Interception, Diversion of Drains & Sewage Treatment Works at Farrukhabad-Fatehgarh, Uttar Pradesh

National Mission for Clean Ganga (NMCG)
Ministry of Water Resources, River Development & Ganga Rejuvenation (Government of India)
**SALIENT FEATURES OF THE PROJECT**

<table>
<thead>
<tr>
<th>Name of the Proposal</th>
<th>Interception, Diversion of Drains &amp; Sewage Treatment Works at Farrukhabad-Fatehgarh in Uttar Pradesh Under Namami Gange Program.</th>
</tr>
</thead>
</table>
| Estimated Cost:      | Total Cost - ₹ 23734.23 Lakhs  
                        Capital Cost - ₹ 10734.23 Lakhs  
                        O&M Cost* - ₹ 13000.00 Lakhs  
                        (*15 years of I & D works and STP works) |
| Central Government Share | ₹ 25995.63 Lakhs (100%) |
| State Government Share | -- |
| Major Components:    | 1. Drain Tapping - 3 Nos.  
                        [Pakkapul Drain, Tokaghat Drain and Bhairo Ghat Drain at Farrukhabad]  
                        2. Interceptor Trunk Sewer 250 - 1200 mm dia. – 5.76 Km  
                        3. Sewage Treatment Plant – 2 No (28 MLD + 05 MLD)  
                        4. Sewage Treatment Plant (Constructed Wetland) – 1 No. (02 MLD at bargadiya Drain, Fatehgarh)  
                        5. New Main Sewage Pumping Station – 1 No.  
                        7. Rising Mains (700 + 400 mm dia.) – 30 + 200 m  
                        8. Treated Effluent Channel (1.5 m X 1.2 m) – 1500 m  
                        9. Operation & Maintenance - 15 years for I/ D and STP works |
| Executing Agency      | Uttar Pradesh Jal Nigam |
| DPR Prepared by       | Project Manager, Ganga Pollution Prevention Unit (GPPU), Uttar Pradesh Jal Nigam |
| Third Party Appraisal by | Jamia Millia Islamia |
| Bidding Process       | Bidding will be done on Hybrid Annuity based PPP model and technology option shall remain open for bidders |
| Completion Period     | 24 Months including bidding period |
## Checklist for the project

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Indicate Y or N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whether proposal has been prepared in the prescribed EC format.</td>
<td>Yes</td>
</tr>
<tr>
<td>Whether an Executive Summary has been attached.</td>
<td>Yes</td>
</tr>
<tr>
<td>Whether financial concurrence of ED (Finance) has been attached with EC Memo.</td>
<td>Concurrence of ED (F) has been taken in file</td>
</tr>
<tr>
<td>Whether feasibility report, if any, has been appended with the EC memo.</td>
<td>Yes, CA &amp; FS Report has been prepared by EIL</td>
</tr>
<tr>
<td>Whether third party appraisal has been done or not?</td>
<td>Yes, Jamia Millia Islamia has done the third party appraisal.</td>
</tr>
<tr>
<td>Whether mandatory clearances/approvals have been obtained.</td>
<td>As and when required clearance will be taken</td>
</tr>
<tr>
<td>Whether necessary discussion held with the State Governments/SPMGs/ULBs/local communities etc.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

UPSGRCA, Lucknow has submitted DPR for project on “I/ D of Drains and Sewage Treatment Plant works at Farrukhabad – Fatehgarh” under Namami Gange Programme vide Letter no. 568/SGRCA/0032/84 dated 10.07.2017. Situated on the right bank of River Ganga, Farrukhabad is one among the most ancient places of India having reasonable archeological and cultural heritage. The longitude & latitudes are 26°46'0"N to 27°43'0"N & 79°7'0"E to 80°2'0"E respectively. The township of Farrukhabad, Fatehgarh consist of two towns, Farrukhabad & Fatehgarh, the former being the headquarter of the Tehsil & the latter forming the headquarters of the District, both lying about 5 Km apart. Rivers Ganga & Ramganga are located towards the east & Kali Nadi towards the south.

The twin cities of Farrukhabad and Fatehgarh have piped water supply since 1954. The water supply system of the both cities has been augmented under UIDSSMT, at the water supply rate of 135 lpcd. The cities have no sewerage system. Only 25 to 35% households have in house facility of toilets connected to septic tanks/soak pits. Another about 10 to 15% households have in house facility connected directly to open drains. Remaining about 50 to 65% households prefer to defecate in open areas.

There are seven main drains at Farrukhabad carrying waste water. The waste water of B B Ganj nala flowing parallel to Farrukhabad Shamsabad road is used in forest farming and does not contribute to pollution of the river Ganga and thus not considered in the instant proposal. Two drains namely Bhairoghat (including subdrains namely tokanala, pakkapul nala chapai nala, Amethikona nala) and Dheemarpur drains discharge directly into River Ganga. The Pakkapul and Tokaghat (including Chapai nala) drains merges to Bhairoghat drain which thereafter merges with Amethikona drain before confluence with river Ganga. The tokaghat drain (after culvert near dalhassahib Mazar), Pakkapul drain (after culvert near road to Kashiram colony) are kachha drains in agricultural field below HFL with no defined channel. The farmers also use this sewage for agricultural activities when ever needed and thus the flow to river Ganga from these drains, through bhairoghat and amethikona drains, varies significantly. At Fatehgarh Cantt area, Bargadiya ghat and Hathikhana drains pollute the river directly. Some work like tapping of Cantt area nala and Hathikhana nala were tapped and diverted to a 2.7MLD capacity STP under works executed in GAP-1 from 1990 to 1992.

The 2011 census population of both the towns of Farrukhabad and Fatehgarh is 276581. Population Projection is calculated as 330600 for base year (2020), 420600 for mid year (2035) and 510600 for design year (2050).

The DPR estimates sewage generation of approximately 35.70 MLD (2020-base year), 45.43 MLD (mid-year 2035) and 55.15 MLD (design year 2050) based on population projections and water supply considered at 135 lpcd (in view of water supply for population above 1 Lakh) for Farrukhabad-Fatehgarh.

The DPR proposes to intercept Pakkapul drain, Tokaghat drain, Amethikona drain and divert these through gravity sewer to Bhairo Ghat MPS. Dheemarpur drain (through gully pits) shall also be conveyed by gravity to Bhairoghat MPS. The sewage of these drains will be treated at 28 MLD STP at at site near Bhairoghat, Farrukhabad. Further, the Bargadiya Drain (2 MLD) is proposed to be treated through constructed wetland. Cantt. Area drain (already tapped) & Hathikhana drain (already tapped) and divert to existing Hathikhana MPS. The sewage from these drains will be treated through existing STP of 2.7 MLD and a new STP proposed of 5 MLD at Hathikhana, Fatehgarh. The BB Ganj nala is not proposed to be intercepted / treated as the wastewaster is discharged to the forest land and does not reach river Ganga. Therefore a total of 35 MLD additional capacity STP is proposed to be created for Farrukhabad-Fatehgarh.

The estimated cost of the proposed project is ₹ 23734.23 Lakhs (Capital cost ₹ 10734.23 Lakhs and O & M cost for 15 years ₹ 13000.00 Lakhs). The project cost will be 100% shared by Central Government of India.
Memorandum for Executive Committee on the proposal of “Interception, Diversion of Drains & Sewage Treatment Works at Farrukhabad-Fatehgarh” in Uttar Pradesh State under Namami Gange

1. Proposal identification

1.1 Title of the proposal.

“Interception, Diversion of Drains & Sewage Treatment Works at Farrukhabad-Fatehgarh” in Uttar Pradesh State under Namami Gange.

1.2 Name of the sponsoring agency (Ministry/ Department/ Autonomous Body/ Central PSE).


1.3 Proposed duration of the proposal/ Scheme.

24 months including tendering/ bidding period. Post commissioning, the project will be provided 15 years O & M support for I/ D and STP Works.

1.4 Total cost of the proposal over the proposed duration.

The estimated cost of the project proposal is ₹ 23734.23 Lakhs (Rupees Twenty Three Thousand Seven Hundred Thirty Four Lakhs and Twenty Three Thousand only).

1.5 Nature of scheme: Central Sector/ Centrally Sponsored/Additonal Central Assistance

Central Sector Scheme.

2. Justification of Proposal

2.1 The justification for taking up new/ continuing the ongoing proposal may be provided in terms of:

The cities have no sewerage system. Only 25 to 35% households have in house facility of toilets connected to septic tanks/ soak pits. Another about 10 to 15% households have in house facility connected directly to open drains. Remaining about 50 to 65% households prefer to defecate in open areas.

The instant proposal is considered necessary to avoid the discharge of untreated sewage into River Ganga directly. The proposal has been framed from the perspective of pollution abatement of the River Ganga and to improve the river water quality.
2.2 The alternatives that have been considered before firming up the design of the proposal may be stated. (This should also include alternate modes of proposal delivery, e.g. outsourcing, PPP, etc. that have been considered).

This project pertains to Interception, Diversion of drains and its treatment through Sewage Treatment Plant. The design proposal in the DPR has been finalized after considering various alternative paths for interceptor network and possible sites for STP and pumping stations and considering the limitations in respect of availability of the required land parcels.

The project upon sanction will be awarded on lowest life cycle cost– technology neutral basis on Hybrid Annuity based PPP model.

2.3 Please state whether the proposal has objectives and coverage which overlap with projects/ schemes being implemented by the same or another agency (Ministry/ Department/ State government). In cases of overlap, please state why the proposal needs to be considered as a separate stand-alone effort.

There are no other schemes those are overlapping with the objectives of this project, in other Ministries of the Central Government or the Departments in the State Government of Uttar Pradesh.

3. Proposal Objectives and targets

3.1 The objectives of the proposal may be mentioned. These objectives should flow from the proposal justification.

The principal objective of the project is to improve the water quality of River Ganga by avoiding the discharge of untreated sewage from drain into river. The objective is proposed to be achieved through the following major activities envisaged under the project-

1. Drain Tapping - 3 Nos.
   [Pakkapul Drain, Tokaghat Drain and Bhairo Ghat Drain at Farrukhabad]
2. Interceptor Trunk Sewer 250 - 1200 mm dia. – 5.76 Km
3. Sewage Treatment Plant – 2 No (28 MLD + 05 MLD)
4. Sewage Treatment Plant (Constructed Wetland) – 1 No. (02 MLD at bargadiya Drain, Fatehgarh)
5. New Main Sewage Pumping Station – 1 No.
7. Rising Mains (700 + 400 mm dia.) – 30 + 200 m
8. Treated Effluent Channel (1.5 m X 1.2 m) – 1500 m

Operation & Maintenance - 15 years for I/ D and STP works

3.2 The specific targets proposed to be achieved of the proposal may be mentioned. These targets should be necessarily measurable. These should also be monitorable, against baseline data. The baseline may be indicated. The targets should be in tabular form as shown below.

The project proposes the following specific targets to be achieved through implementation of this project:
1. Interception and diversion of 4 drains (including Bargadiya Drain for Wetland Treatment) discharging directly into River Ganga.

2. Parameters for treated effluent as per applicable standards. For monitoring of project targets, river characteristics shall be measured before and after completion of project.

3. Project completion: 24 months from approval of project.

3.3 The outcomes of the proposal to be achieved should be indicated. These outcomes should be in the form of measurable indicators which can evaluate the proposal on quarterly/half yearly/annual/plan basis.

The expected project outcome is the reduction of pollution load from Farrukhabad-Fatehgarh town into River Ganga along with the improvement in bio-diversity and eco-system of the river. Following benefits are likely to be achieved:

a) Improvement in sewage collection system in sub project area.

b) Prevention of storm drains carrying sanitary sullage or dry weather flow.

c) Prevention of discharge of untreated sewage into Ganga.

d) Improvement in water quality of River Ganga, a national resource.

e) Improvement in environmental sanitation health and reduction in associated health hazards within the city.

f) Improvement in quality of life, human dignity and increased productivity.

The outcome indicated above will be achieved only on completion of the project and its monitoring during the implementation phase may not be feasible. However the project physical progress may be measured against the targets/ physical outputs indicated.

3.4 Briefly explain the objectives of the other programmes/projects undertaken by Ministry/Dept which are in convergence with the objectives of proposed proposal.

The present proposal is under “Namami Gange” Scheme. This scheme along with other ongoing schemes namely World Bank (EAP) and National River Conservation Plan aimed at improving water quality of River Ganga & its tributaries in the Ganga basin, are being converged and brought under the umbrella programme “Namami Gange: Integrated Ganga Conservation Mission”.

4. Proposal design

4.1 Briefly explain the proposal Design. This should include all components of the proposal including:

i. Scope of the project
ii. Assumptions used

1. Interception and Diversion works – Designed for 30 years
2. Sewage Treatment Plant – 2 No (28 MLD + 05 MLD)
3. Sewage Treatment Plant (Constructed Wetland) – 1 No. (02 MLD at bargadiya Drain, Fatehgarh)
4. New Main Sewage Pumping Station – 1 No.
5. Renovation of Old Sewage Pumping Station – 2 Nos.
6. Rising Mains (700 + 400 mm dia.) – 30 + 200 m
7. Treated Effluent Channel (1.5 m X 1.2 m) – 1500 m

<table>
<thead>
<tr>
<th>Projected Population (Farrukhabad-Fatehgarh)</th>
<th>Projected Sewage Flow discharging into River Ganga* (Farrukhabad-Fatehgarh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>2035</td>
</tr>
<tr>
<td>330600</td>
<td>420600</td>
</tr>
</tbody>
</table>

(*Note: Sewage generated for the Bibiganj Drain Catchment Area has not been considered as it does not flow into River Ganga)

STP capacity has been decided in consideration of population projections and water supply based estimates.

iii. Technology

The project does not propose any specific technology. The project on sanction will be awarded on lowest life cycle cost – technology neutral basis in accordance with NGRBA framework/NMCG guidelines.

iv. Size/Specifications/Layout Plan

The layout drawing is enclosed at Annexure – I.

v. Plant & Machinery

As part of plant & machinery, the project will have One Main Pumping Station, renovation of 2 existing Intermediate Pumping Stations and Two Sewage Treatment Plants of 28 MLD and 5 MLD capacity. One Sewage Treatment Plant of 02 MLD capacity (based on Constructed Wetland Technology). The project will be tendered on lowest life cycle cost – technology neutral basis.

vi. Others (Please specify)

The components of the project should be carved out from the Feasibility Report/Project report. The study/investigations on which project parameters are based should be clearly indicated.
The Condition Assessment & Feasibility Study of the town was done by EIL and its observations and findings have been discussed and considered while finalizing the DPR.

4.2 In case the proposal is specific to any location, area and segment of population please state the basis for selection. Details regarding special physical features, technology, etc., may be given.

N.A.

4.3 Please indicate whether the proposal is secured against natural/ man-made disasters like floods, cyclones, earthquakes, tsunamis, etc. If the proposal involves creation/ modification of structural and engineering assets or change in land use plans, disaster management concerns should be assessed.

Farrukhabad town is situated in seismic zone – III. This proposal has been prepared considering seismic zone-III and the guidelines of NDMA. The executing agency shall be asked to comply with the guidelines of NDMA while implementing the project.

4.4 In case of beneficiary oriented proposal, the mechanism for identification of the beneficiary and the linkage of beneficiary identification with UID numbers, on a voluntary / non-mandatory basis, may be indicated.

The scheme does not envisage support to individual beneficiaries but to serve the community in and around Farrukhabad-Fatehgarh by reducing the pollution load falling into River Ganga leading to improved river water quality, besides improving the bio-diversity and eco-system of the river indirectly.

4.5 Wherever possible, the mode of delivery should involve the Panchayati Raj Institutions and Urban Local Bodies. Where this is intended, the preparedness and the ability of the Panchayats for executing the proposal may be indicated. If exceptions are to be made, the reasons may be explained.

The DPR has been prepared by Uttar Pradesh Jal Nigam under consultation with concerned ULB (Farrukhabad Nagar Palika Parishad). UPJN will execute the project. UPJN is technically capable for execution of this project and have been identified by the State as the executing agency. Further, UPJN is engaged in similar works and have already completed works of similar nature.

4.6 Whether the land required for the proposal is in possession of the agency. In case the proposal involves land acquisition or environmental clearances, the specific requirements and the status in this regard may be indicated.

The land for MPS and STP has to be purchased in Farrukhabad while the land for STP at Hathikhana, Fatehgarh is available in Farrukhabad Nagar Palika Parishad and will be transferred to Executing Agency post sanctioning of the project.

4.7 The legacy arrangements after the scheduled proposal duration may be mentioned. In case the proposal creates assets, arrangements for their maintenance and upkeep may be stated. (For example the proposal assets may be taken over and maintained by the State Government/ PRIs, ULBs).
Operation & Maintenance of the assets created under the scheme will be undertaken by the Hybrid Annuity based PPP mode contractor 15 years for I/D and STP post commissioning under the supervision of the State Government. After the contract period the assets will be transferred to the Palika Parishad (Farrukhabad)/ State and will be responsible of its Operation & Maintenance.

4.8 Please indicate:

- Inter-linkages with other schemes mainly in terms of coverage, impact, outcomes, etc.
  
  N.A.

- Steps taken towards convergence with other schemes to achieve the intended outcomes may also be stated.
  
  N.A.

- Steps taken towards convergence in flow of funds from other schemes.
  
  N.A.

5. Proposal Cost

5.1 Please provide the proposal cost estimate for its scheduled duration along with a break-up of year-wise, component-wise expenses segregated into non-recurring and recurring expenses.

The project cost estimate of the proposal component-wise is as follows:

<table>
<thead>
<tr>
<th>SN</th>
<th>Items</th>
<th>Estimated Cost ₹ in Lakhs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Items on which centage is admissible</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Interception of drains</td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>Pakkapul Nala at Farrukhabad</td>
<td>96.33</td>
</tr>
<tr>
<td>ii</td>
<td>Toka Ghat Nala at Farrukhabad</td>
<td>81.21</td>
</tr>
<tr>
<td>iii</td>
<td>Bhairo ghat Nala at Farrukhabad</td>
<td>60.27</td>
</tr>
<tr>
<td>2</td>
<td>Diversion Sewers, 5.76 Kms including manholes, dismentling and reinstatement of roads, shifting of utilities etc.</td>
<td>2763.6</td>
</tr>
<tr>
<td>3</td>
<td>Sewage Pumping Stations (SPS), including Civil works and E/M works</td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>MPS near Bhairoghat Temple</td>
<td>750</td>
</tr>
<tr>
<td>ii</td>
<td>Renovation of SPS at Cantt. Nala</td>
<td>150</td>
</tr>
<tr>
<td>iii</td>
<td>Renovation of MPS near Hathikhana Nala</td>
<td>275</td>
</tr>
<tr>
<td>4</td>
<td>Rising Mains 30 + 200 m (700 + 400 mm dia)</td>
<td>28.4</td>
</tr>
<tr>
<td>5</td>
<td>STPs , including campus development such as roads, drainage, water supply, sewerage, electrification, office cum lab, lab equipment, plantation, SCADA system etc.</td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>28 MLD, at Bhairoghat temple</td>
<td>3500</td>
</tr>
<tr>
<td>ii</td>
<td>7 MLD, at Hathikhana</td>
<td>700</td>
</tr>
<tr>
<td>iii</td>
<td>Construction of STP based on wet land at Bargadiya Nala</td>
<td>35</td>
</tr>
<tr>
<td>6</td>
<td>Treated effluent disposal 1500 m (1.50m x 1.20m)</td>
<td>144.5</td>
</tr>
<tr>
<td>7</td>
<td>Boundary Wall and gate</td>
<td>143.82</td>
</tr>
</tbody>
</table>

Sub Total (A) Basic Capital Cost 8728.13
The project is proposed to be taken up on hybrid annuity based PPP model which envisages only upto 40% of capital cost disbursement during project construction period and remaining to be paid in annuities along with O & M expenditure based on successful commissioning of the project and satisfactory performance. The disbursement schedule will be arrived later on development of the detailed RFP by the transaction advisor.

5.2 In case the land is to be acquired, the details of cost of land and cost of rehabilitation/resettlement may be provided.

1.6 Hactares of land is in possession of Executing agency. However 2.8 Hactares of additional land is required which is under the process of acquisition by Executing Agency.

5.3 Estimated expenditure on proposal administration (including expenses on consultants, monitoring, evaluation, IEC, etc.) may be separately indicated.

As a part of the project, a provision of ₹ 349.12 Lakhs for Project Preparation and ₹ 349.12 Lakhs for Project Supervision charges, Total ₹ 698.24 Lakhs has been kept in the cost estimate and in accordance with NGRBA framework/ NMCG guidelines.

5.4 The basis of these cost estimates along with the reference dates (it should not be more than six months old) for normative costing may be provided. Please indicate the firmness of the estimates, component wise, with the extent (+ / -) of the expected variation.

Detailed Project Report (DPR) for the project has been prepared by the UPJN and forwarded by the Government of Uttar Pradesh. The cost of works has been arrived at on the basis of the UPJN Schedule of Rates (2016-17) and the then prevailing market rates. The project proposal has been scrutinized in all its details by Jamia Millia Islamia, New Delhi the expert appraisal agency.

5.5 In case the proposal involves payout of subsidy, the year wise and component wise expected outgo, up to the last year of payout, may be indicated.

There is no involvement of subsidy.

5.6 In case the proposal intends to create capital assets, employ specialized manpower or involves other activities that necessitate a Recurring Cost of Capital Expenditure (RCCE) (e.g.,
maintenance and upkeep costs of assets, salary costs of manpower, etc.) over the lifetime of the asset, such expenditures, on an annual basis, may be indicated in the proposal.

Recurring Cost of Capital Expenditure (RCCE) i.e., Operation and Maintenance (O&M) cost of the assets created in this project is estimated to be ₹13000.00 Lakhs for initial 15 years for I/D and STP post commissioning and included in the project cost. The O & M cost thereafter will be borne by Govt. of Uttar Pradesh.

5.7 It may also be stated whether the agency which would be assigned this legacy responsibility has been consulted and has agreed to bear the continuing recurring expenditure. (e.g., the State governments may need to incur the maintenance and upkeep costs of assets created under Plan schemes).

Palika Parishad (Farrukhabad)/ State Government is the identified agency to whom the assets will be transferred post commissioning and mandatory initial 15 years Operation & Maintenance by selected concessionaire on Hybrid Annuity based PPP model. The O & M cost initial 15 years for I/D and STP shall be met by Govt. of India. Beyond that the O & M cost will be borne by the State Govt. An investment level agreement, in accordance with NGRBA framework/ NMCG guidelines, shall be executed between NPP, SPMG & EA on sanction of the project.

5.8 The cost towards salary/ fees/ emoluments of the proposal human resources as being proposed should be indicated (procedure for seeking approval for human resource requirements is detailed at para-9 below).

The provision towards project preparation and project supervision cost inbuilt in the project shall take care of the administrative cost for implementation of the project by UPJN. Thus, there is no additional requirement for seeking approval of the human resource requirements.

5.9 The costs that will be shared by the state governments/PRI/User Beneficiaries may be indicated.

The project will be implemented as central sector scheme on 100% funding by GOI. The land for the project will be provided by the State Government.

6. Proposal: Financing

6.1 Indicate the source of finance of project proposal i.e EAP, Non EAP or National Ganga Plan World Bank Assisted NGRB Project of Component ‘A’ of the Namami Gange program.

6.2 If there are gaps in the financing of the proposal, the sponsoring agency may indicate how such gaps in FYP as well as the Annual Plans will be addressed.

N.A.

6.3 If external sources are intended, the sponsoring agency may indicate whether such funds have been tied up. In case firm commitment is not available, alternative plans for arranging funds may be indicated.

N.A.
6.4 In case of partial allocation of funds for the proposal, then the components which may be removed/ reduced may be indicated.

N.A.

7. Proposal: Human Resources

7.1 In case posts (permanent or temporary) are intended to be created, a separate proposal may be sent on file to Personnel Division of Department of Expenditure. Such proposals may be sent only after the main proposal is recommended by the appropriate appraisal body (SFC, SFC, etc.).

No additional posts will be required and the existing structure will be utilized.

7.2 In case outsourcing of services or hiring of consultants is intended, brief details of the same may be indicated. It may also be certified that the relevant GFR provisions will be followed while engaging the agency/ consultant.

The daily supervision and monitoring of the project will be undertaken by the executing agency or as per direction of NMCG. Executing Agency will prepare and submit Progress Reports during construction and execution period for all components of the present proposal to SPMG/ NMCG.

7.3 In case additional manpower requirement, please indicate the phased requirement over the proposal timeline (i.e. year-wise break-up of the manpower requirement)

No additional manpower will be required in project implementation.

8. Proposal viability

8.1 In case of proposals which have identified stream of financial returns, the financial internal rate of return may be calculated. The hurdle rate is considered at 12%.

The benefits accruable from the project of river conservation cannot be quantified in physical terms. However, the principal objective of the project is to improve the water quality of the River Ganga at Farrukhabad-Fatehgarh. The implementation of the works proposed will result in improvement of water quality of River Ganga in its stretch of Farrukhabad-Fatehgarh by reducing the pollution load into the river.

8.2 In case of proposals where financial returns are not readily quantifiable (typically social development proposals), the measurable benefits/ outcomes may be indicated.

As indicated in Para 8.1 above.

The expected project outcome is the reduction of pollution load from Farrukhabad-Fatehgarh towns into River Ganga along with the improvement in bio-diversity and eco-system of the river. The project will also facilitate progressive improvement of water quality in the Ganga River in shortest possible time frame.

The outcome indicated above will be achieved only on completion of the project and its monitoring during the implementation phase may not be feasible. However the project physical progress may be measured against the targets/ physical outputs indicated.
9. Proposal implementation and monitoring

9.1 Implementing agency (s) may be indicated.

State Project Management Group (SPMG) is the State Nodal Monitoring Agency for the project. The implementing agency for the project is Uttar Pradesh Jal Nigam.

9.2 The administrative structure for implementing the proposal may be stated. Usually new structures/entities, etc. are by and large, to be avoided. In case new structures are intended to be created for administering the scheme, the details of such structures and specific justification for the same may be provided. Such new structure should be proposed only if it has been established after due analysis, that existing structures cannot be levered for the proposed/additional work.

The project at the national level will be coordinated & monitored by National Mission for Clean Ganga. SPMG is the State nodal Monitoring Agency for the project. The executing agency for the project is Uttar Pradesh Jal Nigam and will be responsible for project bidding & award on Hybrid Annuity based PPP mode in accordance with applicable procurement guidelines. These structures are already in place and will be used.

The Executing agency will supervise & monitor the construction & operation works. In addition the works will be inspected through a third party agency at suitable frequency.

9.3 The completion schedule of the proposal indicating timelines of activities should be provided in PERT/Bar Chart along with critical milestones.

The project will be implemented 24 months including bidding period. Post commissioning O & M would continue under the project, 15 years for I/ D and STP.

Bar Chart showing implementation schedule is at Annexure-II.

9.4 Mode of implementation: Departmental/ Contract/ Turnkey contract/ EPC/ PPP, etc. with justification may be given.

The proposal will be implemented by the Uttar Pradesh Jal Nigam (EA) on Hybrid Annuity based PPP mode.

9.5 Nodal officer identified / appointed for being directly in charge and overseeing progress of the proposal may be indicated. Details about his status, past experience in executing similar proposals and balance tenure left for steering the proposal may also be mentioned. He/ She should normally be appointed for entire duration of the proposal.

Uttar Pradesh Nigam (UPJN) is the executing agency for this project and has fully dedicated Construction Circle for Ganga works headed by General Manager to review and monitor for the works. The Project Manager appointed by UPJN at Pollution and Prevention Unit (Ganga) at Farrukhabad-Fatehgarh shall be directly in-charge of the project. The progress at the state level and central level will be reviewed by the concerned officer of the State Project Management Group and National Mission for Clean Ganga respectively.

9.6 The monitoring framework preferably on MIS for the proposal may be indicated. The arrangements for audit/social audit of the proposal may also be stated.
The physical and financial progress reports of the project shall be submitted by the implementing agency on a monthly basis in the prescribed format to SPMG/National Mission for Clean Ganga (NMCG), MoWR, RD & GR. The Utilization Certificates in respect of the funds utilized for expenditure on the project and the unspent amount at the end of the period shall be submitted by the implementing agency on a quarterly basis. The officers of the SPMG/NMCG, MoWR, RD & GR will visit the project sites on regular basis for monitoring and review of progress of implementation of the projects under the NGRBA programme. Review meetings will also be held by the senior officers of MoWR, RD & GR with the State Government officials/UPJN officials from time to time. A quality report regarding the same shall be submitted to SPMG/NMCG.

The project is being reviewed from environmental & social management perspective in accordance with the NGRBA framework/ NMCG guidelines. The draft environmental social assessment & management plan has been submitted along with the DPR. The ESAMP will be finalized before tendering.

In addition, the project will be regularly reviewed by District Ganga Protection committee to be constituted under the chairmanship of the District Magistrate.

In order to strengthen the monitoring mechanism and improve transparency and accountability for project implemented under the NGRBA programme, a Third party Inspection (TPI) system is in place.

The TPI system would review and monitor the performance of the project through the entire lifecycle of implementation on the basis of detailed onsite review, examination of appropriate documents and discussions with the Project Implementing Agencies and other key stakeholders. The monitoring would cover all four stages in the life cycle of a project, namely Pre-construction, Construction, Commissioning & trial run and, Post construction for effective monitoring.

10. Proposal sensitivities/uncertainties

10.1 Any foreseeable constraints / uncertainties which can affect the technical design, costing and implementation of the proposal may be indicated.

Local administrative permissions for laying of sewer will be required, which is normally granted.

10.2 The likely impact of these constraints/uncertainties on the proposal parameters may be stated. In particular, the sensitivity of the proposal cost, proposal schedule and proposal viability towards the possible constraints/ uncertainties may be mentioned.

N.A.

11. Mandatory approvals / clearances:

The details regarding the requirement of mandatory approvals / clearances of various local, state and national bodies and their availability may be indicated in a tabular form

After sanction of the project road cutting permission has to be taken from local authority, which is normally granted by them.

12. Consultations with the Public, State Governments, External Research Agencies, Think Tanks, etc.
The proposal has been reviewed by NMCG officials and Jamia Millia Islamia (Third party appraiser). The observations and compliance has been considered by UPJN. The observations and compliance report is placed at Annexure III.

13. To the extent possible and practicable, such consultations may be done by the Administrative Ministries. The draft Proposals may be placed on the web site of the sponsoring Ministries and comments invited from the general public. The draft proposals may be formulated / finalized taking into account such comments.

N.A.

14. Concurrence of Executive Director (Finance), NMCG.

14.1 Comments/Concurrence of Executive Director (Finance) may be indicated along with reply.

ED (Finance) has concurred with the proposal.

15. Approvals:

15.1 Please indicate the specific points on which approval of EC is sought.

The EC is requested to consider for approval the proposal of “Interception and Diversion of drains/ sewage treatment works at Farrukhabad-Fatehgarh” Under Namami Gange in Uttar Pradesh State under EAP component (World Bank Assisted NGRB project) of Namami Gange at an estimated cost of the project i.e. ₹ 23734.23 Lakhs with 100% funding from Government of India (Land cost shall be borne by the State Government), on Hybrid Annuity based PPP mode subject to the compliances listed at Annexure III and conditions listed at Annexure IV.

Sd-

Hitesh Kumar Makwana
Executive Director (Projects)
ANNEXURE-I

INTERCEPTION AND DIVERSION OF DRAINS AND SEWAGE TREATMENT WORKS OF DISTRICT FARRUKHABAD-FATEHGARH
## ANNEXURE-II

**BAR CHART FOR INTERCEPTION AND DIVERSION OF DRAINS AT FARRUKHABAD- FATEHGARH UNDER NAMAMI GANGE PROGRAMME**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Activities</th>
<th>Qty</th>
<th>Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tendering Process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Land acquisition</td>
<td>2.81 Hect.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Interception of drains</td>
<td>3 Nos</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Diversion Sewers including manholes, dismentling and reinstatement of roads, shifting of utilities etc.</td>
<td>5.76 Kms</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Sewage Pumping Stations (SPS), including Civil works and E/M works</td>
<td>3 Nos</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Rising Mains, 30 m-800 mm dia, 200 m-400 mm dia, 3500 m-200 mm dia</td>
<td>0.23 Km</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>STPs , including campus development such as roads, drainage, water supply, sewerage, electrification, office cum lab, lab equipment, plantation, SCADA system etc.</td>
<td>2 Nos+ 1 No (wet land)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Treated effluent disposal, open channel</td>
<td>1.5 Km</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Boundary Wall and gate</td>
<td>1.6 Km</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Power Connection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Communication &amp; Public outreach</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

*BAR CHART FOR INTERCEPTION AND DIVERSION OF DRAINS AT FARRUKHABAD- FATEHGARH UNDER NAMAMI GANGE PROGRAMME*
### ANNEXURE-III

#### Reply of queries raised by NMCG, New Delhi.

**Name of work:** Detailed project report of Interception and Diversion of drains at Farrukhabad-Fatehgarh

<table>
<thead>
<tr>
<th>Queries which is raised by NMCG</th>
<th>Reply of Queries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> General</td>
<td></td>
</tr>
<tr>
<td>1 As per our calculation, this city is a very fast growing city. Based on our analysis, graphical method seems to be most suitable one. Based on that method, for the year 2033 the population comes out to be 4,13,142. Therefore, population considered seems to be ok.</td>
<td>No comment.</td>
</tr>
<tr>
<td>2 Overall key plan needs to be provided incorporating all the existing and new facilities.</td>
<td>Overall key plan Provided with DPR</td>
</tr>
<tr>
<td>3 Please update base year to 2020, instead of 2018 and intermediate year as 2035 and ultimate year 2050 respectively. Please update all the calculation, population projection, budgetary cost estimate accordingly.</td>
<td>Base year, ultimate year and design year have been updated to 2020, 2035, and 2050 respectively</td>
</tr>
<tr>
<td>4 The justification for proposing 4 STPs is not clear as the topographical detail is not available. Please provide the topographical drawing. Optimum number of STP needs to be provided based on techno commercial analysis. It will help in reduction of manpower cost, land cost, electricity cost and other associated cost (like cost of staff quarter, roads, boundary wall etc) Further, reduction of number of STP will ensure better control from operational point of view.</td>
<td>Total no. of STPs proposed has been reduced to two, one for Farrukhabad and one for Fatehgarh.</td>
</tr>
<tr>
<td>5 Please check and confirm that the required land has been acquired, available for appropriation, free from encumbrances etc. Accordingly, NOC for the same needs to be annexed. Considering treatment requirement for 30 years, space provision for augmentation of STP in modules for next 15 years shall be provided in the layout.</td>
<td>The land for proposed STP in Fatehgarh is available, however, 5.15 Hec. Land has been acquired/purchased for SPSs, Tappings, and STP at Farrukhabad</td>
</tr>
<tr>
<td>6 Please check and confirm whether dedicated feeders for uninterrupted power supply are available and if not, cost for the same is included in the cost estimate.</td>
<td>Separate power feeders are not available as enquired from UPPCL, but will be checked at the time of actual power connection a provision has been taken accordingly.</td>
</tr>
<tr>
<td>7 There is no mention in the report about any ongoing or future sewage project in the area. Stakeholders, Minutes of Meeting to be annexed with the report.</td>
<td>There is no ongoing project of sewerage in Farrukhabad &amp; Fatehgarh town and there is no proposal for future to at present.</td>
</tr>
<tr>
<td>8 Operational Philosophy of SCADA system shall be provided in the DPR.</td>
<td>SCADA system shall be integrated with STP based as SBR technology, However influent &amp; effluent characteristics of STP shall be monitored via online instrumentation.</td>
</tr>
</tbody>
</table>
### 9. Bar chart of project implementation schedule of the project need to be updated along with final DPR submission.
- Bar chart updated.

### 10. DPR structure should follow annexure -11 of prevalent NMCG guidelines. Environment related chapter like EIA, SIA is missing in the DPR. The same should be included in the report and associated cost if any to be also captured.
- EIA and SIA report will be submitted as soon as possible.

### B. Qualitative & Quantitative Discharge measurements
- **11.** It is observed water sample has been measured and checked on December, 2015. It is preferable to re-check the water quality and flow measurement based on current scenario during dry season from laboratory (NABL accredited) with date, signature.
  - It will be rechecked before execution of works.
- **12.** It is observed that flow measurement based on actual discharge is higher than the sewage generation based on population. Since, the city is not having sewerage network, please check and confirm whether considering 80% of 135lpcd water supply is justified or not. Although, it is depicted that higher discharge is resulting because of shallow tube well and hand pump in the city, however, it needs to be ensured higher discharge found during measurement does not contain any industrial waste water (or storm water).
  - There are some textile printing units exist in Farrukhhabad town. However to as certain the discharge of drains, discharge measurement shall be done before execution of work.

### 13. It needs to be justified why STP capacity has been calculated based on actual discharge. There is a significant difference of almost 9 MLD capacity between STP capacity calculated based on actual discharge and STP capacity based on population.
- All the works proposed in this DPR are based on the discharge measurement at various drains in town as per the guidelines of NMCG for I & D works. However, as stated earlier, the capacity of STP shall be reconfirmed before tendering process.

### 14. Industrial discharge, its characteristics are not captured in the report, there is no mention regarding any ETP or pollution load generation from industrial discharge. Please provide description of existing ETP, CETP if any, so that it can be understood how the discharges from industries are taken care and also please specify the current effluent discharge standard.
- There is no industries exist in the town which needs to be addressed at CETP. There are some printing units which do not use much water except for washing.

### C. Design
- **15.** Adequacy check for existing sewer line shall be provided so that velocity is >=0.8m/s at water depth of 0.8full. It needs to be confirmed that existing pipelines are adequate enough to check proposed sewage generation.
  - Existing system has been checked.
- **16.** Please provide the complete drainage network drawing, showing all the existing drains for better understanding of the drainage network. Please provide sketch showing
  - Provided
<table>
<thead>
<tr>
<th></th>
<th>17. Contributory sewage contribution in each drain. Drain dimensions and related design need to be provided in the drawing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>STP layout drawing along with proper sizes to be provided in proper scale drawing, to justify the available area.</td>
</tr>
<tr>
<td>18</td>
<td>Important RLs have not been depicted in any of the drawings including drainage drawings. RL considered in the drawing needs to be verified by actual survey drawings.</td>
</tr>
<tr>
<td>19</td>
<td>The HFL (High flood Level) of the proposed pump house area, receiving water body and treated effluent channel routing, distance covered from the STP to outfall, outfall level must be furnished in a L-section drawing.</td>
</tr>
<tr>
<td>20</td>
<td>In Bhairoghat, tapping and diversion drawing. 6m deep, 300mm diameter cast in situ 6m deep pile has been proposed. Supporting soil investigation report needs to be attached for the same. Geotechnical report needs to be submitted for STP area during final DPR.</td>
</tr>
<tr>
<td>21</td>
<td>Modern technologies along with their life cycle analysis should be enumerated that can meet the present effluent standards.</td>
</tr>
<tr>
<td>D</td>
<td>Cost Estimation</td>
</tr>
<tr>
<td>22</td>
<td>The rate analysis and cost estimation need to be updated on the basis of the latest SOR. Cost of online monitoring system for influent and treated effluent of STP may be included. Cost should include cost due to SCADA also. Two percentage of contingency needs to be deleted from overall cost estimate. Costing Heads for following shall be provided in Abstract of Cost Public Awareness, • Governance and Accountability Action Plan, • Environmental Mitigation and Monitoring Plan</td>
</tr>
<tr>
<td>23</td>
<td>It has been proposed to update all the kachha drain and brick drain to RCC drain. Please check whether it is really required to update the brick drain to RCC drain, if it is in good shape. It needs to be confirmed that whether same section has been provided, where the existing drains are converted to new proposed RC drains.</td>
</tr>
<tr>
<td>24</td>
<td>The per running meter cost of sewer laying of approximately 3.5km is coming out to be more than Rs 28,000, which seems to be very high. Justification needs to be given for the same. It has been observed, approx. a. 1.3 crores is considered for timbering in trenches, b. 1.3 crores for road reinstatement work. Please check and reduce the cost accordingly.</td>
</tr>
<tr>
<td>No.</td>
<td>Points</td>
</tr>
<tr>
<td>-----</td>
<td>--------</td>
</tr>
<tr>
<td>25</td>
<td>Cost of the effluent channel seems to be very high. Please check the total length and type of the channel considered and reduce the cost accordingly.</td>
</tr>
<tr>
<td>26</td>
<td>Monthly salary considered for the employee in O &amp; M cost seems to be high. Please check and update the cost based on actual compensation. O &amp; M cost need to be revisited. Annexure to be added for cost of chemicals and sludge disposal considered in the estimate.</td>
</tr>
<tr>
<td>27</td>
<td>Discrepancy has been observed in bar screen cost estimate. For the same size, in one location 17.5 lacs has been considered, where as in other location it is taken as 2 lacs. Please check and clarify.</td>
</tr>
<tr>
<td>28</td>
<td>Same capacity has been considered while estimating the pump cost. However, three different capacities have been considered in O &amp; M cost estimate. In flow meter estimation, same cost has been considered as for all sizes. Please consider actual cost based on quotation and include the budgetary quotations as annexures.</td>
</tr>
</tbody>
</table>

**Miscellaneous**

<table>
<thead>
<tr>
<th>No.</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>A proposal for Resource Recovery and Reuse of the treated effluent may be furnished along-with the report.</td>
</tr>
<tr>
<td>30</td>
<td>A fresh provision of solar panels on roof-bearing structures/ empty spaces for power generation should be taken that are tilting as per movement of sun to reduce net power consumption of the project.</td>
</tr>
</tbody>
</table>
### S.N. | Query | Answer
--- | --- | ---
1 | Since there is no sewerage network in the town, the requirement of I/D and STP works in the city is proposed. 3 SPS and 4 STPs (58 MLD) are proposed to be constructed in in the DPR. The treated effluent from all the STPs shall be discharged in to existing respective drains flowing adjacent to the treatment sites. The treated effluent from these drains shall be used by the farmers and during no demand period it will be discharged in the River. | Agree
2 | From the layout plan it is clear that the Pakkapul and Tokaghat Drain together contribute to Bhaironghat Drain naturally. Bhaironghat drain further merges with Amethi Kohna drain naturally and then finally untreated sewage falls in River Ganga near Bhaion Temple. This clearly indicatesthat if Bibiganj Drain may be intercepted and diverted through interception sewer/ trunk sewer to Pakka Pul Drain then all these drains together from one single drain naturally. The Bhaironghat (carrying all sewage from Bibiganj Drain, Pakkapu Drain and Tokaghat Drain) and Dheemapur Drain may be diverted to the STP proposed near Bhairo Temple and the final capacity of the STP may be worked out. | There are two STPs are proposed in the DPR, one for Farrukhabad, 50 MLD capacity at Rampur and other one for Fatehgarh, 16 MLD capacity at Hathikhana. Thus all the drains flowing in Farrukhabad area are proposed to be treated at Rampur STP of 50 MLD capacity and similarly all the drains flowing in Fatehgarh area are proposed to be treated at Hathig Khana STP.
3 | Similarly Cantt. Area Drain, Bargadiya Ghat Drain and Hathi Khana Drain together may be connected through one single intercepting sewer/ trunk sewer which may further be diverted to the proposed Fatehgarh STP in existing 2.7 MLD STP Land and the STP may be expanded/ modified accordingly. | Agreed
4 | In view of para 2 & 3 above, the plan for interception and diversion works may be revisited accordingly if feasible. If not then proper clarification may be required. Therefore the requirement of 4 STPs may be reduced to construction of two STPs of higher capacity. This may eventually lead to reduction in the manpower required at each STP and SPS, construction costs, electricity requirements, land costs etc thereby reducing the overall operation and maintenance costs of the project. | Plan and DPR has been revised accordingly.
5 | The proposal has included additional cost items as contingencies and labour cess. While, the cost element towards labour cess may be considered within the project component and statutory tax liability, the contingencies may not be considered in the project in accordance with NGBRA framework. | Agreed
6 | The water supply rate taken for sewage generation estimation is taken @135 lpcd may be rechecked as the town does not have sewerage network. As per CPHEEO manual the | Agreed, considered accordingly
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6th Meeting of the Executive Committee of National Mission for Clean Ganga 2017</strong></td>
<td></td>
</tr>
</tbody>
</table>

- Recommended maximum water supply levels is 70 lpcd for towns with piped water supply but without sewerage system.

- The water quality and flow measurement data w.e.f. 20.12.15 to 22.12.2015 is too old and may be re-measured to know the actual flow and water quality (composite sampling) of the drains at present.

- The water quality and flow measurement shall be re-measured before actual execution of works.

- If any industrial unit/s is/are present in the project area the details of the same may be furnished in the DPR and the lay out plan.

- There are few textile printing small scale household units exist in Farrukhabad town. However, test report of drain discharge show presence of very less chemicals.

- The ESAMP report is not provided in the DPR.

- ESAMP report shall be provided.

- Whether the STPs proposed are above HFLs or not needs clarification. In this regard contour maps may be provided. UPJN may need to check the levels and accordingly decide the appropriate location and/or flood protection measures.

- Rampur STP at Farrukhabad is proposed above HFL and similarly STP at Fatehgarh is proposed at the existed STP site.

- There is no provision of online monitoring of inlet and outlet parameters. The same may be provided along with flow measurement at inlet and outlet of STP.

- Provision has been made for online monitoring of Inlet and outlet parameters alongwith SCADA at both the STPs.
<table>
<thead>
<tr>
<th>Queries which is raised by NMCG</th>
<th>Reply of Queries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Techno commercial analysis needs to be provided to justify the location and number of STPs provided along with contour of the catchment and STP area.</td>
<td>Survey map has been attached with the DPR. However, The location of the STP at Farrukhabad has been selected at the downstream of the town, which is best suited location.</td>
</tr>
<tr>
<td>2 It has been observed that the location of 34 MLD proposed for Farrukhabad is resulting in significant pumping requirement. It is requested to review whether STP can be proposed in a new location, preferably in Dheemarpur Drain outfall area where this additional pumping may be avoided and NGT also has directed.</td>
<td>The location of STP at Farrukhabad has been revised and new location of STP is near Bhairoghat drain. No additional pumping has been proposed in this project.</td>
</tr>
<tr>
<td>3 UP Jal Nigam needs to submit proper back up, that all locations proposed for STP and pump houses are above HFL and not coming in the flood plain.</td>
<td>STP and pump houses are above HFL. HFL of ganga river at Farrukhabad is 136.60 m.</td>
</tr>
<tr>
<td>4 It has been observed that BOD shown in DPR Is significantly higher than BOD indicated in NGT and CA &amp; FS report. NMCG requested UP Jal Nigam to review and confirm the same.</td>
<td>BOD and COD of drains taken in the DPR may be considered more accurate as the samples were taken during non-monsoon period and representative sampling was done. The BOD &amp; COD indicated in CA&amp;FS report are based on the samplng done during monsoon season, which may not be considered as true representative sample. However, the BOD &amp; COD and other parameters shall be re-checked at the time of execution of the project.</td>
</tr>
<tr>
<td>5 It has been decided that the quantity and quality parameters of waste water in the drains need to be rechecked during dry season as per NMCG guideline.</td>
<td>Agreed, shall be done accordingly.</td>
</tr>
<tr>
<td>6 UP Jal Nigam needs to submit actual water availability in the town to justify sewage generation considered in the DPR. It can submitted in form certification/ available data received from competent authority.</td>
<td>The water supply datas have been confirmed with other office of UP Jal Nigam, which is looking after the water supply. The report has been annexed withthe DPR.</td>
</tr>
<tr>
<td>7 It has been observed that in the drawing colour coding for Farrukhabad- Fatehgarh is not exactly matching with actual boundary of the area. The same needs to be updated.</td>
<td>Corrections have been made accordingly.</td>
</tr>
<tr>
<td>8 That actual contribution of sewage based on projected population from different wards for deriving STP capacity of 34 MLD and 16 MLD needs to be submitted.</td>
<td>The STPs has been proposed as per the Drain discharge measured, because Interception &amp; Diversion of the drains have been proposed in this DPR. However, a separate estimate for the sewer network in the Farrukhabad town is being prepared under AMRUT program.</td>
</tr>
<tr>
<td>9</td>
<td>It is observed that O &amp; M cost reduced from earlier revision after PMC comments. However, it is requested to revisit O &amp; M cost again considering the actual O &amp; M cost requirement for sludge disposal mechanism, chemical cost etc.</td>
</tr>
</tbody>
</table>
**National Mission for Clean Ganga (NMCG)**

**REVIEW OBSERVATIONS OF DPR FOR FARRUKHABAD-FATEGARH**

**Date:** 19-09-2017

**Basis:** Revised DPR (Sept, 2017)

**Observations on DPR:**

1. Based on the discussion within NMCG and ground realities, it is proposed not to tap Bibiganj Nala, Pakkapul drain and Tokaghut drain separately since these drains flows either into the forests or water is used up for agricultural use.
2. Only Bharioghat drain near Bhairoghjat temple and Dheemapur shall be tapped. The Bharioghat drain receives wastewater from Pakkapul drain, Tokaghat drain and Amethikohna Nala collectively.
3. There is no information provided in the DPR about the present water supply sources and per capita water supply. Therefore water supply rate of 150 lpcd assumed is excessive for this town having a population of 3-4 lakhs, water supply rate needs to be assumed at a maximum rate of 135 lpcd. Based on 135 lpcd water supply rate and a population of 4,20,600 (year 2035), the sewage generation is projected to about 45 MLD.
4. Of this 45 MLD sewage generation, about 32 MLD would be contributed from Farrukhabad and balance 13 MLD would be contributed from Fategrah. Considering existing 2.7 MLD STP at Fategrah, additional 10 MLD STP can be proposed at Fategarh. For Farrukhabad, a modular approach can be adopted and 8 MLD x 3 Nos. module may be constructed presently with a provision of one additional 8 MLD module to be constructed later when the sewage flow increases. This would take care of avoiding large un-utilisation of STP infrastructure in the present date.
5. In view of above, Nala tapping arrangement of B B Ganj Nala, Pakkapul Nala and Tokaghat nala would not be required thereby saving a capital cost of Rs. 247.24 lakhs.
6. For the revised capacity of (24 + 10) MLD STP the revised cost would be about Rs. 40 crores instead of Rs. 64.9 crores for 50 MLD capacity.
7. It need to be explored whether instead of considering the IPS at Bargadiya, it is possible to tap Bargadiya Ghat drain at more upstream stretch where it crosses the Cantonment Area Nala I&D crosses Bargadiya ghat drain. This will enable to do away with the IPS at Bargadiya and reduce substantial capital as well as O&M cost.
8. There is no basis of 1680 m running length of boundary wall. This would be reduced to about 800-1000 m length corresponding to land required for Bhairoghat and Hatikhana STP/MPS.
9. In page No. 214, the cost of solar system of Rs. 5 cr for STP at Fateagarh needs to be deleted. (As it is included in the LS cost of STP).

10. The basis of Treated effluent channel of length 2500 m is not clear. For utilization of treated wastewater to the extent of 20% in the nearby adjacent area effluent channel of suitable length may be considered only. Balance water may be released into river Ganga. This could save more than Rs. 2 cr capital cost considered in the DPR and also corresponding O&M cost of maintenance of this channel.

11. Detailed calculation of pump selection is to be provided. The power rating of motors, DG etc is on the higher side. By taking a configuration of 3 pumps of Peak/2 and 2 pumps of Peak/4 capacity, the pump capacity for average flow of 2020 and 2035 for the SPS/MPS is found tentatively as follows:

<table>
<thead>
<tr>
<th>Pump 1</th>
<th>Bhairoghat MPS</th>
<th>Bargadiya</th>
<th>Cantt nala</th>
<th>Hathikana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity (m3/hr)</td>
<td>1320</td>
<td>70</td>
<td>180</td>
<td>350</td>
</tr>
<tr>
<td>Nos working for Peak</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
</tr>
<tr>
<td>No Working for Average</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Total no. of P1</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pump 2</th>
<th>Bhairoghat MPS</th>
<th>Bargadiya</th>
<th>Cantt nala</th>
<th>Hathikana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity (m3/hr)</td>
<td>660</td>
<td>35</td>
<td>90</td>
<td>175</td>
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<tr>
<td>No working for lean</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Total no. of P2</td>
<td>2.00</td>
<td>2.00</td>
<td>2.00</td>
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</table>

12. Quotations for the relevant items like pumps, valves, screens, EOT cranes etc is to be given. The cost is on the higher side. About 185.56 Lacs is found be surplus. This figure is tentatively calculated and quotations will give the final figure.

13. In the costing of pumping stations, the number of sluice valves is to be checked.

14. The sewage pumps should be clearly described as “non-clog submersible pumps” in the BOQ.

15. Some pages are missing in the costing sheets. The same shall be checked and rectified.

16. The estimation cost of Rs. 35.58 Crores for diversion sewers of 7.68 km considered in general abstract of cost is not clear, needs clarification. If it is provided for BBGanj Nala, Pakkapul Nala, and Tokaghat Nala then it shall be deleted.

17. The tentative costs calculated based on above observations are:

<table>
<thead>
<tr>
<th></th>
<th>Proposed Estimate</th>
<th>Tentative Revised Estimate</th>
<th>Difference</th>
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</thead>
<tbody>
<tr>
<td>Capital Cost (INR Lacs)</td>
<td>12783.48</td>
<td>9859.53</td>
<td>2923.95</td>
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<tr>
<td>O&amp;M Cost 15 yrs (INR Lacs)</td>
<td>21374.86</td>
<td>15225.23</td>
<td>6149.64</td>
</tr>
<tr>
<td>TOTAL (INR lacs)</td>
<td>34158.34</td>
<td>25084.76</td>
<td>9073.59</td>
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</table>
REPLY TO THE OBSERVATIONS ON DPR FOR FARRUKHABAD-FATEHGARH BY TATA CONSULTING ENGINEERS LIMITED

Date: 19 September 2017.

Basis: Revised DPR (Sep. 2017)

1. There parameters for the sewage used in irrigation have been fixed by CPCB/ UPSPCB. Therefore, raw sewage is required to be treated before applying on the land for irrigation purpose; otherwise ground water shall be polluted by raw sewage infiltration. Hence the observation made by TCE that the tapping of Bibiganj Nala, Pakkapul drain and Tokaghat drain is not required since these drains flows either into forests or water is used up for agricultural use, is not correct. However, BB Ganj drain has been excluded because this drain flows into forest area and does not meet River Ganga directly.

2. This observation contradicts the above observation. However, Bhaironghat drain do not receive waste water from Pakkapul drain, Tokaghat drain and Amethikohna drain. These drains are separate drains and are terminating at present either in Forest or agriculture fields.

3. The Detailed Project Report has been prepared for the “Interception & Diversion Works of the Drains at Farrukhabad-Fategharh”, which is on the basis of discharge flowing through drains. No sewer network is proposed in the DPR, thus the discharge calculation on the basis of population and rate of water supply is not justified in this case, because apart from municipal water supply, there are other sources of water supply, which contributes to the waste water in the drain from house- holds as well as from small scale industries in the town.

4. See the para above. The STP has been provided on modular approach.

5. As Above.

6. As above

7. Drain has to be tapped near the discharge point as far as possible By tapping Bargadiya drain at more upstream stretch will not be useful.

8. Boundary wall shall be provided as per actual requirement.

9. A provision of Rs. 500.00 Lakh has been made in the estimate for solar system at STP.

10. A provision of 2500m long treated effluent channel has been made in the estimate. The suitable length of the channel shall be constructed only.

11. The pumps have been provided as per the NMCG guide lines. The capacity of pumps shall be reconfirmed before actual execution of work.

12. E-tenders shall be invited for the purchase of relevant items like pumps, valves, screens, EOT cranes etc.

13. Shall be checked during execution of work.


15. Agreed.

16. As per above.

17. No comment.
ANNEXURE-IV

Conditions on Administrative Approval and Expenditure Sanction for the project on “Interception, Diversion & Treatment Works” at Farrukhabad-Fatehgarh under Namami Gange in Uttar Pradesh” under EAP Component (World Bank Funded) of NMCG.

1.0 General Conditions:

i. State Government shall submit a final DPR in accordance with the TPA observation and approval for the project.

ii. State Government/ Executing Agency shall comply with all the observations of TPA/ NMCG/ WB before bidding and during implementation wherever possible.

iii. State Government/ Executing Agency shall appoint a Transaction Advisor in consultation with NMCG for facilitating the bidding process on Hybrid Annuity based PPP model.

iv. State Government/ Executing Agency shall follow the applicable procurement procedures (WB present guidelines if funded under WB Assisted Project).

v. State Government/ Executing Agency shall explore potential reuse of the treated water from STPs.

vi. State Government/ Executing Agency shall generate wastewater flow data (drain), wastewater characteristics and river water quality monitoring through actual monitoring and analysis at regular intervals (atleast monthly basis).

vii. 'Uttar Pradesh Ganga Nadi Sanrakshan Abhiyakaran', the State Programme Management Group (SPMG), which is a registered society, shall be responsible for overall planning, management and effective implementation of the project at state level.

viii. 'Nagar Nigam, Farrukhabad' i.e. 'Municipal Corporation of Farrukhabad-Fatehgarh' shall be the Urban Local body (ULB) responsible for ensuring commitment to ownership, commitment to reforms for sustainable O & M, and community involvement.

ix. The Uttar Pradesh Jal Nigam (UPJN) shall be the Executing Agency (EA) of the project to be implemented under the guidance of the SPMG, in coordination and consultation with the ULB and overall monitoring of the National Mission for clean Ganga (NMCG) as per provisions laid down in the NGRBA programme framework.

x. The project will be executed in Hybrid Annuity based PPP model and needs to be suitably aligned with the 'Strategic Sanitation Plan'/ 'City Sanitation Plan'/ 'Master Plan' for Farrukhabad-Fatehgarh towns. Also, synergy shall be ensured with other Central/State sponsored programme like JnNURM, UIDSSMT etc. in the cities of Farrukhabad-Fatehgarh to avoid any overlap/ duplication.

xi. The cost towards 15 years Operation and Maintenance (O & M) has been included in the project cost. However, Operation and Maintenance (O & M) of the project in Hybrid Annuity based PPP model for a period of 15 years or more will be responsibility of the State Government/ Urban Local Body. The O & M shall include basic cleaning and waste management for the proposed Sewage Treatment Plant area. Sustainable revenue generation from beneficiaries, re-use of treated effluent and waste to energy etc. shall be encouraged.

xii. The detailed project implementation plan, detailed design and engineering of the project shall be undertaken by UPIN based on extensive survey and investigation before execution. Disaster management concerns shall also be taken into account while executing the project.
xiii. An undertaking to be provided by UPJN that trunk sewer being proposed is not being proposed in any other scheme.

xiv. It must be ensured that all foundations are above High Flood Level. Proper soil testing needs to be ensured before any construction.

xv. All components of the project shall be completed within specified time limits and the resources and outputs and outcomes are to be ensured as envisaged in the approved project. Completion Report shall be submitted to NMCG on completion of the project.

xvi. Any additional component relevant for project or any component require modification or deletion, may be added or modified or deleted as the case may be, only with the prior approval of the Competent Authority.

xvii. Any project cost overrun or time overrun will be brought in the notice of NMCG. Decision of cost overrun and time overrun will be granted based upon discussion in Executive Committee (EC) of NMCG. Cost overrun, if any will be borne by the Central Government.

xviii. Staffs that may be employed for preparation, execution or operation of the project by the EA are not to be treated as employees of the SPMG/ NMCG. The deployment of such staff at the time of completion or termination of the project will not be the concern or responsibility of the SPMG/ NMCG.

xix. Optimal utilization of the assets relating to the project and created under Ganga Action Plan or any other Central/ State Plan shall also be ensured by the SPMG/ EA/ ULB.

xx. All data, records, documents and material related to the project shall be stored properly and catalogued by the SPMG/ EA for reference and retrieval including regular uploading/ disclosure/ updating of such data on website.

xxi. The State/ SPMG/ EA shall ensure that all provisions of the RTI Act 2005 are adhered to as far as information pertaining to the project is concerned.

xxii. The State/ SPMG/ ULB shall ensure that public is informed in the State/ city of Farrukhabad- Fatehgarh regarding implementation of the project and soliciting their co-operation and views as applicable.

xxiii. For the provisions made under IEC activities, the SPMG shall make suitable arrangements with Nagar Nigam, Farrukhabad for executing the 'Communication and Public Outreach' programme under its supervision towards sensitization of people for abatement of pollution and conservation of river Ganga.

xxiv. Conditions/ commitments indicated in the Executive Committee Memorandum, Minutes and other documents including those to be fulfilled before finalizing the bid document(s) shall be strictly adhered to in the project implementation and management. The SPMG will ensure fulfilment of such conditions before finalizing the bid(s) by the EA. Copies of EC Memorandum, Minutes and other related documents are already circulated.

2.0 The release of funds is subject to the following terms and conditions:-

2.1 Annual Plan and Procurement Plan:

i. The Annual Plan and yearly Procurement Plan shall be prepared by the month of November every year for the next financial year as per the provisions made in the NGRBA programme framework and submitted by the SPMG to the NMCG for necessary approval and budget allocations.
ii. The SPMG shall furnish to the NMCG annually a report of its work within three months from the closing of the respective financial year.

2.2 Financial Aspects:

i. Funds shall be made available to the agencies strictly as per the 'Financial Management Manual (FMM)' of the NGRBA programme framework.

ii. The SPMG/ULB shall take all necessary legal and executive measures to ensure adequate resources available for operation & maintenance of the assets created under the Project to fulfill its mandate.

iii. The funds released for the project shall be held in an interest earning NGRB project bank account of the SPMG (the mother account). The interest thus earned shall be credited to the project and reflected in the Interim Un-Audited Financial Reports (IUFRs) from time to time and shall be adjusted towards future funds release for the project. For any diversion of funds, the signatory of the bank account(s) shall be held responsible.

iv. The SPMG/EA are not permitted to seek or utilize funds for the same purpose from any other organization (Government, semi-Government, autonomous or private) without prior approval of the competent authority.

v. The sanctioned cost of the project will be borne under the 'Municipal Waste Water' sub-project sector of 'Infrastructure Investment' component of the World Bank assisted 'National Ganga River Basin Project'. The sanctioned amount should be spent exclusively thereon as per the scope of the project and within the stipulated time. The liability of NMCG will not exceed the amount sanctioned for the project. For carrying forward any work(s)/activities beyond the specified time limit prior approval of the NMCG should be obtained.

vi. It is the responsibility of the SPMG/EA/ULB to ensure that the assets are exclusively used for the purpose for which the grant is sanctioned and to maintain the assets and their records properly.

vii. All the assets acquired/created out of the grants shall not be disposed of, encumbered, or utilized for any purpose other than that for which sanctioned without prior approval of the Government.

2.3 Audit:

i. The Comptroller & Auditor General of India (the External Auditor) at his discretion shall have the right of access to the project related books and accounts of the SPMG/EA for the purpose of Audit.

ii. The books of accounts of the grantee, relating to this grant, shall be open to Audit by the Internal Auditor of the SPMG and the External Auditor.

iii. The overall auditing arrangements to cover both periodical internal and annual external audit of project shall be ensured as per the 'Financial Management Manual (FMM)' of the NGRBA programme framework.

2.4 Flow of Funds:

The fund releases by the NMCG shall be remitted by Electronic transfer to the SPMG account. The fund shall flow from the SPMG account to a separate sub-project specific zero balance bank account (the 'child account') of the EA in the same bank of SPMG. The following details may be kept updated from time to time to enable electronic remittance:-

i. Bank account details of EA, both in figures and words, to SPMG.
ii. Bank account details of EA and SPMG both in figures and words to NMCG.


iv. Necessary authorization by the SPMG to its Bank to receive the remittances on its behalf and to issue necessary bank receipt to the NMCG’s bank for receipt of funds.

v. Necessary authorization by the EA to its bank and under such authorization, to issue payment instruction to pay contractors / suppliers / service providers for undertaking project activities.

vi. The NMCG Bank will transfer funds from the NMCG’s account to the SPMG account on submission of Interim Un-Audited Financial Report (IUFR) and other documents/ information as prescribed in the Financial Management Manual (FMM), of the NGRBA programme framework.

vii. The SPMG Bank will transfer funds from the SPMG’s account (mother account) to the child account of EA as soon as payment instruction is issued by the EA to its banker for transfer funds to contractors / suppliers / service providers account on the same date through 'Real Time Gross Settlement (RTGS)' and thus at the end of any given day, the EA child account will always have a zero balance.

viii. The State Government will release its share of funds to the SPMG within two months of receipt of the funds in suitable installments from the NMCG. The overall fund flow arrangements shall be ensured as per the 'Financial Management Manual (FMM)' of the NGRBA programme framework. The State Government shall make necessary provision for the State share of fund in the State budget. O&M costs will be considered for release only after the project is complete.

2.5 Submission of Monthly and Quarterly Physical Progress Report (MPPR / QPPR):

i. The Monthly Physical Progress Reports (MPPRs) shall be submitted by the 10th day of every month regularly by the EA to the SPMG and by the 20th day of every month regularly by the SPMG to the NMCG. The Quarterly Physical Progress Reports (QPPRs) shall be submitted to the 'Bihar State Ganga River Conservation Authority' and NMCG within 30 days from the end of each quarter.

ii. The MPPRs in standard format, to be developed by the EA in consultation with SPMG, shall be signed by at least two designated officers of the EA, one of whom will be Chief Project Coordinator, UPJN and also by at least two designated officers of the SPMG, one of whom will be the Programme/ Project Director.

iii. The signing officers will indicate her/ his name and designation in full in capital letters and affix official seal under the signature. While MPPR submitted by fax will be acceptable for commencement of processing the case, ink-signed MPPR must follow by Post.

iv. Consistency between physical progress and expenditure shall be maintained and reasons for substantial variations i.e., more than 10% shall be appropriately explained against each item.

2.6 Submission of Accounting and Financial Reports (AFR) by the EA:

i. The EA shall furnish monthly 'Accounting and Financial reports (AFRs)' by the 10th day of every month with all relevant documents and materials as per the 'Financial Management Manual (FMM)' of the NGRBA programme framework after commencement of the project to the SPMG and by the 20th day of every month regularly by the SPMG to the NMCG.

ii. The 'Accounting and Financial Report (AFR)' in standard format, to be developed by the EA in consultation with SPMG, shall be signed and stamped by the Head of the Accounts Department and Head of the Organization, UPJN.
iii. The name and designation of the officers signing the AFR shall be clearly mentioned in full and in capital letters. While AFR submitted by fax will be acceptable for commencement of processing the case, ink-signed AFR must follow by Post.

i. As part of the AFR, the EA shall submit the followings to the SPMG:
   a. Invoices of suppliers/contractors against which online payment instructions issued by the EA in the previous month.
   b. A list of invoices received and not paid during the previous month.
   c. A list of contracts signed during the previous month.

2.7 Submission of Interim Un-Audited Financial Report (IUFR) by the SPMG:

i. The SPMG shall submit quarterly Interim Un-Audited Financial Report (IUFR) to the NMCG within 30 days from the end of each quarter. The IUFR shall be submitted in standard format as prescribed by the NMCG.

ii. The IUFR shall be signed and stamped by the Head of the Accounts Department and the Programme/Project Director duly countersigned by the State authorities.

iii. The name and designation of the officers signing the IUFR shall be clearly mentioned in full and in capital letters. While IUFR submitted by fax will be acceptable for commencement of processing the case, ink-signed IUFR must follow by Post.

2.8 Submission of Utilisation Certificates (UCs):

i. The quarterly Utilisation Certificates (UCs) in the prescribed format (GFR 19A & 19B) shall be furnished by the EA to the SPMG in respect of grant-in-aid received during the various quarters within 30 days from the end of quarter, duly signed and stamped by the Head of the Organisation, Head of the Accounts Department and field level functionary at executive engineer level/Principal Investigator, as applicable.

ii. The SPMG shall submit quarterly UCs, duly countersigned and stamped by the Head of the SPMG and the State authorities within 15 days on receipt of the same from the EA.

2.9 Inspection and Monitoring:

i. The ‘Uttar Pradesh State Ganga River Conservation Authority’ and its Standing Executive Committee shall monitor the project from time to time. ‘Uttar Pradesh Ganga Nadi Sanrakshan Abhikaran’, the State Programme Management Group (SPMG) shall ensure close monitoring and evaluation of progress of the project, and also monitor implementation performance of the EA.

ii. The SPMG shall ensure appointment of agency (ies) for third party inspection (TPI)/evaluation of the project strictly as per letter No. A-12012/2/2010-NRCD-II dated 16th September, 2010. The EA through the SPMG shall submit copies of the TPI Reports along with their responses/comments to the NMCG. Releases of funds will be subject to compliance of TPI reports.

iii. City level Citizen’s Monitoring Committees (CMC) shall be constituted in the Allahabad city to serve as a transparency mechanism on flow of project/programme related information to citizens and key stakeholders and to garner their feedback on project/programme processes, as described in the NGRBA programme framework. Social audit will be conducted by the CMC as per the provisions of the NGRBA programme framework.
iv. NMCG may depute any person to visit the SPMG/EA for the purpose of monitoring its work and accounts of the SPMG. Full co-operation shall be provided by the EA to the persons deputed for inspection.

v. Time and cost overrun leading to delay in implementation of projects is viewed with serious concern by the Central Government and as per instructions contained in Cabinet Secretary’s D.O. letter No. 261/1/10/2000-Cabinet, dated June 4, 2001 read with Planning Commission’s D.O. letter No. O-14015/2/98-PAMD, dated 19.08.1998 (kindly visit NGRBA website/‘Project Monitoring’ for details), mandatory review of the project must be carried out from time to time so as to assess the expenditure trend and time schedule of the project and appropriate action against those responsible for delay shall be taken, in accordance with the instructions.

vi. The Director General, NMCG may monitor overall progress of project periodically from time to time.