquid and solid).
- 1(h) Submission of the physical and financial progress reports of the project and the utilization certificates in respect of the work done and funds utilized for expenditure on the project and the unspent amount at the end of the period shall be submitted by the implementing agency as per the provisions made in the NGRBA programme framework.
- 1(i) The proposal has not been presented before any other Committee under any other programme.
- 1(j) The output and the outcome of the proposal shall be as follows:
 - ✓ Real time (Automatic) monitoring at 113 locations (List placed at Annexure-I)
 - ✓ Quality Assurance service for the Real time water quality monitoring system
 - ✓ Biomonitoring at all the real time monitoring locations
 - ✓ Community supported Monitoring at remote locations (wherever manual and real time monitoring are not feasible, but of important impact locations to be covered through engaging NGOs registered with CPCB and Institutions already involved in water quality monitoring activities).

1.1 PRESENT STATUS

The Central Pollution Control Board (CPCB) has established a network of monitoring sites on rivers across the country based on collection of samples manually. The present manual monitoring network comprises of 2500 sites in 27 States and 6 Union Territories. The WQMN covers 445 Rivers, 154 Lakes, 12 Tanks, 78 Ponds, 41 Creeks/Seawater, 25 Canals, 45 Drains, 10 water treatment plant and 807 Wells.. Among the 2500 sites, 1275 are on rivers, 190 on lakes, 45 on drains, 41 on canals,

12 on tank, 41 on creeks/seawater, 79 on pond, 10 water treatment plant and 807 are groundwater sites.

There is no real time monitoring station for river water quality monitoring. However, through hydrology project, sponsored by Ministry of Water Resources, 10 real time stations are in the advance stage of implementation, of which 8 are to be located in the river Ganga. However, necessary measures will be taken by the CPCB to ensure that these 8 real time stations on river Ganga are installed in separate locations to avoid overlapping with the instant proposal. There are 10 Water quality basic parameters such as pH will be monitored under the Hydrology project, whereas the instant proposal of WQM system for river Ganga will have 18 parameters to be monitored in the proposed real time stations.

The water quality monitoring of the River Ganga and its several tributaries is being carried out in the basin by the SPCBs of Uttarakhand, Uttar Pradesh, Bihar, West Bengal, Haryana, Himachal Pradesh, Rajasthan, Madhya Pradesh, Jharkhand and CPCB at 233 locations, of which 57 locations are on the main stem of river Ganga and included in the instant proposal. The details of CPCBs Water Quality Monitoring locations on Ganga River Basin are given in the project proposal.

Besides above, the National River Conservation Directorate (NRCD) also operates a water quality monitoring network on River Ganga with the help of Universities/Research Institutions. Between NRCD's and CPCB's WQMN, there are 21 common stations. In all, 98 stations are operated exclusively by NRCD and CPCB operates 36 independent stations. The combined list of 134 (CPCB + NRCD) stations is also listed in the project proposal. Out of these, 30 would be in the proposed real time monitoring stations to meet the requirement of quality check with real time data.

1.2 DESIGN PARAMETERS

The proposal includes setting up of an initial real time water quality monitoring network consisting of 113 stations at critical locations along the river. These stations will include, upstream and downstream of major urban areas, on major tributaries upstream of the confluence with the Ganga, in major nallas, downstream of industrial areas, at intakes of drinking water treatment plants, at important bathing ghats will be set up under the NGRBA project. In addition, 6 stations are proposed in the downstream of existing / proposed Sewerage Treatment Plants (STPs) depending up on the importance for such monitoring.

The list of the real time stations is shown in the project proposal indicating the latitude and longitude of the respective location. The actual positioning of the stations shall be arrived based on pin-pointing of the space and arrangements for security and in consultations with the local authorities.

Establishment of all the real time stations for continuously WQ monitoring is proposed at critical locations where bio-monitoring will also be conducted on monthly basis on first year and on quarterly basis for the remaining years. This is designed for the purpose of "calibration" with physico-chemical based WQM system so as to come up with a protocol for Ganga as well as at the national level.

Community supported water quality monitoring has been proposed in remote areas where WQ monitoring on a regular basis is difficult. This is also aimed to develop a sense of civic responsibility for the protection of the river, and such arrangement could also be potentially used to provide early warning for water quality threats. The data generated through community monitoring will be used for non-regulatory purposes, specifically to create awareness in communities on conservation of the environment, water resource management and the impact of the environment on their own health. Implementation and operation of the community monitoring proposal will be carried out by the proposed NGRBA Cell of the CPCB, as detailed in the project proposal.

1.3 IMPLEMENTATION PERIOD

The implementation period is 7 (Seven) years. The project will commence immediately from the date of sanction; whereas, output of the project will be visible after 24 (twenty-four) months (in terms of generation of data).

1.4 SCOPE OF PROPOSED WORKS

The major scope of works includes:

- Ambient Water Quality Monitoring (automatic and manual methods; quality assurance) at upstream and downstream of major urban areas and investments, along main stem and in major tributaries and at sensitive locations
- Bio-monitoring at all the real time monitoring locations
- Community Monitoring

1.5 COST ESTIMATE

The total estimated cost of the Project Rs. 94.45 crores as per the abstract of cost provided in annexure - II.

1.6 FUNDING PATTERN

The Central Govt. will bear 100% of the project cost and the fund would be allotted to CPCB on regular basis as per the guidelines laid down in the NGRBA programme framework.

2.0 WORK PROGRAMME SCHEDULE

- (a) The project proposal has been scrutinized by the NMCG in consultations with the CPCB.
- (b) The implementation schedule of the project is given in the Volume – I of the project proposal.
- (c) The activity of the project to be implemented by Central Pollution Control Board.
- (d) The benefits of the WQM system are expected to be visible after the commissioning of stations.
- (e) No dislocation of human settlement is required and no land acquisition is required as the project is proposed to be based upon monitoring and surveillance of water quality located on the wetted (hydraulic) perimeter of the river. However, selected locations on the cross drainage structures such as Bridge, Barrage etc. are to be used for installation of the stations with prior consultations with the respective authorities.

3.0 DISASTER MANAGEMENT

The project does not involve any activity, which requires any disaster management programme to be formulated as the activities would be of monitoring and surveillance in nature.

4.0 EXPENDITURE INVOLVED

- (a) The year wise budget estimation and the fund requirement are detailed in the proposal.
- (b) The expenditure will be incurred out of the CCEA approved World Bank assisted NGRB Project for Rs. 7000 crores.
- (c) There is no foreign exchange component in the cost estimate. However, the expenditure will be subject to the provisions made in the procurement manual of the NGRBA programme framework.
- (d) All the rates considered in the estimates for real time monitoring network based on the experience available with CPCB for establishing 10 real time stations on another project of Hydrology and for bio-monitoring based on the standard rates and norms being followed / notified by CPCB.

- (e) The project proposal is proposed to be taken up against the approved outlay of NGRBA in the XI Plan and the subsequent XII Plan period.

5.0 RELIABILITY OF COST ESTIMATES AND OTHER PARAMETERS

- 5.1 The cost estimates and the other parameters have been carried out by Central Pollution Control Board, an autonomous and statutory body constituted by an enactment in the Parliament and the responsible for maintenance of wholesomeness of National Aquatic Resources. Thus, the cost estimation and other parameters are reliable.
- 5.2 The cost estimates are based on the approved cost of other similar project and experience available with CPCB for real time monitoring and also based on the latest Schedule of Rates in regard to other components of the proposal.

6.0 OPERATIONAL CAPABILITY

Central Pollution Control Board has been constituted by under the Water (Prevention and Control of Pollution) Act, 1974 and entrusted with the function of the Air (Prevention and Control of Pollution) Act, 1981 as well. CPCB has also been delegated the functions and powers under Environmental (Protection) Act, 1986. The over a period of last 35 years CPCB has developed infrastructure and human resource to meet the challenges of Environment Protection, which comprises of sophisticated laboratories and qualified and trained man power to support activity being undertaken for pollution control assessment, monitoring and control.

7.0 VIABILITY

- 7.1 The benefits accruable from the project cannot be quantified in physical terms. However, the principal objective of the project is to maintain a continuous, real-time, water-quality network that will facilitate the control of pollution and to restore water quality and ecology of River Ganga.
- 7.2 The project will have beneficial impacts in terms of reduction of pollution load in River Ganga in the region with incidental benefits like improved health, improved irrigation facilities and social up gradation of the region.

8.0 REVIEW OF PROJECT

For review of the implementation of the WQM projects, the National Mission for Clean Ganga (NMCG) has been set up as per the provisions made in the NGRBA programme framework. The personnel of the NMCG to visit the sites and review

meetings are to be held by senior personnel of NMCG with the officials of NGRBA Cell of CPCB for the purpose.

9.0 POINTS FOR DECISION AND / OR SANCTION

The Empowered Steering Committee is requested to consider for approval the proposal of "Water Quality Monitoring System for River Ganga" under the centrally sponsored scheme of National Ganga River Basin Authority (NGRBA) at an estimated cost of Rs. 94.45 crores. The project cost will be fully (i.e. 100%) met by the Govt. of India out of the institutional development component of Rs. 600 crores of the CCEA approved project.

Central Pollution Control Board, the executing agency shall ensure that

- (i) Monitoring is conducted at all the identified locations on river Ganga, and its tributaries and rivulets.
- (ii) Organizational preparedness is achieved for implementation of the project, including opening a child account for financial management of the project.
- (iii) The assessment and monitoring during implementation of the project is carried out based upon the best available technology with minimum cost. However, the choice of technology for monitoring shall be left open during the tendering process.
- (iv) The project driven employment / engagement of consultants is restricted purely for the project implementation till the project period and will not guarantee any employment by the Government.
- (v) Involvement of the CPCB officials, other than the identified project staffs, as indicated in the project proposal is governed by the Financial Management Manual of the NGRBA programme framework for reimbursements.
- (vi) The detailed design and engineering of the project is undertaken by CPCB based on extensive survey and investigation before executing the activity, so as to ensure that there is no overlapping between the components of the project proposal and any other project to fulfill the mandate of the CPCB.
- (vii) Optimal utilization of the assets relating to the project under Ganga Action Plan or any other Central / State Plan is ensured by CPCB.

List of the Locations of the Real Time Monitoring Stations

No.	Site	Latitude	Longitude	Proposed Station Type			Cross-sections	Comments
				I	II	III		
		Decimal Degrees						
Uttarakhand								
UK1	Alaknanda After confluence Mandakini DS Rudhaprag	30.117142°	78.586500°		1			Baseline
UK2	Bhagirathi River before confluence with Alaknanda	30.147058°	78.597639°		1			Baseline
UK3	Alaknanda before confluence Bhagirathi River	30.144475°	78.600994°		1			Baseline
UK4	US Rishikesh Luxmanjula	30.126233°	78.330364°		1			Baseline
UK5	Barrage at Rishikesh	30.074644°	78.287981°	1				Impact
UK6	Haridwar Barrage	29.958853°	78.178603°	1				Impact
UK7	Bridge DS Harkipodi	29.947369°	78.162203°	1				Impact d/s Mass bathing location
UK8	Hardwar Nallah					1		Nallah
Uttar Pradesh								
UP1	Barawali Railway & Road Bridge	29.638106°	78.104861°		1		X	Baseline – entry into UP
UP2	Madhya Ganga barrage	29.373742°	78.034903°		1			Baseline
UP3	Sukartal Ghat @ Solani River	29.460700°	78.005922°		1			Impact - Bathing Ghat/Cremation Grounds
UP4	Braj Ghat Road Bridge NH 24 Gharmukteshwar	28.760817°	78.143878°	1				Impact – Mass Bathing, Cremation
UP5	Agricultural Drain below Braj Ghat	28.695658°	78.184722°		1			Trend
UP6	Bridge at Anupshahr	28.355869°	78.272261°		1			Trend
UP7	Bridge Upstream of Narora	28.246708°	78.368286°		1			Trend
UP8	Barrage at Narora (Ganga)	28.190361°	78.395344°		1			Baseline - Water intake for Narora
UP9	Kachla Ghat Bridge Badaun	27.931056°	78.855289°		1			Trend
UP10	Ramganga (d/s of Moradabad)	28.807991°	78.805754°	1				Impact of Kashipur and Moradabad (incl. paper mills – color also important)
UP11	Ramganga @ SH29	27.497386°	79.696111°	1				Impact of industries d/s of Moradabad (incl. distilleries, pulp and paper – color also important)
UP12	Bridge on Garra River	27.184275°	79.917731°	1				Impact
UP13	Bridge on Kali River at Kanpur-Farrukhabad Road	27.108614°	79.883556°	1				Impact of Kali on Ganges

No.	Site	Latitude	Longitude	Proposed Station Type			Cross-sections	Comments
				I	II	III		
		Decimal Degrees						
								(incl. distillery, paper, rayon slaughterhouses, etc.) – color also important
UP14	Bridge at Ghatia Ghat Farrukabad	27.398842°	79.627522°	1				Baseline for Kannauj
UP15	Nalla at Kannauj 1	27.076156°	79.926283°			1		Impact on Kali
UP16	Bridge SH21 DS of Kannauj	27.011192°	79.986550°	1				Impact of Kannauj
UP17	Bridge SH40 DS Kannauj	26.882208°	80.100794°	1			X	Impact of Kannauj
UP18	Bridge in Bithur	26.611022°	80.276426°	1				Impact – Bathing Ghats at Bithur
UP19	Barrage US Kanpur	26.508053°	80.316572°	1				Baseline-Kanpur
UP20	Nalla at Kanpur1	26.504533°	80.319664°			1		Impact – Kanpur
UP21	Sisamau nala	26.502408°	80.324617°			1		Impact – Kanpur
UP22	Nalla at Kanpur 3	26.492853°	80.331078°			1		Impact – Kanpur
UP23	Nalla at Kanpur 4	26.491350°	80.333169°			1		Impact – Kanpur
UP24	US Bathing Ghat Kanpur	26.479831°	80.357656°	1			X	Impact – Kanpur Bathing
UP25	Nalla at Kanpur 5	26.471328°	80.369172°			1		Impact
UP26	Bridge at Kanpur 1	26.469186°	80.372639°	1				Trend
UP27	Nalla at Kanpur 6	26.443864°	80.393806°			1		Impact
UP28	Nalla at Kanpur 7	26.436678°	80.403381°			1		Impact
UP29	Bridge 2 at Kanpur NH25	26.434742°	80.408856°	1				Trend
UP30	Nalla at Kanpur 8	26.417658°	80.426167°			1		Impact
UP31	Nalla at kanpur 9	26.399781°	80.457231°			1		Impact
UP32	Bridge near Fatepur	26.054611°	80.909486°		1			Baseline for Fatepur (also d/s of Kanpur)
UP33	Bridge on Yamuna MDR 26B (near Rajapur)	25.393066°	81.151746°		1			Baseline for Yamuna
UP34	Nalla on Yamuna in Allahabad 1	25.419722°	81.821958°			1		Impact
UP35	Nalla on Yamuna in Allahabad 2	25.420417°	81.824847°			1		Impact
UP36	Nalla in Yamuna in Allahabad 3	25.420819°	81.829364°			1		Impact
UP37	Nalla in Yamuna in Allahabad 4	25.425444°	81.837844°			1		Impact
UP38	Bridge on Yamuna NH 27	25.426822°	81.861286°	1				Last station in Yamuna before confluence w Ganga
UP39	Bridge on tributary near Panasa	25.268708°	82.045844°		1			Tributary

No.	Site	Latitude	Longitude	Proposed Station Type			Cross-sections	Comments
				I	II	III		
		Decimal Degrees						
UP40	Bridge DS of tributary near Sirsa	25.269219°	82.092717°	1				Ganga site (d/s of Allahabad)
UP41	Bridge on Allahabad Bypass	25.585389°	81.543019°	1				Baseline - Allahabad
UP42	Nalla at Allahabad 1	25.501828°	81.853981°			1		Impact
UP43	Nalla at Allahabad 2	25.501939°	81.860753°			1		Impact
UP44	Bridge Lord Curzon Allahabad Right	25.505100°	81.865911°		1			Trend
UP45	Nalla at Allahabad 3	25.483819°	81.879456°			1		Impact
UP46	Nalla at Allahabad 4	25.456678°	81.881064°			1		Impact
UP47	Bridge on NH2 right	25.436322°	81.889781°	1				Trend
UP48	Bridge Near Kewataveer Village	25.201836°	82.674597°		1			Trend
UP49	Bridge SH 74 US Varanasi	25.129914°	82.874953°	1				Baseline for Varnasi
UP50	Bridge SH98 at Varanasi	25.255678°	83.027736°		1			Trend
UP51	Bridge at Ramnagar Road near Varanasi	25.272167°	83.020542°		1			Trend
UP52	Nalla at Varanasi 1	25.282939°	83.006872°			1		Impact
UP53	Bridge NH2 at Varanasi	25.322272°	83.034483°	1				Trend
UP54	Varanasi at Bathing Ghat 1	25.306219°	83.010897°	1			X	Impact – Bathing Ghat
UP55	Bridge on Tributary in Varanasi	25.333931°	83.036142°		1			Impact
UP56	Tributary @ Rajwari	25.509825°	83.135031°		1			Impact
UP57	Bridge NH 97 at Ghazipur DS	25.586733°	83.605750°	1				Impact of Ghazipur (incl. opium factory, slaughterhouse etc.)
Bihar								
Bh1	Nalla at Buxar 2 SH13	25.570250°	83.969297°			1		Impact
Bh2	Nalla at Buxar 1	25.582733°	83.986031°			1		Impact
Bh3	Bridge at Buxar (on Ganga)	25.592294°	83.984608°	1				Baseline – Ganga into Bihar
Bh4	Bridge on Ghagra near Manjhi	25.822952°	84.579596°		1			Impact
Bh5	Bridge near Danapur Patna 2	25.655633°	85.047408°	1				Baseline Patna
Bh6	Nalla in Danapur Patna 1	25.637375°	85.044508°			1		Impact
Bh7	Nalla in Patna 2	25.647414°	85.080067°			1		Impact
Bh8	Bridge near Hajipur in Tributary	25.692678°	85.194731°			1		Impact
Bh9	Rajapur Nalla	25.623461°	85.140108°			1		Impact
Bh10	Nalla in Patna 3a	25.641686°	85.105233°			1		Impact to Rajapur Nallah
Bh11	Nalla in Patna 3b	25.639689°	85.109914°			1		Impact to Rajapur Nallah
Bh12	Bridge Mahatma Gandhi right	25.615590°	85.203766°	1			X	Impact – d/s of Patna
Bh13	Bararighat Bhagalpur	25.275992°	87.027022°	1				Baseline – final Bihar Stn.

No.	Site	Latitude	Longitude	Proposed Station Type			Cross-sections	Comments
				I	II	III		
		Decimal Degrees						
West Bengal								
WB1	Farakka Barrage	24.801736°	87.922002°	1				Baseline – Ganga into West Bengal
WB2	Farakka STPS	24.759521°	87.907768°		1			Impact
WB3	Ganga R d/s of FTFS Farakka	24.727377°	87.911866°	1				Impact - Farakka
WB4	Ganga u/s of outlet to natural river	24.540796°	88.032904°	1				Trend
WB5	1 River u/s of Ganga - Nallah	24.505353°	88.030081°			1		Impact
WB6	2 River u/s Ganga - Nallah	24.482371°	88.055535°			1		Impact
WB7	Ganga R @ Raghunathganj	24.460066°	88.070149°	1				Trend
WB8	Ganga R u/s of Azimganj	24.346087°	88.202757°		1			Trend
WB9	Ganga R u/s of Jiaganj	24.208339°	88.257804°		1			Trend
WB10	Ganga R d/s Murshidabad (u/s Berhampore)	24.100378°	88.244281°	1				Trend
WB11	Ganga R d/s of Murshidabad (d/s Berhampore)	24.061719°	88.227575°		1			Trend
WB12	4 River u/s Ganga - Nallah	23.738086°	88.181159°			1		Impact
WB13	Ganga R @ Katwa	23.649902°	88.137741°		1			Trend
WB14	Ganga R d/s of Nabadwip	23.386278°	88.365686°	1				Trend
WB15	Ganga R u/s of Tribeni	23.069457°	88.459004°		1			Trend
WB16	Ganga R @ transmission tower u/s of Tribeni	23.016444°	88.441305°	1				Trend
WB17	Ganga R @ Chinsura	22.906974°	88.404614°		1			Trend
WB18	Canal @ Champdani	22.804675°	88.334649°		1			Impact
WB19	Ganga River @ Palta Water Intake	22.785836°	88.339283°		1			Trend – water supply intake
WB20	Nalla @ Barrackpore	22.769531°	88.339212°			1		Impact
WB21	Ghat d/s of Srirampore	22.725772°	88.356118°		1			Impact – Bating Ghat
WB22	Nalla opposite Ghat d/s of Srirampore	22.726286°	88.364131°			1	X	Impact
WB23	Ganga R nr Belgharia	22.670951°	88.359732°		1			Impact
WB24	Nalla @ Ballykhal	22.655029°	88.347635°			1		Impact
WB25	Ganga R @ Bali Bridge	22.653188°	88.354413°	1				Impact
WB26	Nalla @ Chitpur	22.607483°	88.369767°			1		Impact
WB27	Ganga R @ Howrah Bridge	22.585092°	88.346954°	1				Baseline – u/s Kolkata
WB28	Ganga R @ Vidyasagar	22.558658°	88.325696°	1				Trend
WB29	Nalla @ Hastings	22.549589°	88.325066°			1		Impact
WB30	Nalla @ Shivpur	22.558416°	88.277595°			1		Impact
WB31	Ganga R @ Bata Nagar	22.516251°	88.219365°	1			X	Trend
WB32	Ganga R nr Uluberia	22.270497°	88.075837°	1			X	Impact – d/s Kolkata
WB33	Rupnarayana @ Kolaghat	22.438166°	87.884283°		1			Trend
WB34	Ganga R @ Diamond Harbor	22.178654°	88.193873°		1			Trend
WB35	Ganga R near Haldia	22.027976°	88.096164°		1			Final station for Ganga
Additional Stations to be determined (for NGRBA-financed STP performance monitoring)								

No.	Site	Latitude	Longitude	Proposed Station Type			Cross-sections	Comments
				I	II	III		
		Decimal Degrees						
XX1	Downstream of STP 1							
XX2	Downstream of STP 2							
XX3	Downstream of STP 3							
XX4	Downstream of STP 4							
XX5	Downstream of STP 5							
XX6	Downstream of STP 6							
	TOTAL STATIONS113 + 6 STP 's)			35	79		8	

Summary of the cost estimation

Main budget head	Rs. in Crores
A. Consultancy	
Quality assurance system for real time water quality monitoring system	9.80
Biomonitoring	4.57
Sub -Total	14.37
B. Goods	
Field water quality monitoring kits	2.10
Sub -Total	2.10
C. Services	
Real time monitoring system	63.00
Sub -Total	63.00
D. Operating Cost	
Project operating cost	13.72
Sub -Total	13.72
E. Training	
Community Monitoring	1.26
Sub -Total	1.26
Total	94.45
(Rupees ninety four crores forty five lakhs) only	