

NATIONAL RIVER CONSERVATION PLAN

CHECK LISTS

FOR

DETAILED PROJECT REPORTS

**NATIONAL RIVER CONSERVATION DIRECTORATE
MINISTRY OF ENVIRONMENT & FORESTS
GOVERNMENT OF INDIA
NEW DELHI
2004**

NATIONAL RIVER CONSERVATION PLAN

CHECKLISTS

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NATIONAL RIVER CONSERVATION PLAN

GENERAL GUIDELINES FOR FURNISHING INFORMATION IN THE CHECKLISTS

I. THE CONTEXT AND PURPOSE

The purpose of requesting to furnish the checklists along with the Detailed Project Report (DPR) of the scheme is essentially aimed at ensuring that all vital details are included in the proposal. Completeness of information would facilitate a comprehensive examination of the DPR and thus expediting the processing of the case. It is therefore not only desirable but essential also to furnish all the requested details in the DPR and cross check the same with the help of the checklists to ensure the same.

II. PROCEDURE FOR FILLING UP OF THE CHECKLISTS

1. All the items of the checklist should be completed.
2. Attach separate sheets for explanation, wherever required, with proper annotation (e.g., in the item 2, if details/information are to be furnished, please attach s separate sheet with the caption: Information in regard to item 2 of the checklist).
3. Each DPR is to be attached with the GENERAL checklist as well as checklist of relevant project/scheme.
4. Incomplete checklists shall not be admissible. Response such as “will be considered at the time of execution” shall also not be admissible.
5. In the case response is ‘Yes’, page number of the DPR is to be indicated where the related detail is available.
6. In case the response is ‘Yes’, page/annexure number of each sub-item is to be indicated categorically.

For example; Detailed Design – page -- to --.
Drawing – Annexure -- to --.
Estimation - page -- to --.

7. Reason/justification wherever applicable should be substantiated on the basis of actual project and not on the basis of PFR.

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST (GENERAL)

FOR

ALL DETAILED PROJECT REPORTS

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST (GENERAL) FOR ALL DETAILED PROJECT REPORTS

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether the DPR is properly page numbered and indexed.			
2.	Whether the salient features of the DPR have been provided ¹			
3.	Whether the certificate of concurrence from the head of the local body in regard to following has been furnished as annexure:			
	(a) the proposal and provisions made in the DPR, and			
	(b) operation & maintenance (O&M) of the project after the execution and the proposed financial/institutional arrangements for sustainable O&M thereof			
4.	Whether boundary of the project area/town has been earmarked clearly on the map			
5.	Whether the copy of latest approved rates of labour and material has been provided ²			
6.	Whether the list of schedule of rates (SOR) has been annexed with the DPR ³			
7.	Whether the rates of non scheduled items like pipes etc. annexed with the DPR ³			
8.	Whether the copy of budgetary quotation for non scheduled items like pumps, generators etc. annexed with DPR ³			
9.	Whether the calculations for arriving at the rates for those items consisting of labour and materials but not covered under Analysis of Rates have been			

¹ Salient features of the DPR should be attached in the beginning of the DPR in order to have an idea of the project at a glance.

² In case latest approved rates are few years old, justification for adopting rate of price escalation to arrive at current year rates should be mentioned in the DPR and the escalated rates adopted in the estimates.

³ Please ensure that specification of every item has been mentioned in the estimate.

	annexed with DPR			
10.	Whether soil testing report of every specific site has been annexed with the DPR where provision for excavation in soil, soft or hard rock has been made in the DPR			
11.	Population Projection:			
11 (a)	Whether the population projection has been carried out adopting various methods			
11 (b)	Whether the justification for adopting the specific method of projected population has been mentioned in the DPR			
11 (c)	Whether base year of the project has been adopted as the year of expected commissioning of the project ⁴			
12.	Whether detailed measurement sheet (<i>incorporating L, B, H/D columns</i>) for each item has been annexed immediately next to the abstract of cost ⁵ of the particular item in the DPR			
13.	Whether detailed drawings of the works to verify the quantity mentioned in the detailed measurement sheet have been annexed with the DPR			
14 (a)	Whether estimate of the State Electricity Board has been provided in the DPR for power connection (<i>wherever applicable</i>)			
14 (b)	Also, whether calculations to arrive at the capacity of transformer has been furnished in the TECHNICAL STATEMENT of the DPR			
15.	Whether duly signed NRCD Proforma (<i>by Project Manager/Executive Engineer</i>) giving proper justification for variation from PFR to DPR has been annexed			
16.	Whether O&M cost calculations have been mentioned in the DPR ⁶			
17.	Whether Bar Chart/CPM/PERT networks, based on realistic time schedule of completion of			

⁴ On a realistic basis.

⁵ Provision for any item in the DPR should not be made on Job/Lump Sum basis. Any provision made without detailing shall not be considered by the NRCD.

⁶ NRCD guidelines are to be considered wherever applicable.

	different activities, has been annexed with the DPR			
18.	Whether the cost of all DPRs is within the cost approved by the CCEA			
19.	In the case where proposed cost of the scheme is exceeding the CCEA approved cost, whether commitment of the State Govt. to meet additional cost of the scheme is available			
20.	Whether it has been ensured that the DPR has been duly authenticated by the competent officer of the implementing agency			

Signature of Project Manager
/Executive Engineer

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST (CORE-SCHEME COMPONENTS)

FOR

ALL DETAILED PROJECT REPORTS

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST FOR CORE-SCHEME COMPONENT

DETAILED PROJECT REPORTS OF

(B) SEWAGE TREATMENT PLANT SCHEMES

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether the DPR has been prepared on the basis of detailed survey, investigation & engineering design			
2.	Whether all technical details of the items provided in the project have been mentioned in the REPORT of the DPR			
3.	Whether in economic/financial analysis, different I&D proposals have been considered together with STP (including decentralized STPs) to arrive at the present one in the DPR ⁷			
4.	Whether a technical statement has been attached which provides matching of different hydraulic levels of related component of I&D in relation to STP proposed			
5.	Whether a letter from the State Pollution Control Board indicating quantity of treated industrial effluent from ETPs contributing to discharge of drains/sewers covered under the project has been attached with the DPR ⁸			
6.	Whether the sewage characteristics (BOD, COD, Nitrogen, Phosphorous, Chlorides, pH, temperature, total suspended solids, volatile suspended solids and faecal coliform) of the drains on a composite basis have been arrived at after testing as per the CPHEEO Manual			
7.	Whether the justification has been provided in the DPR for higher and lower value of BOD parameter in a drain ⁹			
8. (a)	Whether a detailed note on performance of existing STP (if considered in the proposal) has been provided in the DPR ¹⁰			

⁷ Please include the analysis in the DPR.

⁸ Please indicate the name of industries in the DPR and linking it to the city index plan showing point of contribution of treated effluent into the drain/sewer.

⁹ BOD of municipal sewage normally varies in range of 150-200 mg/lit.

8. (b)	Whether reasons for inadequate performance ¹¹ of existing STP (if considered in the proposal) have been provided in the DPR			
9. (a)	Whether the site of the proposed STP has been located as per that earmarked in the Master Plan of the town ¹²			
9. (b)	Whether the provision of the land for the STP has been made as per 30 years requirement in the DPR for Land Acquisition			
9. (c)	Whether implementing agency has proposed for stabilization ponds based technology of treatment at the first instance ¹³			
9. (d)	Whether the lay out plan of proposed Ponds (or units of other technologies) & future addition of the same has been attached with the DPR			
9. (e)	Whether the STP capacity, to cater for ten years requirement, has been adopted			
9. (f)	Whether modular approach adopted to facilitate “add-on” units to STP at a future date, whenever required			
9. (g)	Whether the sewage treatment process has been adopted on the basis of life cycle cost of different prevalent technologies (including Karnal technology) ¹⁴			
9. (h)	Whether temperature, elevation and location of the town has been taken into account while designing the process of the STP, wherever required			
9. (i)	Whether detailed process and hydraulic designs enclosed in DPR for units sizing			
9. (j)	Whether hydraulic drawing of the STP has been annexed with the DPR			
9. (k)	Whether the treated effluent shall conform to the standards mentioned in the guidelines of the NRCD, which also includes that of faecal coliform			
9. (l)	Whether parameters of BOD, COD, TSS & Faecal Coliform (at inlet & outlet of the STP) have been indicated in the DPR			

¹⁰ In the case where the STP is existing in the town and not considered in the proposal, justification should be provided in the DPR for the same.

¹¹ In case it is so.

¹² Please attach the supporting documents with the DPR.

¹³ If not, a certificate from the Land Acquisition Officer to the effect that land as per requirement is neither available nor/or it is not possible to change land use pattern at the suitable location for the purpose needed to be annexed with the DPR.

¹⁴ Life cycle cost analysis should include capital cost, capitalized annual O&M cost less revenue from resource recovery, and land cost. The summary of the analysis shall form an important component of the DPR.

10.	Whether contour map of the site has been annexed with the DPR			
11.	Whether all items of treatment units (<i>Intake Chamber, Screen Chamber, Grit Channel along with proportional flow weir, Conveyance Main from Distribution Chamber to Primary Pond/Inlet to Primary Pond, Interconnections, Outlet of the Pond to Effluent Channel, Effluent Channel etc., in case of Stabilization Ponds</i>) have been designed as per the CPHEEO Manual and detailed drawings and estimates provided in the DPR ¹⁵			
12.	Whether the provision of pretreatment units has been made as per ultimate year discharge of influent so that additional modules could be added as per future requirements			
13.	Whether the screen channel has been provided with medium bar screen having clear opening of 20-30 mm or less to arrest floating materials			
14. (a)	Whether the embankment top width of the ponds is 1.5 m to suit cost effectiveness			
14. (b)	Whether the slope of the embankment (<i>in case of ponds</i>) has been adopted on the basis of soil test report ¹⁶			
14. (c)	Whether lining of the ponds has been proposed 30cm above and below the water level to control the erosion of the surface due to wave action, as arrives through the NRCD experience			
14. (d)	Whether lining of the ponds has also been proposed at the bottom & embankments to check the percolation to sub-soil water and the justification mentioned in the DPR ¹⁷			
14. (e)	Whether the excavation and filling of the earth of the ponds has been proposed to be carried out by adopting balancing method			
14. (f)	Whether Inlet & Outlet structure of the Ponds has been provided as per 'Design Manual for Waste Stabilization Ponds in India' of the NRCD			
15.	Whether independent estimation & detailed measurement for ancillary works such as boundary wall/fencing, approach & internal road, external electrification, staff quarters (<i>as per the NRCD guidelines</i>), water supply & campus drainage, site			

¹⁵ Design & drawings of all civil structures are to be annexed with the DPR.

¹⁶ Please attach the copy of the recommendations with the DPR.

¹⁷ Please annex the soil report to this effect along with the recommendations with the DPR.

	development/landscaping etc. has been provided in the DPR			
16.	Whether dimensional layout plan of the site showing plan of the STP, piping, roads, staff quarters, approach & internal roads, boundary wall/fencing, external electrification points etc. along with land marks of surrounding area annexed with the DPR			
17.	Whether provision for establishment of laboratory for analysis of important parameters of sewage/river water has been made in the DPR			
18.	Whether provision for 6 months O&M of the STP for stabilization purpose has been made in the DPR			
19. (a)	Whether possibilities for utilization of treated effluent for agriculture irrigation, pisciculture, industrial process use etc. have been explored			
19. (b)	If so, whether estimated quantities and revenue/year as resource recovery has been given in the DPR			
19. (c)	Whether arrangements for storage of bio-gas (in the case of generation in the treatment process) has been made			
19. (d)	If so, whether expected resource recovery has been proposed in the DPR;			
	(i) by distributing the bio-gas to the nearby residents,			
	(ii) through power generation			
20.	Whether disposal of the treated effluent back in the river has been made at the point after which it shall not become the reason for health hazard to the populace and a detailed note about the same has been included in the report part			
21.	Whether it has been mentioned in the DPR that the tender bid for the implementation of works shall also include the O&M of the STP for 10 years			

Signature of Project Manager
/Executive Engineer

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST
FOR
CORE-SCHEME COMPONENTS OF
INTERCEPTION & DIVERSION
AND
SEWAGE TREATMENT PLANT
DETAILED PROJECT REPORTS

NATIONAL RIVER CONSERVATION PLAN
CHECK LIST FOR CORE-SCHEME COMPONENT
DETAILED PROJECT REPORTS OF
(A) INTERCEPTION & DIVERSION SCHEMES

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether the DPR has been prepared on the basis of detailed survey, investigation & engineering design			
2.	Whether all technical details of the items provided in the project have been mentioned in the REPORT of the DPR ¹⁸			
3.	Whether in economic/financial analysis, different I&D proposals have been considered together with STP (including decentralized STPs) to arrive at the present one in the DPR ¹⁹			
4.	Whether a technical statement has been attached which provides matching of different hydraulic levels in relation to STP proposed			
5.	Whether linkages of this scheme have been established with other ongoing sewerage schemes being funded by the Central/State Govt., if applicable			
6.	Whether the proposed I&D system has been so designed to become a part of town's sewerage system and sewage treatment facility, whenever required in future			
7.	Whether a certificate to the effect that no municipal sewage shall fall in the river after the implementation of the proposed project has been provided in the DPR			
8.	Whether the details of existing sewerage system and proposal for its amalgamation with that proposed in the DPR has been mentioned in details in the REPORT and accounted for in the			

¹⁸ e.g., size, type & length of sewer/rising main, duties of the pumps etc.

¹⁹ Please include the analysis in the DPR.

	TECHNICAL STATEMENT			
9.	Whether the area earmarked for the project in the town (<i>in A-3 size paper</i>) showing the location of the drains outfalling in the river, their names & catchment area, existing and proposed major works of the scheme are annexed along with description of I&D proposal in the REPORT of the DPR ²⁰			
10. (a)	Whether present sewage generation in the town has been obtained on the basis of actual discharge measurement of each drain carried out for over a month during dry weather ²¹			
10. (b)	Whether sewage interception factor ²² and peak factor of each drain has been worked out and indicated in the TECHNICAL STATEMENT of the DPR			
11. (a)	Whether the rate of water supply for projection of sewage generation has been adopted on actual basis			
11. (b)	In case where actual rate of water supply is higher than the norms of the latest CPHEEO Manual, whether the estimation of sewage based on the norms of the Manual has been compared with the actual flow of the sewage and higher of the two values taken at the time of submission of the DPR, and has been adjusted at the normative levels of the Manual when projecting for the future and indicated in the TECHNICAL STATEMENT of the DPR			
11. (c)	Whether projected minimum, average & peak discharges of each drain (in litres per second-lps as well as million litres per day-mld), its interception & peak factors during different design years along with present sewage flow have been indicated in the tabular form in the REPORT & TECHNICAL STATEMENT of the			

²⁰ Bigger size map having details are to be annexed with the DRAWING part of the DPR.

²¹ Please annex the table showing the summary of minimum, average & peak discharges along with interception & peak factors with the REPORT & TECHNICAL STATEMENT of the DPR.

²² The sewage interception factor of each drain should be worked out on the basis of contributory population of the catchment area of the drain and water supply rate.

	DPR			
12. (a)	Whether hydraulic design of the proposed sewer has been annexed with the DPR			
12. (b)	Whether all the sewers have been checked for minimum self-cleansing velocity of 0.6 m/s during average flow conditions, by providing proper slope			
12. (c)	Whether flow depth to diameter ratios adopted while designing sewers			
13.	Whether basis for selection of gravity sewer/rising main material has been provided in the DPR ²³			
14.	Whether existing & proposed sewer plan annexed with the DPR			
15.	Whether bedding conditions for different reaches of the proposed sewer have been designed as per the CPHEEO Manual and the design annexed with the DPR			
16.	Whether silt traps on road side, if required, as gully pits to avoid silting of sewers have been provided			
17.	Whether detailed manhole-to-manhole survey of existing sewers has been conducted and provisions for sewer cleaning if required, accordingly, made in the DPR			
18.	Whether manhole size & spacing have been adopted as per the CPHEEO Manual			
19.	Whether manhole cover preferably of Ferro-cement have been provided in the sewer alignment to avoid theft of the same			
20.	Whether type of subsoil strata up to sewer invert level, subsoil water table data and type of road surface over the proposed sewers alignments has been mentioned in the L-Section of the proposed sewer			
21. (a)	Whether sewers are planned to be laid below sub-soil water table			
21.	If so, whether justification for the same and the			

²³ Reference is drawn to Para 6.3 of the Manual on Water Supply & Treatment; May 1999 Edition of the CPHEEO, Ministry of Urban Development in this matter.

(b)	precautionary measures to be taken during laying of sewer has been mentioned in the DPR			
22.	Whether L-Section of the existing/proposed rising main annexed with the DPR			
23. (a)	Whether economical size of the rising main has arrived at after considering at least 3 diameters of each of pipe materials of PSC, CI & DI etc. ²⁴			
23. (b)	Whether the chosen diameter of the rising main provide at least 0.60 m/s velocity for the base year average flow			
23. (c)	Whether surge/water hammer analysis for rising main has been calculated and mentioned in the DPR			
23. (d)	Whether the design of thrust/anchor blocks made in the DPR			
23. (e)	Whether rising main accessories, wherever needed, such as thrust blocks, anchor blocks, expansion joints, scour/drain valves, air/vacuum release valves and surge protection devices provided in the DPR ²⁵			
24.	In case proposed sewer/rising main is crossing railway line/Highway & their bridges (<i>wherever applicable</i>), whether permission of the concerned organization has been obtained and the copies of the permission and their estimate for the same annexed with the DPR			
25. (a)	Whether re-sectioning/lining of the drain for protection/training purpose has been restricted to 30 m upstream and 20 m downstream of tapping arrangement			
25. (b)	Whether the cross section at various chainage and L-Section of the drain, in which re-sectioning/lining is to be done, has been indicated in the drawing sheet			
25. (c)	Whether the cross section of the drain has been designed on the basis of rainfall data of the area			

²⁴ MS pipe, due to the corrosive nature of the sewage, is not recommended for sewage conveyance, except after special treatment.

²⁵ Please mention about them in the REPORT along with reference of page number/item number of the estimation of the same over here as well.

	and accordingly calculations have been shown in the technical statement of the DPR			
26. (a)	Whether detailed dimensional drawings of nalla tapping & allied works (also showing ground level, bed/invert levels etc.) enclosed			
26. (b)	Whether nalla tapping works need deforestation or rehabilitation of people/properties or encroachments problems? ²⁶			
26. (c)	If so, whether details and solutions have been proposed in the DPR			
26. (d)	Whether arrangements of de-gritting and screening the diverted flow from the tapping arrangement, before joining the sewers/pumping station made			
27. (a)	Whether the capacity of the sump of the pumping station has been calculated on the basis of 3.75 Minutes detention period of peak discharge during the ultimate design year			
27. (b)	Whether size of sump of the pumping station has been has been out checked with pump manufacturer for adequacy and so mentioned in the DPR			
27. (c)	Whether scouring depth calculations have been made to arrive at the depth of the pumping station foundation, in case river flow shall affect the structure during normal rainy season ²⁷			
27. (d)	Whether proposed pumping station houses submersible pumps			
27. (e)	In the case of 'No' in 27 (d) and where horizontal/vertical motor driven pumps have been provided, whether justification for provision of twin sumps instead of single sump considering overall costs of alternatives provided in the DPR			
27. (f)	Whether the calculations to arrive at different invert levels ²⁸ have been mentioned in the technical statement of the DPR and shown in the			

²⁶ In case there is no such requirement, mention so in the DPR.

²⁷ Scour depth calculation should take into account highest flood flow of the river.

²⁸ (ground level, sump bed, bottom of submersible pump, top of submersible pump, storage top, incoming sewer etc.)

	drawing			
27. (g)	Whether the structural design, drawing & estimate of sump of the pumping station has been made the part of the DPR			
27. (h)	Whether land marks of the surrounding area have been shown in the layout plan of pumping station campus			
27. (i)	In the case where approach road and internal road has been provided inside the campus of pumping station, whether layout of the same has been shown in the layout drawing of the pumping station			
28. (a)	Whether the efficiency of the pump adopted, while calculating the BHP, is in conformity with the duties of the pumps proposed ²⁹			
28. (b)	Whether the configuration of the pumps proposed in each pumping station is in conformity with the guidelines of the NRCD			
28. (c)	Whether friction losses inside the pump house as per proposed installation of pumps have been calculated and accounted for while calculating duties of the pump in the DPR			
28. (d)	Whether the provision for required accessories to pumping plants has been made			
28. (e)	Whether the details of specifications of the control panel, starters, pressure gauge etc. have been provided in the estimate			
28. (f)	Whether the size of sluice & reflex valves have been adopted as per the CPHEEO Manual			
28. (g)	Whether the details of CI connecting pipes & specials inside the pump house have been provided in the DPR and accordingly provisions made			
28. (h)	Whether flow measuring instrument provided on the delivery header of pumping station			
29.	Whether provision for separate electric feeder line to pumping stations (<i>to take care of frequent power failure and voltage fluctuation problem</i>) from HT line has been made in the DPR			

²⁹ Supporting documents are to be attached with the DPR.

30. (a)	Whether provision for DG set has been made in the DPR to account for interrupted power supply ³⁰			
30. (b)	In case provision for DG set has been made in the DPR, whether the calculations to arrive at the capacity of the same has been mentioned in the technical statement			
31. (a)	Whether the provision for staff quarters made, as per guidelines of the NRCD, in the DPR			
31. (b)	Whether the ground for adopting a percentage of civil construction cost towards water supply & sanitation and electric fittings has been mentioned in the DPR ³¹			
32.	Whether the provision of control and panel room made in the DPR as per specifications of the State Electricity Board ³²			
33.	Whether unit estimates of manholes, gully pits, ventilating columns, boundary wall, gate with pillars, chambers etc. have been annexed with the DPR			
34.	Whether provision for road restoration has been made as per CPWD/State PWD/Local Body norms & rates			
35.	Whether provision for 6 months trial run cost for pumping station, after commissioning, has been made			
36.	Whether the provision of land for pumping station including electric sub-station has been made in the DPR for Land Acquisition, in case it is not available free of cost			
37. (a)	Whether the sites chosen for I&D scheme are free of flooding?			
37. (b)	If not, reasons for choosing such alignment and locations and measures, to avoid impact of floods			
38.	Whether traffic diversion/control arrangements for public and workers' safety, arising out of construction phase of I&D works, have been covered in the DPR			

Signature of Project Manager
/Executive Engineer

31 In the case where power supply situation is satisfactory in the town, please attach a certified copy of statement of the State Electricity Board regarding the same.

32 Please attach a copy with the DPR.

33 Please attach the copy of the specification in support with the DPR.

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST FOR CORE-SCHEME COMPONENT

DETAILED PROJECT REPORTS OF

(B) SEWAGE TREATMENT PLANT SCHEMES

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether the DPR has been prepared on the basis of detailed survey, investigation & engineering design			
2.	Whether all technical details of the items provided in the project have been mentioned in the REPORT of the DPR			
3.	Whether in economic/financial analysis, different I&D proposals have been considered together with STP (including decentralized STPs) to arrive at the present one in the DPR ³³			
4.	Whether a technical statement has been attached which provides matching of different hydraulic levels of related component of I&D in relation to STP proposed			
5.	Whether a letter from the State Pollution Control Board indicating quantity of treated industrial effluent from ETPs contributing to discharge of drains/sewers covered under the project has been attached with the DPR ³⁴			
6.	Whether the sewage characteristics (BOD, COD, Nitrogen, Phosphorous, Chlorides, pH, temperature, total suspended solids, volatile suspended solids and faecal coliform) of the drains on a composite basis have been arrived at after testing as per the CPHEEO Manual			
7.	Whether the justification has been provided in the DPR for higher and lower value of BOD parameter in a drain ³⁵			
8. (a)	Whether a detailed note on performance of existing STP (if considered in the proposal) has been provided in the DPR ³⁶			

³³ Please include the analysis in the DPR.

³⁴ Please indicate the name of industries in the DPR and linking it to the city index plan showing point of contribution of treated effluent into the drain/sewer.

³⁵ BOD of municipal sewage normally varies in range of 150-200 mg/l.

8. (b)	Whether reasons for inadequate performance ³⁷ of existing STP (if considered in the proposal) have been provided in the DPR			
9. (a)	Whether the site of the proposed STP has been located as per that earmarked in the Master Plan of the town ³⁸			
9. (b)	Whether the provision of the land for the STP has been made as per 30 years requirement in the DPR for Land Acquisition			
9. (c)	Whether implementing agency has proposed for stabilization ponds based technology of treatment at the first instance ³⁹			
9. (d)	Whether the lay out plan of proposed Ponds (or units of other technologies) & future addition of the same has been attached with the DPR			
9. (e)	Whether the STP capacity, to cater for ten years requirement, has been adopted			
9. (f)	Whether modular approach adopted to facilitate “add-on” units to STP at a future date, whenever required			
9. (g)	Whether the sewage treatment process has been adopted on the basis of life cycle cost of different prevalent technologies (including Karnal technology) ⁴⁰			
9. (h)	Whether temperature, elevation and location of the town has been taken into account while designing the process of the STP, wherever required			
9. (i)	Whether detailed process and hydraulic designs enclosed in DPR for units sizing			
9. (j)	Whether hydraulic drawing of the STP has been annexed with the DPR			
9. (k)	Whether the treated effluent shall conform to the standards mentioned in the guidelines of the NRCD, which also includes that of faecal coliform			
9. (l)	Whether parameters of BOD, COD, TSS & Faecal Coliform (at inlet & outlet of the STP) have been indicated in the DPR			

³⁶ In the case where the STP is existing in the town and not considered in the proposal, justification should be provided in the DPR for the same.

³⁷ In case it is so.

³⁸ Please attach the supporting documents with the DPR.

³⁹ If not, a certificate from the Land Acquisition Officer to the effect that land as per requirement is neither available nor/or it is not possible to change land use pattern at the suitable location for the purpose needed to be annexed with the DPR.

⁴⁰ Life cycle cost analysis should include capital cost, capitalized annual O&M cost less revenue from resource recovery, and land cost. The summary of the analysis shall form an important component of the DPR.

10.	Whether contour map of the site has been annexed with the DPR			
11.	Whether all items of treatment units (<i>Intake Chamber, Screen Chamber, Grit Channel along with proportional flow weir, Conveyance Main from Distribution Chamber to Primary Pond/Inlet to Primary Pond, Interconnections, Outlet of the Pond to Effluent Channel, Effluent Channel etc., in case of Stabilization Ponds</i>) have been designed as per the CPHEEO Manual and detailed drawings and estimates provided in the DPR ⁴¹			
12.	Whether the provision of pretreatment units has been made as per ultimate year discharge of influent so that additional modules could be added as per future requirements			
13.	Whether the screen channel has been provided with medium bar screen having clear opening of 20-30 mm or less to arrest floating materials			
14. (a)	Whether the embankment top width of the ponds is 1.5 m to suit cost effectiveness			
14. (b)	Whether the slope of the embankment (<i>in case of ponds</i>) has been adopted on the basis of soil test report ⁴²			
14. (c)	Whether lining of the ponds has been proposed 30cm above and below the water level to control the erosion of the surface due to wave action, as arrives through the NRCD experience			
14. (d)	Whether lining of the ponds has also been proposed at the bottom & embankments to check the percolation to sub-soil water and the justification mentioned in the DPR ⁴³			
14. (e)	Whether the excavation and filling of the earth of the ponds has been proposed to be carried out by adopting balancing method			
14. (f)	Whether Inlet & Outlet structure of the Ponds has been provided as per 'Design Manual for Waste Stabilization Ponds in India' of the NRCD			
15.	Whether independent estimation & detailed measurement for ancillary works such as boundary wall/fencing, approach & internal road, external electrification, staff quarters (<i>as per the NRCD guidelines</i>), water supply & campus drainage, site			

⁴¹ Design & drawings of all civil structures are to be annexed with the DPR.

⁴² Please attach the copy of the recommendations with the DPR.

⁴³ Please annex the soil report to this effect along with the recommendations with the DPR.

	development/landscaping etc. has been provided in the DPR			
16.	Whether dimensional layout plan of the site showing plan of the STP, piping, roads, staff quarters, approach & internal roads, boundary wall/fencing, external electrification points etc. along with land marks of surrounding area annexed with the DPR			
17.	Whether provision for establishment of laboratory for analysis of important parameters of sewage/river water has been made in the DPR			
18.	Whether provision for 6 months O&M of the STP for stabilization purpose has been made in the DPR			
19. (a)	Whether possibilities for utilization of treated effluent for agriculture irrigation, pisciculture, industrial process use etc. have been explored			
19. (b)	If so, whether estimated quantities and revenue/year as resource recovery has been given in the DPR			
19. (c)	Whether arrangements for storage of bio-gas (in the case of generation in the treatment process) has been made			
19. (d)	If so, whether expected resource recovery has been proposed in the DPR;			
	(i) by distributing the bio-gas to the nearby residents,			
	(ii) through power generation			
20.	Whether disposal of the treated effluent back in the river has been made at the point after which it shall not become the reason for health hazard to the populace and a detailed note about the same has been included in the report part			
21.	Whether it has been mentioned in the DPR that the tender bid for the implementation of works shall also include the O&M of the STP for 10 years			

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/Executive Engineer

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST

FOR

LAND ACQUISITION

DETAILED PROJECT REPORTS

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST FOR

DETAILED PROJECT REPORTS OF LAND ACQUISITION SCHEMES

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether the purpose of land acquisition along with area in hectare (<i>and cost</i>) of each item has been mentioned in the DPR			
2.	Whether the existing & proposed works of I&D and STP (<i>and other components like LCS, Crematoria</i>) have been shown in the index plan of the town and annexed with the DPR			
3.	Whether location of land proposed to be acquired has been shown in the index plan of the town ⁴⁴			
4.	Whether the revenue map of plots (<i>proposed for acquisition</i>) enclosed with the DPR			
5.	Whether layout plan of pumping station/STP or any other item as per the proposal has been annexed with the DPR			
6.	Whether types of present land use for each site selected has been mentioned in the DPR			
7.	Whether each site related to schemes proposed in the DPR is free of flooding and devoid of hard rock formation			
8.	Whether it has been ensured that each site (<i>in item 7 above</i>) is free of litigation and/or encroachment			
9.	Whether letter of the Land Acquisition Officer specifying land cost, registration charges etc. (<i>on the basis of which cost of land per hectare adopted</i>) has been enclosed with the DPR			
10.	Whether the consent letter of the owner of the land to the effect of its transfer to the implementing agency has been attached with the DPR, in the case where land is available free of cost ⁴⁵			
11.	Whether different year design flows on the basis of			

⁴⁴ Land for I&D and STP works should be proposed for acquisition on the basis of 30 years requirement, as per the NRCD guidelines.

⁴⁵ It is to be complied with in those cases also where the owner is the local body.

	population projection, rate of water supply, interception factor etc. has been mentioned in a tabular form in the DPR			
12.	Whether the sewage treatment process has been adopted on the basis of life cycle cost of different prevalent technologies (including Karnal technology)			
13.	Whether time taken in each activity of the acquisition has been mentioned in the DPR			
14.	Whether start of work of each item of I&D and STP is matching with date of possession of land for the purpose			
15. (a)	Whether trial pits/ bore-whole data and other relevant investigation/surveys ⁴⁶ carried out at the proposed sites			
15. (b)	If so, whether details of soil bearing capacity and other technical data enclosed with the DPR			

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⁴⁶ It would be needed for design of relevant items of works.

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST

FOR

LOW COST SANITATION (COMMUNITY TOILET COMPLEX)

DETAILED PROJECT REPORTS

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST FOR

DETAILED PROJECT REPORTS OF LOW COST SANITATION (COMMUNITY TOILET COMPLEX) SCHEMES

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether identification and marking of space used for open defecation on city index plan has been annexed with the DPR			
2.	Whether location of <u>each</u> of existing LCS units in the town along with their present condition ⁴⁷ and O&M arrangements, level of utilization during last one year have mentioned in the REPORT of the DPR and the location shown in the index plan of the town			
3.	Whether details of activities already taken up by the local body or the Social Welfare Department & other State Govt. agency have been indicated in the DPR			
4.	Whether proposed LCS units in the town have been mentioned in the DPR and shown in the index plan of the town			
5.	Whether basis for selection of location of each proposed LCS unit, its seating capacity (on the basis of expected number of users) has been mentioned in the DPR ⁴⁸			
6.	Whether renovation of existing LCS units or increasing its capacity, if applicable/required, has been provided in the DPR			
7. (a)	Whether the copy of the consent letter of the owner of the land has been attached with the DPR, in the case where land is available free of cost ⁴⁹			

⁴⁷ Please indicate number of seats against each existing LCS also.

⁴⁸ LCS/Community toilets of 10, 15 and 20 seat capacity may be provided depending upon the space and number of expected users.

⁴⁹ It is to be complied with in those cases also where the owner is the local body.

7. (b)	In the case where land is to be purchased, whether provision for it has been made in the Land Acquisition DPR			
7. (c)	In case land is to be purchased, whether the type of present land use for each proposed unit has been mentioned in tabular form in the DPR			
8.	Whether layout plan of each LCS complex along with land marks of surrounding area has been annexed with the DPR			
9.	Whether detailed drawing of LCS complex has been annexed			
10.	Whether soil test report of those sites, where foundation of the building is to be laid in soil other than normal soil, has been annexed with the DPR ⁵⁰			
11. (a)	Whether the proposed LCS unit has been connected to the nearest sewer and provision made accordingly			
11. (b)	In the case where sewer is not available nearby and septic tank provided, whether cost comparison of both alternatives for <u>each case</u> mentioned in the DPR			
12.	Whether size of the soak pit & septic tank is in conformity with the seating capacity of the LCS unit and its design annexed with the DPR			
13.	Whether provision for proper lighting of the LCS complex made in the DPR			
14.	Whether provision for boundary wall along with gate, if applicable, has been made in the DPR			
15.	Whether provision for adequate number of urinals, located outside the front part of the building, has been made in the DPR			
16.	Whether provision for adequate water supply by municipal main, shallow depth tubewell or jet pump (as per the site conditions) has been made			
17.	Whether estimate of State Electricity Board for power connection for each LCS unit has been annexed with the DPR			

⁵⁰ Please attach the report with the DPR.

18.	Whether proper size of water storage tank and its basis, as per requirement of the LCS unit, has been provided in the DPR			
19.	Whether the calculations to arrive at the O&M cost has been annexed with the DPR			
20. (a)	Whether envisaged resource recovery (<i>on the basis of user's payment</i>) has been mentioned in the DPR			
20. (b)	Whether institutional mechanism for proper O&M of the proposed LCS units has been mentioned in the DPR			

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NATIONAL RIVER CONSERVATION PLAN

CHECK LIST FOR CREMATORIA DETAILED PROJECT REPORTS

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST FOR

DETAILED PROJECT REPORTS OF CREMATORIA SCHEMES

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether a note on existing cremation ghats of the town, mode of cremation, number & type of crematoria installed at each ghat, their condition at present, their level of utilization etc. has been provided in the DPR ⁵¹			
2.	In the case where electric/wood based crematoria have been established under GAP or NRAP in the town, whether performance and acceptance of different type of crematoria has been indicated in the DPR			
3.	Whether number & type of crematoria approved at PFR stage has been mentioned			
4.	Whether the justification for proposing Electric Crematoria in place of Improved Wood Crematoria (in case Improved Wood Crematoria approved by CCEA) has been mentioned in the report ⁵²			
5.	Whether number of cremation taking place during the last 5 years as per the records at the particular ghat/site proposed for the town has been mentioned in the DPR			
6.	In the case where improved wood crematoria have been proposed in the town, whether design with latest modification/improvement based on the study on those installed under Ganga Action Plan and NRAP has been adopted in the DPR in order to conserve more wood			

⁵¹ Location of existing cremation ghats is to be shown on city index plan.

⁵² Electric Crematoria should be proposed in those towns only where its acceptability and subsequent utilization is anticipated.

7.	Whether the justification of proposing the number of cremation beds/units at the particular ghat/site proposed of the town has been mentioned in the DPR			
8.	Whether the location of the crematoria has been marked on the city index plan			
9. (a)	Whether the land for crematoria is available free of cost ⁵³			
9. (b)	In the case where land is to be purchased, whether the provision for same has been made in the DPR for Land Acquisition			
10.	Whether basis for sizing of furnace hall, waiting hall, office, caretaker room, electric switch room, generator room etc. (in case of electric crematoria) has been mentioned in the DPR			
11.	Whether justification for providing mortuary room, record room (in case of electric crematoria) has been provided in the DPR			
12.	Whether the basis for selected size of water storage tank has been mentioned in the DPR			
13.	Whether the provision of the tube-well for water supply has been made as per requirement and sub-soil water strata at the site ⁵⁴			
14.	Whether plan of the site showing the layout/location of the crematoria building, roads, boundary wall/gate, external lighting etc. along with landmarks of surrounding area has been annexed with the DPR			
15.	Whether detailed drawing of the crematoria building/shed has been annexed			
16.	Whether the calculations to arrive at the capacities of the transformer & generator (in case of electric crematoria) have been shown in the DPR			

⁵³ In the case where land is available free of cost, letter of the owner of the land for the same is to be annexed with the DPR

⁵⁴ In order to limit the O&M cost.

17.	Whether the height of the chimney proposed for dispersal of gases is 9 meters (in case of electric crematoria) ⁵⁵			
18.	Whether the provision for land development and landscaping, if provided, has been made as per detailed survey and actual site requirements			
19.	Whether institutional mechanism for proper O&M of the proposed crematoria has been mentioned in the DPR			

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⁵⁵ Height of the chimney is to be adopted taking into consideration the surrounding area of the location of the site, so that the dispersed gases do not affect the environment of nearby residents.

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST

FOR

RIVER FRONT DEVELOPMENT

DETAILED PROJECT REPORTS

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST FOR

DETAILED PROJECT REPORTS OF

RIVER FRONT DEVELOPMENT SCHEMES

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether justification for proposing river front development for a town has been mentioned in the DPR			
2.	Whether identification of improvements required in each bathing ghats has been indicated in the DPR			
3.	Whether the basis for adopting a particular length of river front development has been mentioned in the DPR			
4.	Whether location of proposed development of river front has been shown in the city index plan			
5.	Whether the DPR has been prepared in consultation with the Irrigation Department of the State (<i>on items relevant to the Irrigation Department</i>) and the copy of their approval annexed with the DPR			
6.	In the case where illumination has been proposed in the area, whether illumination points have been earmarked on the layout plan of the works			
7.	Whether detailed design, drawing and estimation of all the items (<i>wherever applicable</i>) has been provided in the DPR			

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NATIONAL RIVER CONSERVATION PLAN

CHECK LIST

FOR

AFFORESTATION

DETAILED PROJECT REPORTS

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST FOR

DETAILED PROJECT REPORTS OF AFFORESTATION SCHEMES *

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether layout plan of the area proposed for plantation annexed with the DPR			
2.	Whether the provisions of trees has been made for block plantation			
3.	Whether the provision of planting avenue/aesthetic/environment friendly ⁵⁶ trees has been made along the boundary walls of the STP and pumping station			
4.	Whether provision for dense foliage plantation around pumping station, STP has been made in the DPR			
5.	Whether plantation of revenue earning trees has been made, as resource recovery, in the area of STP meant for future expansion			
6.	Whether appropriate mechanism for maintenance & protection of plantation for a period of three years has been indicated in the DPR			

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*

The afforestation schemes are prepared for planting trees in the NRCP work schemes of Interception & Diversion, Sewage Treatment Plant, Low Cost Sanitation Complex (or Community Toilet Complex), River Front Development & crematoria in order to improve the aesthetics of the project area.

⁵⁶ e.g., Neem etc.

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST

FOR

MUNICIPAL SOLID WASTE MANAGEMENT

DETAILED PROJECT REPORTS

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST FOR

DETAILED PROJECT REPORTS OF MUNICIPAL SOLID WASTE MANAGEMENT SCHEMES

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether link establishing municipal solid waste vis-à-vis pollution of the river has been established in the DPR			
2.	Whether the provision to regulate the management and handling of the municipal solid wastes covering collection, segregation, storage, transportation, processing and disposal of municipal solid wastes has been made as per the Municipal Solid Wastes (Management and Handling) Rules, 2000 of the Ministry of Environment & Forests			
3.	Whether an undertaking of the local body to the effect that bio-medical waste and hazardous waste will be managed separately from the Municipal Solid Waste as per the Bio-Medical (Management and Handling) Rules, 1998 & the Hazardous Waste (Management and Handling) Rules, 1989 respectively has been attached with the DPR			
4.	Whether proposal has been prepared on the basis of decentralized management as a measure of economy and justified in the REPORT of the DPR			
5.	Whether the scheme caters to for present requirement of solid waste generation and management			
6.	Whether a study, to assess the present actual generation of the municipal waste in the town, has been carried out and accordingly mentioned in the DPR ⁵⁷			
7.	Whether a provision for segregation of bio-degradable & non-bio-degradable waste at the point of collection has been made in the DPR			
8.	Whether appropriate technologies for waste processing & disposal facilities have been considered			

⁵⁷ Please attach a copy of the Study with the DPR.

9. (a)	Whether an assessment of the assets required for the scheme has been undertaken for the whole town ⁵⁸			
9. (b)	Whether detailed estimation of the assets to be created has been made in the DPR			
9. (c)	Whether unit estimates of each construction item and its drawing has been annexed with the DPR			
10. (a)	Whether the provision for the land for 30 years has been made in the DPR for Land Acquisition, in case it is not available free of cost			
10. (b)	Whether the consent letter of the owner of the land to the effect of its transfer to the implementing agency has been attached with the DPR, in the case where land (<i>for 30 years requirement</i>) is available free of cost ⁵⁹			
10. (c)	Whether land for disposal is located in such a way that it shall not affect the health of the residents of the town ⁶⁰			
10. (d)	Whether the proposed land is located in Non-flood prone area and easily accessible during rains			
11.	Whether the location ⁶¹ and layout plan of the land proposed for processing & disposal has been annexed			

⁵⁸ Please specify and justify in the DPR.

⁵⁹ It is to be complied with in those cases also where the owner is the local body.

⁶⁰ Please justify in the REPORT of the DPR.

⁶¹ On the city index plan.

NATIONAL RIVER CONSERVATION PLAN

CHECK LIST

FOR

CATTLESLED AND BIOGAS PLANTS

DETAILED PROJECT REPORTS NATIONAL RIVER CONSERVATION PLAN

CHECK LIST FOR
DETAILED PROJECT REPORTS OF
CATTLESHEDED * AND BIOGAS PLANTS SCHEMES

S. No.	Question	Response (Please ✓)		
		Yes	Page No.	If No, reasons thereof
1.	Whether the purpose of construction of cattle shed in reference to river pollution abatement has been justified in the DPR			
2.	Whether quantification details of dairy waste have been provided in the DPR			
3.	Whether present location of dairy & disposal points of dairy waste have been given in the REPORT of the DPR and marked on the city index plan ⁶¹			
4.	Whether the resolution by the local body to the effect that it agrees with the proposal made in the DPR & that the assets created for the purpose would not remained unutilized has been indicated in the DPR ⁶¹			
5.	Whether the copy of the consent letters of the diary owners who shall be displaced has been attached with the DPR (<i>to avoid litigation etc. and delay in implementation</i>)			
6.	Whether the number of the sheds and its capacity has been adopted on the basis of present number of cattle population in the town ⁶¹			
7.	Whether proposed location of the cattle shed has been marked on the city index plan			
8.	In the case where land is available free of cost, whether consent letter of the owner of the land for the same is annexed with the DPR			
9.	In the case where land is to be purchased, whether provision for the same has been made in the DPR for Land Acquisition			
10. (a)	Whether the basis for arriving at the capacity of biogas plant has been given in the DPR			
10. (b)	Whether detailed drawing of the biogas plant has been annexed with the DPR			
10. (c)	Whether revenue generation through utilization of biogas generated is envisaged, if yes, whether it has been mentioned in the DPR			

12.	Whether a note on feasibility, planning & marketing strategy for resource recovery by ways of recycling, energy generation, sale of manure and reclaiming the dumping site has been included in the REPORT of the DPR			

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11.	Whether other alternatives like steel trusses with GI/Asbestos sheets for cattle shed, as an alternative to concrete structure, have also been considered ⁶¹			
12.	Whether the basis for adopting the layout plan of the cattle shed and provision of related sub-items has been given in the DPR			
13.	Whether the details & basis of estimate of cartage of required materials have been given in the DPR			

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/Executive Engineer

