PREPARATION OF COMPREHENSIVE STORM WATER DRAINAGE MASTER PLAN AND DETAILED PROJECT REPORT OF

BARBIL MUNICIPALITY

DISTRICT: KEONJHAR, ODISHA

21/03/24

Executive Officer
Barbil Municipality

City / Town Profile

Barbil town was Notified Area Council from 1957 and it's converted as Municipality from the year 1969. Total area of Barbil Municipality is 45.89 Sq. K.M. Barbil Municipality valley towns situated at a distance of 80 K.Ms from Keonjhar District headquarter partly by State Highway and partly by National Highway-215 and 300 K.Ms from Odisha State capital Bhubaneswar. The Barbil is extreme border town of Odisha and Jharkhand. The boundary of Ward No.1 of Barbil Municipality coincides with the boundary of Jharkhand. Barbil is a mining and industrial based town. The town is surrounded in East Thakurani Iron ore mines, in West Bolani Iron ore mines, in North Soranda hills of Jharkhand and in South Kasia-Barapada Iron ore mines. There is one river named as "KARROW" flowing in the west side boundary of the town of Barbil which helps inhabitant of Barbil Municipality in many ways including supplying of drinking water for the town. There is also one Railway station inside Barbil town and the passenger trains are plying from Barbil to Tata Nagar, Kolkata, Bhubaneswar and Puri. The goods trains are playing with carrying Iron ore and manganese ore to different industries of all over country and to harbor to export to the foreign countries.

Location and Extent

The latitude of Barbil Municipality is $22^0 5'15"$(N) and longitude is $85^0 21'2"$(E). The reduced level of the town is 475.74m from M.S.L. The town is situated 4on the boarder of Odisha and Jharkhand. The Revenue Villages are Nalda, Belkundi, Kara, Dalki, Barbil, Sedding, Sundara, Santabahal, Matkambeda and Matiaposi coming under Barbil Tahasil in the District of Keonjhar. The State Highway, bye road from NH-215 from Bhadrasahi to Nalda, the border village, is running in between the Barbil town. The town is extended to Thakurani mines in East side and Bolani mines very near to Sundargarh District border in West side and Jamda town of Jharkhand State is located in North side. In south side, the town is extended up to Serenda and Barpada Iron ore mines. NH-215 coming from Panikoili to Rajamunda which is 5 K.M. distance from Barbil town and Tantoo Aerodrome field is within 10 K.M. distance from Barbil town.

Demographic Profile

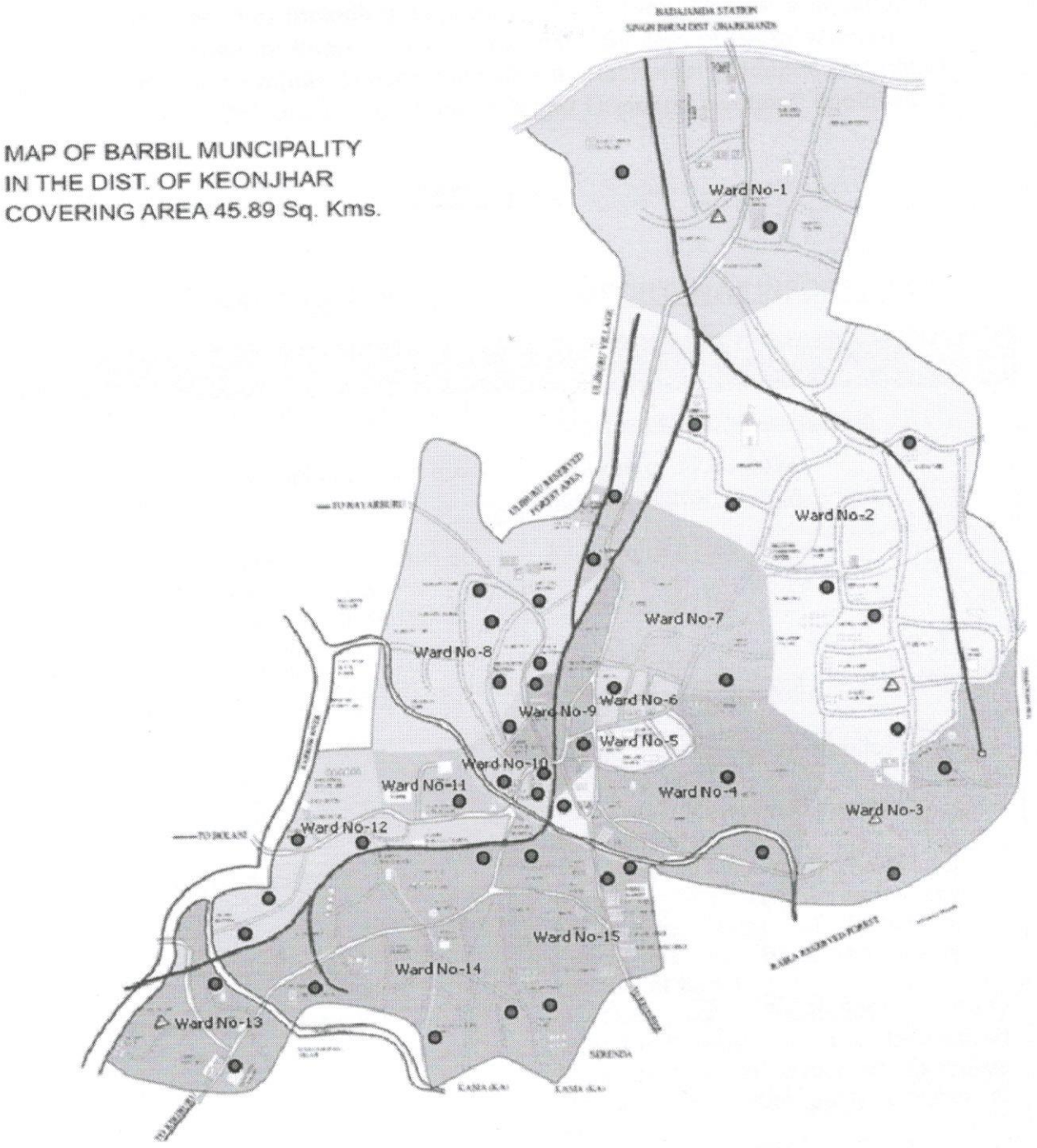
As per Census 2011 the Demographic Profile of Barbil town found as follows:-

1.	No. of Wards	15
2.	Total no. of Household	15,084
3.	Total Population	66,540
4.	Male Population	34,938
5.	Female Population	31,602
6.	Total no. of ST Population	16,291
7.	Total no. of SC Population	8,500

Population growth and change has a major impact on the urban fabric of a region. To guide the physical, social and economic development of a region, study of existing demographic indicators such as population distribution, growth trends, density pattern along with population projection is an essential part.

Census year	Population	Decadal growth rate
1991	42032	27.24%
2001	52627	25.21%
2011	66540	26.44%

Map of Barbil town showing road network



REQUEST FOR PROPOSAL (RFP)

For

Proving Consultancy Services for preparation of comprehensive storm water drainage Master plan including Topographical Survey, Design and technical support assistance for Improvement of Drainage System of Barbil Municipality in the District of Keonjhar, Odisha following the technical guideline and check list provided by MoHUA, GoI on "Storm Water Drainage System" enclosed in Annexed-1.

DATASHEET

SCHEDULE OF EOI AND OTHER IMPORTANAT INFORMATION

Sl. No.	Particular	Details
1.	Web address to download the EOI	https:// www.barbilmunicipality.in
2.	Last date of receipt of pre-bid query through email-id only	**5.00 pm of 12.03.2024** eobblmnc@yahoo.com
3.	Last date & time of submission of bid by Regd. Post /Speed Post/Courier Service or by hand drop in Tender Box. (Bid due date & time)	**5.00 pm of 27.03.2024**
4.	Date & Time of opening of Technical Bid	**11.00 AM of 28.03.2024**
5.	Date & time of opening of Financial Bid	Will be scheduled after scrutiny of technical bid.
6.	Duration of Service	To be mutually decided through Minutes of meeting.
7.	Cost of EOI document	DD of **Rs.10,000/- (Ten Thousand) only + GST @18%** from any Nationalized Bank in favour of Executive Officer, Barbil Municipality payable at Barbil.
8.	Earnest Money Deposit	DD/TDR of **Rs.60,000/- (Sixty Thousand) only** from any Nationalized Bank pledged in favour of Executive Officer, Barbil Municipality payable at Barbil
9.	Address where Bidders must sent/drop proposal	Executive Officer, Barbil Municipality, Barbil, Dist-Keonjhar, Odisha: 758035

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INFORMATION TO THE BIDDER

Pre-Qualification Criteria:

Before opening and evaluation of the technical proposals, each bidder/ consultant will be assessed based on the following pre-qualification criteria. The bidder/ consultant is required to produce the copies of the required supportive documents/ information as part of their technical proposal failing which the proposals will be rejected.

Sl. No.	Eligibility Criteria	Supportive Documents
1	Bidder / MEP Consultant must be a Company as registered under Indian Companies Act, 2013 or a Society registered under The Societies Registration Act, 1860 or a Trust registered under the Indian Trusts Act, 1882 or a Partnership Firm registered under the Indian Partnership Act, 1932 or a Limited Liability Partnership registered under The Limited Liability Partnership Act, 2008/ Proprietorship Firm, DIC, MSME Govt. of Odisha, registered in the State of Odisha.	Certificate of Incorporation/ Partnership deed/ Service Tax Registration
2	The bidder/ Consultant should have been in the consulting business for more than **Five years** from the date of Incorporation on the last date of submission of the proposal.	
3	The bidder should have its local operational office in Odisha. Self-declaration from the Bidder with mentioning office address.	Declaration
4	Bidder / Consultant must have experience in 1. The Firm/ Agency should have offered similar consultancy services for preparation of at least one DPR/ Master Plan of comprehensive Urban Storm Water/ Water Supply/ Sewerage including survey/ planning/ designing etc. in Odisha for urban area housing societies/ Infra Projects. 2. Experience of similar consultancy work performed in India, like detailed Survey of urban utilities, design engineering for water supply / drainage / sewerage projects, preparing DPRs for water supply / drainage / Sewerage Projects, Housing Societies, Large Industries & etc. infrastructure projects of water supply / sewerage / drainage in the last 5 years.	Copies of Work Order/ Contract Document/ Completion Certificate from the Client / Authority

	3. The Bidder should have average financial turnover of at least Rs.30.00 Lakhs from consulting business only during the last 5 (Five) Financial Years.	Financial Details of the bidder along with copies of the audited balance sheet and Income & Expenditure Statement of last five year duly sealed and certified by the CA and the authorized representative of the bidder/consultants.
5	Bidder / Consultant shall furnish an undertaking about no black listed or debarred from any project. FY-20-21, FY-21-22, FY-22-23, FY-23-24. (If FY-23-24 not audited include FY-19-20)	Self-Declaration from the Bidder.

2 Documents / Formats needs to be submitted along with TECHNICAL PROPOSAL:

The bidder / consultants have to furnish the following documents duly signed in along with their Technical Proposal:

1-Covering letter **(TECH– 1)** on bidder's letter head requesting to participate in the selection process.

2-Copy of Certificate of Incorporation/ Registration

3-Copy of PAN

4-Copy of Goods and Services Tax Identification Number (GSTIN).

5-Copies of IT Return for the last **3 (Three)** Assessment Years

6-General Details of the Bidder

7-List of completed assignments of similar nature (Past Experience Details,) along with copies of contracts / completion certificates from previous Clients.

8-Undertaking for not having been black-listed by any Central / State Government / Any other autonomous bodies/International & National Organization in the recent past.

Each page should be signed by the authorized representative.

3.Validity of the Proposal:

Proposals shall remain valid for a period of **90 (Ninety Days)** from the date of opening of the technical proposal. The Client reserves the rights to reject a proposal valid for a shorter period as non-responsive and will make the best efforts to finalize the selection process and award of the contract within the bid validity period. The bid validity period may be extended on mutual consent.

Bid shall be enclose with -
Part 1 : Tender Fee/ Technical Proposal with proposed key personnel's
Part2 : Financial Proposal.

Performance Bank Guarantee: (PBG)

Within 15 days of notifying the acceptance of a proposal for award of contract, the qualified bidder shall have to furnish a Performance Bank Guarantee amounting to **3% of the Contract Value** from a scheduled commercial bank.

Anti-corruption Measure:

a. Any effort by Bidder(s) to influence the Client in the evaluation and ranking of financial proposals, and recommendation for award of contract will result in the rejection of the proposal.

b. Any recommendation for award of Contract shall be rejected if it is determined that there commended bidder has directly, or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the contract in question. In such cases, the Client shall blacklist the bidder either indefinitely or for a stated period of time, disqualifying it from participating in any related bidding process for the said period.

Language of Proposals:

The proposal and all related correspondence exchanged between the bidder and the Client shall be written in the **English** language. Supporting documents and printed literature that are part of the proposal may be in another language provided they are accompanied by an accurate translation of the relevant passages in English with self-certification for accuracy, in which case, for the purposes of interpretation of the Proposal, the translated version shall govern.

Legal Jurisdiction:

All legal disputes are subject to the jurisdiction of civil court of Barbil, Odisha. The client and the agency shall make every effort to resolve amicably, by direct negotiation, any disagreement or dispute arising between them under or arising from or in connection with the contract. Disputes not so resolved amicably within 30 days of receipt of notice of such as a dispute shall be resolved by a sole arbitrator nominated by the Dept. of Housing and Urban Development Dept. Govt. of Odisha.

Force Majeure:

For purpose of this clause, "Force Majeure" means an event beyond the control of the agency and not involving the agency's fault or negligence and not foreseeable. Such events may include, but are not restricted, wars or revolutions, fires, floods, riots, civil commotion, earth quake, epidemics or other natural disasters and restriction imposed by the Government or other bodies, which are beyond the control of the agency, which prevents or delays the execution of the order by the agency If a force Majeure situation arises, the agency shall promptly notify Client in writing of such condition, the cause thereof and the change that is necessitated due to the condition. Until and unless otherwise directed by the Client in writing, the Agency shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event. The agency shall advise Client in writing, the beginning and the end of the above causes of delay, within seven days of the occurrence and cessation of the Force Majeure condition. In the event of a delay lasting for more than one month, if arising out of causes of Force Majeure, Client reserve the right to cancel the contract without any obligation to compensate the agency in any manner for what so ever reason.

OBJECTIVE

The objective of the programme is to promote planned integrated development of the town to help creating durable public access and to improve quality oriented services in the town.

The broad objective of this proposed Project is to:-
Follow the Technical Guideline and checklist prescribed by MoHUA, GoI on "Storm Water Drainage System" copy enclosed.

Evaluation Process of RFP

TECHNICAL EVALUATION: Detailed evaluation process as per the following parameters will be adopted for evaluation of the proposals.

Sl. No.	Bid Evaluation Parameters	Allocation of Marks
1	The bidder / MEP Consultant should have been in the consulting business for more than Five years from the date of Incorporation on the last date of submission of the proposal.	05
2	The bidder / MEP Consultant having experience of similar consultancy work performed in India, like detailed Survey of urban utilities, design engineering for water supply / drainage / sewerage projects, preparing DPRs for water supply /Drainage /Sewerage Projects, large urban infrastructure projects/ housing societies, large industries & etc. of water supply / sewerage / drainage in the last 8 years 1 similar project of minimum value Rs 30 Cr – 5 marks (4 projects for 5 marks each) or 2 similar projects of value more than Rs 50 Cr – 20 marks or 1 similar projects of value more than Rs 100 Cr – 20 marks Completion or Ongoing storm water drainage DPRs in urban local bodies of the state of Odisha-5 Marks	25
3	Work Plan & Approach and Methodology- submitted along with Proposal (Current ongoing Storm Water Management work is under consideration) The presentation slides should be attached in the technical proposal for evaluation.	35
4	Qualifications and competence of the Key Professional staff for the assignment 1- Team Leader-1 Nos.- B.E./ B. Tech in Civil preferably with Master's Degree with minimum 15 years experience in water resources for TWMS for large industries, urban water supply / sewerage / drainage projects -10 marks 2- Project Engineer-2 Nos.-B.E. Civil preferably with minimum 10 years experience in water and waste water treatment system in Urban Water Supply / Sewerage / Drainage Projects -15 marks 3- GIS Expert-1 Nos.- Masters/ Degree in Geology /Geography / Geoinformatics /Remote Sensing with adequate experience in Urban Infrastructure Projects -10 marks	35

70% of technical mark shall be considered for evaluation selection process with QCBS 70:30.

Municipal services in the sector city / planning /master plan / sustainability / utility shall be taken into selection consideration.

Selection Process (QCBS 70:30)

Bidders who will secure above 70% marks from the total (100 marks) in the technical will be called for financial evaluation. QCBS approach for storm water drainage DPR Bidders who secure above 70% marks from the total (100 marks) in the technical proposal will be called for financial evaluation.

Joint Venture is not allowed in this project.

The financial proposal (FP) shall be evaluated as SF= 100*FMin/Fb, In which in SF is the financial scope, FMin is the *minimum price quoted by any bidder* and Fb = *price quoted by the bidder.* The weights to be given to the technical and financial proposals are T=0.70, P=0.3

Scores of the Commercial Evaluation would be weighed prorate on a scale of 100. The Bidder with the lowest commercial quote shall be awarded 100 marks. The marks obtained by the bidders in the Financial Bid evaluation shall be considered as Financial Score (FS).

The Financial Score of the other Technically Qualified Bidders shall be computed as per the following formula

FS=1OOx (Fmin/Fb)

Where:

FS = Financial Score for the bidder under consideration

Fmin = minimum price quoted by any bidder

Fb = price quoted by the bidder

The Technical Score (TS) and the Financial Score (FS) secured by each bidder shall be subjected to the Technical Weightage WT= 0.70 (the weight given to the technical proposal) and Financial Weightage WF = 0.30 (the weight given to the financial proposal).

The Combined Technical and Financial Score (S) for the bidder (s) shall be computed as per the following formula.

S = (TS x 0.7) + (FS x 0.3)

The selection of L1 bidder shall be decided to the highest combined score of Technical and financial score.

Time lines, stages of deliverables and content of each deliverable.

Deliverables vis-a-vis timeframe

Deliverables	Description of Items/Deliverables	Corresponding time frame (Monthly)
D1	Topographic Survey and Survey Reports	1– 3 Months
D2	Preparation of Detailed Project Report & Master Plan	4– 6 Months
D3	Tendering for Construction	7– 9 Months

Payment Terms and Schedule form

The Payment of Consultancy Fees will be made as per the following table:

Sl. No.	Payment Terms	Schedule	Disbursement Schedule
1	Completion of Topographic Survey and Submission of Survey Report	3rd Month	20% Survey and Submission of Survey Report
2	Preparation of draft DPR & Submission	6thMonth	20% Submission ofdraft DPR
3	Preparation of DPR and submission of Final DPR incorporating observations and compliance / Master plan and technical sanction from competent authority.	7thMonth	30% Submission of Final DPR
4	Preparation of Specifications and submission of Tender Documents for construction & assist in bidding system of municipality for 12 months	9thMonth	30%. Assist in tendering system & Supervision of QC & QA and reporting to municipality (divided in 12 months)

The payments will be made upon submission of an invoice backed by consultant. Payment of professional fees would be made within three weeks of submission of Invoices.

Bidder's Organization (General Details)

Sl. No.	Description	Full Details
1	**Name of the Bidder/ MEP Consultant**	
2	**Address for communication:** Tel : Fax: Email id:	
3	**Name of the authorized person signing & submitting the bid on behalf of the Bidder:** Mobile No. : Email id:	
4	**Registration/Incorporation Details** Registration No: Date &Year.:	
5	**Local office in Odisha Please furnish contact details**	
6	**Bid Processing Fee Details** Amount: DD/No. : Date: Name of the Bank:	
7	**EMD Details** Amount: TDR/FD/Postal Deposit No. : Date: Name of the Bank:	
8	PAN Number	
9	Goods and Services Tax Identification Number (GSTIN)	
10	Willing to carry out assignments as per the scope of work of the RFP	**YES**
11	Willing to accept all the terms and conditions as specified in the RFP	**YES**

Authorized Signatory [*In full and initials*]:_____

Name and Designation with Date and Seal:_____

(BIDDER'S PAST EXPERIENCE DETAILS)

Table-1(List of <Nos>completed assignments only of similar naturein any sector During last<5> years)**

Sl. no.	Period	Name of the Assignment	Name of the Client	*Contract Value (in INR)	Date of Award / Commencement of assignment	Date of Completion of assignment	Remarks if any
A	B	C	D	E	F	G	H
1							
2							
3							
4							
5							

Authorized Signatory [In full and

initials]:

Name and Designation with Date and

Seal:

PROPOSED WORKPLAN TO CARRYOUT THE ASSIGNMENT

Week	1 step	2 step	3 step	4 step	5 step	6 step
Sequence of Study Activities/ SubActivities ↓						

bidders requested to fill and propose their work plan.

FINANCIAL
PROPOSAL– II
COVERING LETTER
(In Bidder's Letter Head)

To

The Executive Officer,
Barbil Municipality, Barbil
Dist. Keonjhar (Odisha)

Subject: Financial bid

Price offer for Proving Consultancy Services for preparation of Master Plan/ DPR including Topographical Survey, Design and technical support assistance for Improvement of Drainage System of Barbil Municipality in the District of Keonjhar, Odisha.

Sir

I, the undersigned, offer to provide the consulting services for [**Price offer for Proving Consultancy Services for preparation of DPR including Topographical Survey, Design and technical support assistance for Improvement of Drainage System Barbil Municipality in the District of Keonjhar, Odisha** in accordance with your request for proposal No._____, Dated:_____.Our attached Financial Proposal is for the sum of _____ [***Insert amount(s)in words and figures****].

SL No	Item	Unit	Rate (in Rs.) for whole assignment (Excluding GST)	
			In Figure	**In Words**
1	Preparation of Comprehensive Drainage Master Plan along with DPR for Storm Water Drainage System of **Barbil Municipality** area inconformity with the provisions of detailed scope of work mentioned in the tender documents and also obtaining technical sanction from competent authority.	Lump-sum (LS) Total AoI:45.89 Sq Km		

The above quoted amount is exclusive of the taxes applicable as per GST Act. I do hereby undertake that, in the event of acceptance of our bid, the services shall be provided in respect to the terms and conditions as stipulated in the RFP document.

Yours faithfully,

Authorized Signatory [*In full and initials*]

Name and Designation of Signatory with Date and Seal:

Address of the Bidder:

ERFORMANCE BANK GUARANTEE FORMAT

To,

The Executive Officer,
Barbil Municipality, Barbil,
Dist. Keonjhar (Odisha)

WHEREAS_____ (Name and address of the Consultant) (hereinafter called "the Consultant") has undertaken, in pursuance of RFP No. _____ dated._____ to undertake the service _____ (description of services)(herein after called "the contract")

ANDWHEREAS it has been stipulated by _____ (Name of the Client) in the said contract that the Consultant shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the contract;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the Consultant, up to a total of _____ (amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the consultant to be in default under the contract and without caviler argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

Whereby waive the necessity of your demanding the said debt from the consultant before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the consultant shall in any way release us from any liability under this guarantee and whereby waive notice of any such change, addition or modification.

This performance bank guarantee shall be valid until the day of _____, <Year>

Our branch at _____ (Name & Address of the Bank) is liable to pay the guaranteed amount depending on the filing of claim and any part thereof under this Bank Guarantee only and only if you serve upon us at our _____ _____ branch a written claim or demand and received by us at our _____ branch on or before Dt._____ otherwise bank shall be discharged of all liabilities under this guarantee thereafter.

..... **(Signature of the authorized officer of the Bank)**

..... **Name and designation of the officer**

..... **Seal, name & address of the Bank &Branch**

GOVERNMENT OF ODISHA
HOUSING AND URBAN DEVELOPMENT DEPARTMENT
***

File No. HUD-FUND-SCH-0001-2021 **Letter No. :** 850 **Date :** 09.01.2024

From

Sri Sangramjit Nayak,
Director Municipal Administration

To

The Commissioner,
All Municipal Corporations (Except Bhubaneswar Municipal Corporation)
The Executive Officer,
All Municipalities (Except Puri Municipality)/ All NACs

Sub:Preparation of Drainage Master Plan under the 5th SFC recommended scheme, "Storm Water Drainage-Preparation of Drainage Master Plan" as per the Manual on Storm Water Drainage System published by MoHUA, GoI.

Madam/Sir,

With reference to the subject cited above, I am directed to say that 5th State Finance Commission has recommended a sum of ₹ 200 Crore as Grants-in-aid under "Storm Water Drainage" covering a period of six years for preparation of proper Drainage Master Plan in each ULB of the State to combat the storm water drainage problems. Accordingly, during the period 2020-21 to 2022-23, a sum of ₹99.99 Crore has been released in favour of 112 ULBs for preparation of drainage master plan.

In this regard, some ULBs have prepared the DPR and submitted to the Department. During technical scrutiny of the DPRs, it is found that those are not in proper format. To avoid such type of error, it has been decided to follow the Technical Guideline and checklist prescribed by MoHUA, GoI on "Storm Water Drainage System" (Copies enclosed).

You are therefore, requested to prepare the DPR of Drainage Master Plan of your ULB strictly following the enclosed guideline and submit it through concerned ILW for necessary action at this end.

Yours faithfully,

9/1/2024
Director Municipal Administration

Technical Guidelines to be followed while Preparation of DPR for : Comprehensive Drainage Master Plan and DPR for Storm Water Drainage System.

Particulars		Guidelines w.r.t. Manual on Storm Water Drainage Systems – Corresponding Clauses & Tables	
DPR	Index Page		
	Officers Associated for preparation of the DPR		
Checklist		Appendix A 2.1	Checklist for Submission & Scrutiny of Detailed Project Report (Storm Water Drainage) (Swd) including enclosed Certificate
	Checklist for Estimates - Annexure-A – vide OM No. 17427/W dt.03-10-2006		
Preface Report	Objectives of Planning and Investigation	Clause 2.2	ix. Strategy for arresting pollutants with urban runoff from entering into water bodies
	Survey and Investigation	Clause 2.3.2	Final data should be converted in Environment System Research Institute (ESRI) (Shapefile) format with its defining projection and survey collected attributes in the requisite database format. The layout plan should be prepared and integrated on the GIS base with a selected computer model. f) Mapping of storm water drainage layout on GIS platform
	Environmental Impact Assessment	Clause 2.13.1.6	
Engineering Design	Proposed Project and detailed design	Clause 2.13.1.5	v. Frequency analysis for design storms as recommended for the project area.
	Peak runoff from the catchment by rational method		Weighted average C
		Clause 3.4	Rainfall Analysis
		Table 3.1 to Table 3.9	Rainfall Intensity 'I' mm/hr.
		Table 3.19	Computation to prepare Hyetograph
		Clause 4.4.1.6	Time of Concentration in storm drainage system (tc)
		Clause 4.4.2.1	Travel Time – from Hyetograph, Time Area Curve
		Clause 5.3.2	Freeboard in open channel (iii) Beyond 900mm & up to 1500mm bed width – 30cm For larger drains, the freeboard shall be higher up to 90cm depending upon the discharge.
		Clause 5.3.5	Hydraulically Efficient Channel Section
		Table 5.4	Most Efficient Sections
		Clause 5.4	Design Sheet
		Table 5.7	Computation sheet for Storm Water Open Channel
	Reinforcement		Minimum Reinforcement confirming to I.S.: 456 / 2000, Clause 26 – "Requirements Governing Reinforcement and Detailing" including it's Sub-Clauses

Technical Guidelines to be followed while Preparation of DPR for : Comprehensive Drainage Master Plan and DPR for Storm Water Drainage System.

Particulars		Guidelines w.r.t. Manual on Storm Water Drainage Systems – Corresponding Clauses & Tables
Estimate	Lead Statement & Analysis of Rates	DMF & EMF (10% & 5%) on Royalty only + Additional Charges, on Minor Minerals, as notified by District Administration - inclusion in estimating along with appending it's copy with the DPR. Labour Rate w.e.f. 01.10.2023, vide Notification No. 6158 / LC, dt. 04.10.2023 Labour & ESI Deptt., GoO Accuracy in computation for volume of earthwork w.r.t. topography, in stead of considering equal depth all along the drain length, preferably by standard computer software Precast U-Shaped Drain along with Drain Cover Slab upto 1000mm width for ease of workability and time over-run.
DPR	Comprehensive	Item-wise AoR, Cost of Materials and Machineries etc. (by discarding irrelevant items and preparing the DPR compact but elaborate)
	Land Schedule	Private, Government and Forest Land – Requirement for the project

APPENDIX A 2.1
CHECKLIST FOR SUBMISSION & SCRUTINY OF DETAILED PROJECT REPORT (STORM WATER DRAINAGE) (SWD)

(to be filled in and certified by the highest city –level Officials, both technical and administrative, such as Chief Engineer/City Engineer/ Municipal Commissioner)

Instructions:

1. The DPR shall be formulated as per the guidelines are given in Manual of Storm Water Drainage Systems published by the Ministry and as per the Department procedures.
2. DPR shall be technically sanctioned by the Competent Authority the State Govt./ULB before forwarding it to the Ministry.
3. Each and every page has to be signed at the bottom by the officials.
4. Each field has to be filled in appropriately as 'yes', 'no', 'not required', 'not done', 'not used' etc. No field has to be left blank. Give explanatory comments wherever 'no' is indicated.
5. Non- definite entries such as 'will be done later', 'will be furnished later' etc. will not be accepted.

CERTIFICATE:

This is to certify that the undersigned have read the contents of the checklist fully and have responsibly made the entries true to the best of knowledge and understanding. In case the information furnished in the checklist enclosed is found to be incorrect for any reason, whatsoever, the undersigned may be held liable for disciplinary action as per applicable Government rules.

Certified that

(i) The designs and drawings have been approved by the Competent Authority.
(ii) The detailed estimates and cost estimates are as per the current schedule of rate and/or rate analysis and latest Pro-forma invoices (current market rates).
(iii) The DPR has been technically sanctioned by the Competent Authority in the State Govt./ULB.

Signed: Signed:
Name: Name:

CHECKLIST FOR SUBMISSION & SCRUTINY OF DPR
(STORM WATER DRAINAGE SYSTEM)

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
1.	**GENERAL COMPONENTS**	
1.1	Name of the town/city/District/State for which scheme has been formulated with name of the scheme (a) Name of the City/Town: (b) Name of the District: (c) Name of the State : (d) Name of the Scheme:	
1.2	Date of DPR appraised by State Level Nodal Agency (SLNA) and whether a copy of appraisal report (duly authenticated by the competent authority) has been forwarded with DPR. (a) Date of appraisal: (b) Name of the appraisal agency: (c) Original Estimated cost: (d) Appraised cost: (e) Major comments/observations made by appraisal agency.	
1.3	Whether the commitment to launch the scheme immediately after approval of Govt. of India / Administrative approval of the scheme is appended in DPR.	

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
1.4	(a) Whether Project formulation justification (need for the project) has been furnished in DPR. Please justify the need of the project. Justification: (b) Whether the executive summary of the project is furnished in the DPR	
1.5	Whether linkages of this scheme have been established with other ongoing Storm water drainage schemes being funded by the Central/State Govt./other agencies if any. Please furnish the details.	
1.6	Whether the map showing administrative and political jurisdiction of the project area has been given in DPR. The area within Municipal limit : ..... sq.km. The extent of area considered in the DPR : .....sq.km. Additional area (beyond Municipal limit) considered in the DPR and justify the reasons: .....sq.km	
1.7	Whether the land use pattern of the city/town/ project area as per the approved Master Plan has been given in DPR.	
1.8	Whether the DPR including the design, drawings, cost estimates, analysis of rates has been authenticated by Competent Authority of State Govt./ ULB and Quasi-Technical sanction of DPR / Technical & Financial Verification Certificate has been attached with DPR	
1.9	In case any proposed pumping main for storm drainage lines is crossing Railway line/ Highway & their bridge (wherever applicable), whether the clearance from concerned authority such as State Pollution Control Board (SPCB), Highways, PWD, Railways has been obtained and copies of the permission and their estimate for the same has been provided in DPR. If not, the present status of action initiated may be furnished below.	

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
1.10	Whether the provision for separate electric feeder line to the storm water pumping stations (to take care of frequent power failure and voltage fluctuation problem) from HT line and an agreement between Electricity Department and Urban Local Bodies (ULBs) has been furnished in the DPR	
1.11	Whether the commitment from the Electricity Department for un-interrupted power supply (for pumping stations) is obtained	
1.12	Whether the topographic map of the city/town/project area on GIS has been given in DPR/Zone wise maps to scale showing all streets.	
1.13	Whether soil investigation report – borehole logs at least at a grid of 1 km x 1 km or Geological Survey Data has been forwarded with DPR.	
1.14	Whether Contour map of the project area has been annexed with the DPR.	
1.15	Whether resolution from the ULB for meeting the regular expenditure on O&M of the storm water drainage system is enclosed in DPR.	
2. ENGINEERING COMPONENTS		
2.1	Storm water drainage network detailing	
	The total length of drain & other infrastructure (Total length and drains which are in good condition and can be integrated with proposed planned drainage system): Tertiary drain : .....Km (total) .....KM (drains in good condition) Secondary drain : .....Km (total) .....KM (drain in good condition) Primary drain : .....Km (total) .....KM (drain in good condition) SWD Pumping Stations: Nos..... Capacity of Pumps.....Length of Pumping Mains..... Km	
	Proposals for Rehabilitation Tertiary drain : .....Km	

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
	Secondary drain : .....Km Primary drain : .....Km SWD Pumping Stations: Nos..... Capacity of Pumps.....Length of Pumping Mains..... Km	
	Proposals for new construction Tertiary drain : .....Km Secondary drain : .....Km Primary drain : .....Km SWD Pumping Stations: Nos..... Capacity of Pumps.....Length of Pumping Mains..... Km	
2.2	Total length of road : .....Km	
2.3	Please furnish various project components (major components)	
2.4	Project Area and population (i) Please furnish the details of city/project area, (a) Area of the town/city (municipal limit): .....Sq. km (b) Extent of the project area considered in the DPR: .....sq. km (c) Additional Area(beyond the municipal limit) considered in the DPR:.....sq.km (d) No. of Households (as per 2001 and 2011 census): (ii) Whether population projection has been adopted as per CPHEEO Manual and given in DPR	

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
	(a) City population As per 2001 Census :.....lakhs As per 2011 Census : .....lakhs Initial stage : ..... lakhs +floating population (if any)---------lakh (.....AD) Intermediate stage : ..... lakhs+ floating population (if any)---------lakh (.....AD) Ultimate stage : ..... lakhs+ floating population (if any)---------lakh (.....AD) Population growth rate adopted: ..... %/ year (based on the past 5-6 decadal growth rate) Demographic Method adopted and justification : (b) Whether the population projection has been made in consonance with the Developmental Master Plan (c) Project Area Initial stage : ..... lakhs Intermediate stage : ..... lakhs Ultimate stage : ..... lakhs Population growth rate adopted: ..... %/ year (based on the past 5-6 decadal growth rate) (d) No. of wards (within municipal limit) :	

<table>
<tr><th>S. No</th><th>Description</th><th>Write 'Yes' or 'No' etc. in the column below
If Yes, give Page No./DPR volume reference. If No, reasons thereof</th></tr>
<tr><td>2.5</td><td>Whether the development master plan with land use pattern, identification of existing and future roads/streets, water bodies such as lakes and ponds, natural drains and rivers has been furnished for the urban agglomeration</td><td></td></tr>
<tr><td>2.6</td><td>If yes, give the master plan year.
If no, give present status of master plan preparation;</td><td></td></tr>
<tr><td>2.7</td><td>Land use patterns, present and proposed preferably on shapefile format
<table>
<tr><td rowspan="2" colspan="2">Land Use</td><td colspan="2">Master Plan</td><td colspan="2">City/ULB Area</td><td colspan="2">Project Area</td></tr>
<tr><td>Present Master Plan: Year .....</td><td>Proposed Master Plan: Year .....</td><td>Present Area ..... (Year .....</td><td>Proposed Area ..... (Year .....</td><td>Present Area ..... (Year .....</td><td>Proposed Area ..... (Year .....</td></tr>
<tr><td rowspan="2">Total Area</td><td>Hectares (Ha)</td><td>.....</td><td>.....</td><td>.....</td><td>.....</td><td>.....</td><td>.....</td></tr>
<tr><td>%</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr>
<tr><td rowspan="2">Residential area</td><td>Ha</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>%</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Area under Roads>3m wide</td><td>Ha</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>%</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Area under Roads & streets <3 m wide</td><td>Ha</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>%</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Ha</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table></td><td></td></tr>
</table>

S. No	Description								Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
	Markets (wholesale, vegetable, grain, other	%							
	Area under Railways, Airports	Ha							
		%							
	Institutional Area	Ha							
		%							
	Industrial Area	Ha							
		%							
	Green, open, park, an agricultural area	Ha							
		%							
	Lakes, Ponds	Ha							
		%							
	Natural drains, sub-drain, nallahs, rivers	Ha							
		%							
	Give Coefficients of Imperviousness adopted for design for various land uses:								

S. No	Description			Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
	Land use classification	Coefficient of Imperviousness as per Manual / Derived	Coefficient of Imperviousness as per DPR	
	Residential	0.60 to 0.75		
	Roads, paved surface of footpaths	1.00		
	Commercial	0.70 to 0.90		
	Paved markets	1.00		
	Unpaved markets	0.40 to 0.70		
	Mixed type markets	0.40 to 0.90		
	Mixed Development	0.60 to 0.90		
	Industrial	0.60 to 0.90		
	Institutional	0.60 to 0.90		
	Large establishments			
	PSUs	0.60 to 0.90		
	Railways	0.60 to 0.90		
	Airports	0.60 to 0.90		
	Lakes, ponds	1.00(considering FSL)		

<table>
<tr><th>S. No</th><th>Description</th><th>Write 'Yes' or 'No' etc. in the column below
If Yes, give Page No./DPR volume reference. If No, reasons thereof</th></tr>
<tr><td>2.8</td><td>List out all-natural drains in the city/project/master plan area. Give the names (IDs)and length
Natural storm water drains preferably on GIS maps (use additional sheets if required):
<table><tr><th>S No</th><th>Name / ID</th><th>Length, Km</th></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table></td><td></td></tr>
<tr><td>2.9</td><td>Give width-wise detailing of natural storm water drains(use additional sheets if required):
<table><tr><th>S No</th><th>Width</th><th>Length, Km</th></tr><tr><td></td><td>Upto 2m</td><td></td></tr><tr><td></td><td>>2m upto 5m</td><td></td></tr><tr><td></td><td>>5m upto 10m</td><td></td></tr><tr><td></td><td>>10m upto 30m</td><td></td></tr><tr><td></td><td>>30m(give further widths if necessary)</td><td></td></tr></table></td><td></td></tr>
<tr><td>2.10</td><td>Whether the storm water drainage network has been divided into basins, sub-basins, catchments and overlaid on the development master plan? Give details.</td><td></td></tr>
</table>

<table>
<tr><th>S. No</th><th>Description</th><th>Write 'Yes' or 'No' etc. in the column below
If Yes, give Page No./DPR volume reference. If No, reasons thereof</th></tr>
<tr><td>2.11</td><td>Demarcating of zones and subzones as per the map of the project area (use additional sheets if required):
<table>
<tr><td>Whether the Master Plan Area/Project Area has been divided into catchments and sub-catchments for Storm Water Management</td><td colspan="3">Yes/No</td></tr>
<tr><td>Total no. of catchments (storm water drainage Zones)</td><td colspan="3"></td></tr>
<tr><td>Name/No. of catchment (zones)</td><td>1</td><td>2</td><td>3 etc</td></tr>
<tr><td>Area under catchment (various zones), Ha.</td><td></td><td></td><td></td></tr>
<tr><td>No. of sub-catchments (sub-zones) under each zone</td><td></td><td></td><td></td></tr>
<tr><td>Describe boundaries of each catchment (use separate pages) Ridge/Road/Rly. Line etc.</td><td colspan="3"></td></tr>
<tr><td>Give name/no. of each sub-catchment, its boundaries and arial extent (use separate pages)</td><td colspan="3"></td></tr>
<tr><td>Give land-use classification for each catchment and sub-catchment with totals ((use additional sheets if required))</td><td colspan="3"></td></tr>
<tr><td>Whether Catchment areas which are out of municipal limit likely to contribute in the project area has been taken into account</td><td colspan="3"></td></tr>
</table></td><td></td></tr>
<tr><td>2.12</td><td>Details of each sub-catchment (use additional sheets if required):
<table>
<tr><td>Name/ID No of sub-catchment</td><td></td></tr>
<tr><td>Total area</td><td></td></tr>
<tr><td>Define boundaries</td><td></td></tr>
<tr><td>Land use classification</td><td></td></tr>
</table></td><td></td></tr>
</table>

S. No	Description		Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
	Area under..... Residential		
	.....Roads etc.		
	.....Institutional		
	.....Industrial		
	.....Lakes/Ponds		
	.....Any other (add rows)		
	Total of above		
	Name/ID of the main drain of sub-catchment		
	Total length of the main drain		
	Width-wise length of the main drain (proposed)		
	<2m		
	>2m – upto 5m		
	>5m- 10 m		
	>10m-30m		
	>30m		
	Total of above		
	Whether boundary of main drain demarcated and protected	Yes/No	
	Length of main drain protected		
	Length of main drain not protected		
	Action, if any for full protection		
	Whether drain outfall free or obstructed?		
	Invert level of drain outfall		
	Invert at outfall		

S. No	Description		Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
	at + 30m		
	at +60m		
	at +90m		
	at +120m : etc		
	Storm water disposal body HFL Normal water level Bed level		
	Whether drain trained/untrained		
	Trained length		
	Untrained length		
	Any constrictions like culvert		
	Identify each such culvert		
	Drain -- Bed surface material & condition		
	Manning's 'n' value		
	Sidewalls material & condition		
	'n' value		
	Combined 'n' value at every multiple o.1 m depth of flow		
2.13	Coefficient of Roughness for use in Manning's Formula: (in the DPR column, fill values only for the material used and mark others as 'not used')		

S. No	Description					Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
		Type of Material		'n' as per Manual	'n' as per DPR Design	
	1	Salt-glazed Stoneware Pipes	a) Good	0.012		
			b) Fair	0.015		
	2	Cement Concrete Pipes(with collar joints)	a) Good	0.013		
			b) Fair	0.015		
	3	Spun Concrete Pipes (RCC & PSC) with socket & spigot joints (Design value)		0.011		
	4	Masonry	a) Neat Cement Plaster	0.018		
			b) Sand & cement plaster	0.015		
			c) Concrete –steel troweled	0.014		
			d) Concrete – Wood troweled	0.015		
			e) Brick in good condition	0.015		
			f) Brick in rough condition	0.017		
			g) Masonry in bad condition	0.020		
	5	Stone Work	a) Smooth dressed Ashlar	0.015		
			b) Rubble set in cement	0.017		
			c) Fine, well-packed gravel	0.020		
	6	Earth	a) Regular surface in good condition	0.020		
			b) In ordinary condition	0.025		
			c) With stones and weeds	0.030		
			d) In poor condition	0.035		
			e) Partially obstructed with debris or weeds	0.050		

S. No	Description					Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
	7	Steel	a) Welded	0.013		
			b) Riveted	0.017		
			c) Slightly tuberculated	0.020		
			d) With spun cement mortar lining	0.011		
	8	Cast Iron	a)Unlined	0.013		
			b)With spun cement mortar lining	0.013		
	9	Asbestos Cement		0.011		
	10	Plastic (smooth)		0.011		
2.14	Whether the authenticated data of autographic rainfall data for the project area for the last 25 to 30 years or more has been obtained from India Meteorological Department and furnished in the DPR? Whether it has been analysed as described in the CPHEEO Storm Water Drainage Manual and the intensity – duration – frequency (IDF) curve for the project area has been drawn? Give details as per the model below:					
2.15	Rainfall Data & Analysis (use additional sheets if required):					

No. of years of autographic rainfall Data from IMD(India Meteorological Department)	
Whether autographic rainfall data analysed and arranged in duration (minutes) and intensity (mm/hr)	
Duration-wise compilation of rainfall data (refer Manual)	
Frequency of storms of different duration	

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof

Total no. of rainfall events of 5 min duration (arranged in ascending intensity)	
Similarly, events of 10 min duration (arranged in ascending intensity)	
Similarly, events of 15 min duration	
20 min duration	
30 min duration	
40 min duration	
60 min duration	
90 min duration	
120 min duration	
150 min duration	
180 min duration, etc	

Storm Frequency (or Storm Return Period / Flooding design interval):

Land Use Classification	Storm frequency as per Manual	As per DPR Design
a)Residential Areas		
i) Peripheral areas	Twice a year	
ii) Central and comparatively high priced areas	Once a year	
b)Commercial and High-priced areas	Once in 2 years	

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof

Analysis of Frequency of Storms (Rainfall Events)(Historical data)

Duration of rainfall, in minutes	No. of storms of particular duration of the intensity(mm /hr) given below or more during the data period							
	20	30	35	40	45	50	60	Etc.
5								
10								
15								
20								
30								
40								
60								
90								
120								
150								
180								
etc								

Time (Duration) – Intensity values of storms from the step curve(for use in log-log graph)

i '(mm/hr)	*t* (min)
20	
30	

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof

35	
40	
45	
50	
55	
60	

Derived values of *i* & *t* from log-log graph of above table.

$i = a/t^n$

Derived value of 'a' =

Derived value of 'n' =

Storm Intensity Equation

$i = a/t^n$

i = ...

Time of concentration:

$$t_o = \frac{0.994\ (1.1-C)L^{0.5}}{S^{0.333}}$$

Where,

t_o =Time of surface flow (in minutes)

C = Rational Method runoff coefficient

L = Length of surface flow (m)

S = Surface Slope, in percentage (%)

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
	Note: If slope (S) is expressed as a ratio, then the formula to be applied is $t_o = \frac{0.218\,(1.1 - C)L^{0.5}}{S^{0.333}}$ Whether the IDF (Intensity-Duration-Frequency) curve has been drawn –Yes/No	
2.16	Whether Best Management Practices like Rainwater Harvesting and Innovative Practices are given in DPR?	
2.17	Whether the provision of the land/land acquisition for the SWD pumping station/mains, SWD network, if any, has been made as per 30 years requirement and future expansion in the DPR (a) Total requirement of land for: SWD Pumping Station : ..... Hectares Laying of SWD pumping mains : ..... Hectares SWD network : ..... Hectares Total : ..... Hectares Whether land in possession with Implementing Agency : Hectares (b) Whether Govt. land is yet to be transferred to the Implementing Agency and specify time required for transfer : .....Hectare, ... months (c) Whether private land under acquisition and time required for acquisition: .....Hectare, ... months (d) Status of action initiated for transfer of Govt. land and acquisition of private land (please specify) :	

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
2.18	Whether all components of storm water drainage system such as inlets, catch pits, SWD pipelines/drains, points of confluence and natural drains with outfalls have been designed as per the CPHEEO Manual and detailed drawings have been provided in the DPR	
2.19	Give Design values and infrastructure proposals for each component(use additional sheets)	
2.20	Whether the Computer-Aided Design of SWD system has been furnished in DPR. Please enclose design input files (sheets) and output files (sheets) separately	
2.21	Whether the rising main of SWD system, if any, has been designed for catchment flows with respect to time of concentration and checked for a minimum velocity of 0.6 m/s and maximum velocity of 3 m/s?	
2.22	Whether node spacing while designing have been adopted as per CPHEEO Manual?	
2.23	Whether the designs of SWD pipes/drains have been checked for a minimum self-cleaning velocity of 0.6 m/s by providing proper slope	
2.24	Whether surge/water hammer analysis for rising main has been calculated and furnished in the DPR	
2.25	Whether the provision for rising main units, wherever needed, such as thrust blocks, anchor blocks, expansion joints, scour/drain valves, air/vacuum releases valves and surge protection devices have been provided in the DPR	
2.26	Whether drawings to scale of L-sections of SWD drains/pipelines with all details such as ground level, crown level, invert level, depths of excavation, bedding details etc., have been furnished in DPR	
2.27	Whether the configuration of the pumps proposed in SWD/drainage pumping stations is in conformity with the general guidelines of CPHEEO Manual for conveying maximum design flood, need for standby and operational capability above high flood level (HFL)	

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
2.28	Whether the pipe material has been selected considering the topography, efficiency in service, ease of laying and economy in DPR	
2.29	Whether bedding conditions for different reaches of the proposed SWD pipelines/drains have been designed in the DPR as per CPHEEO Manual with reference to soil characteristics	
	Class A Bedding: Length proposed .....Km in soils of ..... Classification	
	Class B Bedding: Length proposed .....Km in soils of ..... Classification	
	Class C Bedding: Length proposed .....Km in soils of ..... Classification	
2.30	Whether a detailed note on performance of existing SWD/drainage network and pumping station, if any has been furnished in the DPR	
2.31	Whether SWD system has provision for flood diversion to water bodies and for enabling ground water recharge	
2.32	Whether the ULBs certificate to the effect that no municipal sewage shall be discharged into the SWD system has been provided in the DPR	
2.33	Whether Bill of Qualities (BOQ) and cost estimates of individual components of drainage system prepared as per latest SOR and copy of latest Schedule of Rates (SOR) and Pro-forma invoices have been annexed with DPR. (a) Schedule of Rates adopted (please specify the year): ----------year (b) In case the SOR adopted is old, please specify the cost index for escalation approved by State Govt. (c) Any price escalation proposed in cost estimates as notified by State Govt. (d) Whether analysis of rate has been worked out for all the items and appended with DPR	

<table>
<tr><th>S. No</th><th>Description</th><th>Write 'Yes' or 'No' etc. in the column below
If Yes, give Page No./DPR volume reference. If No, reasons thereof</th></tr>
<tr><td></td><td>(e) Whether Bill of Quantities of individual component has been furnished in DPR
(f) Whether lump sum(LS) provision for any item has been proposed, please specify</td><td></td></tr>
<tr><td rowspan="2">2.34</td><td>Whether detailed drawing, estimation & detailed BOQ for ancillary works such as boundary wall/fencing, approach & internal road, external electrification, buildings, site development/landscaping etc. has been provided in the DPR for any SWD Pumping Station</td><td></td></tr>
<tr><td>Give the General Abstract Cost Estimate and Component-wise or package-wise Abstract Cost Estimate: (use additional sheets if required)</td><td></td></tr>
<tr><td>2.35</td><td>Whether provision for DG set has been made in the DPR to tide over interruptions in power supply, if any</td><td></td></tr>
<tr><td>2.36</td><td>If yes, whether the calculations to arrive at the capacity of the same has been mentioned in the technical reports</td><td></td></tr>
<tr><td>2.37</td><td>Whether provision for road restoration has been made as per CPWD/ State PWD/ Urban Local Body norms</td><td></td></tr>
<tr><td>2.38</td><td>Give the List of Tender Packages made for 'notice inviting tender' (Use additional sheets if required) . Furnish the title-wise Tender packages and their value.</td><td></td></tr>
<tr><td>2.40</td><td>Calculate service level benchmark as per MoUD. Please furnish SLB.
<table>
<tr><th>Sl. No.</th><th>Indicator</th><th>Before implementation of the project</th><th>After implementation of the project</th><th>Benchmark</th></tr>
<tr><td>1.</td><td>Coverage</td><td></td><td></td><td>100%</td></tr>
<tr><td>2.</td><td>Incidence of waterlogging</td><td></td><td></td><td>0 numbers</td></tr>
</table></td><td></td></tr>
<tr><td>2.41</td><td>Whether project implementation period of project has been furnished in DPR
Specify the implementation period:.....year</td><td></td></tr>
</table>

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
2.42	Whether detailed BAR Chart and PERT/CPM network showing implementation schedule has been furnished in DPR	
2.43	Whether Internal rate of return (IRR) / Economic rate of return (ERR) has been furnished in DPR	
2.44	Whether traffic diversion/ control arrangements for public and workers' safety, arising out of construction phase of storm water drainage works have been furnished in the DPR	
2.45	Whether Institutional and financial status of Project Executing Agency (PEA) has been reported in DPR	
2.46	Whether Operation & Maintenance cost and revenue generation details (O & M Framework – existing & proposed) has been furnished in DPR (a) Existing tariff / cess / charges (in Rs.): Residential -- Commercial -- Institutions -- Industries -- (b) Proposed tariff/cess/charges (in Rs.) Residential -- Commercial -- Institutions -- Industries --	
	(c) Annual O & M cost (Rs. in lakhs) (i) Existing (last 5 years)	1 2 3 4 5

S. No	Description	Write 'Yes' or 'No' etc. in the column below If Yes, give Page No./DPR volume reference. If No, reasons thereof
	(ii) Proposed	
2.47	(d) Annual Revenue (Rs. in lakhs) (i) Existing (last 5 years)	1 2 3 4 5
	(ii) Proposed	
2.48	Whether Environmental and social problems (if applicable) has been furnished in DPR	
2.49	Whether provision has been made @ 0.5% of the project cost in the DPR for capacity building of ULBs for further O&M of the scheme after taking over the scheme from implementing agency. Please furnish the action plan for conducting capacity building programme. The action plan must specify specific actions such as the number of officials to be deployed in the project post-commissioning, their designations, qualifications and training proposed to be given.	
2.50	Whether Rehabilitation and Resettlement plan (if applicable) has been given in DPR	
2.51	Whether all the hard copies of the DPR furnished along with soft copies/	
2.52	Period of completion of the project	

Signed:
Name:
Designation:

Signed:
Name:
Designation: