



Defining the Future

**Template for Preparation of Detailed Project Report (DPR)
in r/o Water Supply Scheme for KIIFB
Assistance**

Guidelines for preparing Detailed project Report

A detailed Project Report is an essential component of the project. It should be prepared carefully. Before finalising the DPR, importance should be given to carry out proper surveys, investigations and designs. Sufficient details should be included to ensure proper appraisal, approval and implementation of the project in time. Considering the importance of DPR preparation, a document intended for reference is detailed along with. The guidelines provided in this document shall be adhered to strictly. In addition, SPV can incorporate specific additional relevant details to supplement the base data.

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1. SALIENT FEATURES

(Water Supply Scheme)

1.	Title of the project	
2.	Details of project location	
	i. District	
	ii. Taluk	
	iii. Corporation/Municipality/Panchayath	
	iv. Assembly Constituency	
3.	Implementing agency/SPV	
4.	DPR prepared by	
5.	Project outlay	
6.	Budget provision	
7.	Budget speech reference	
8.	Administrative sanction	
9.	Nature of the project (New scheme/ extension/ relaying)	
10.	Present status of WSS, if any	
11.	Need for the project	
12.	Details of proposed scheme	
	i. Length of pipe lines	
	ii. Diameter of pipes	
	iii. Other details	
13.	Details of investigations/surveys conducted	
14.	Total estimated cost and item wise cost break up and as per which schedule of rates (Year)	
	Whether detailed estimate attached?	
15.	Details of revenue streams	
16.	Details of cost benefit analysis (CBR value)	

17.	Details of project risks	
18.	Details of project implementation schedule & WBS (Proposed duration to complete the project)	
19.	Details of project management organisation strategy	
20.	Details of contract management strategy	
21.	Details of statutory clearances	
22.	Quality control infrastructure and mechanism	
23.	Operations & Maintenance (O&M) arrangements of the project after completion	
24.	Details of attached drawings	
25.	Other attachments	

2. Executive Summary:

This section shall contain brief of the scheme like essential features of the proposed scheme- project location, existing water supply status, identification of problems in terms of quantity, quality and source of water, sustainability of the existing system in use, design planning strategy and approach adopted etc. along with the financial details.

3. CHAPTERS:

3.1. INTRODUCTION

- This section should provide a general introduction of the project being submitted.
- General introduction shall include write up on: features of water supply scheme, location of the project area, general description of topography, physiography and geology of the project area, average rainfall of the last three years, historical background of the project, need for the project, etc.
- Aims and objectives of the project shall also be briefed in the section.

3.2. STATUS FEASIBILITY STUDIES

- Description of any feasibility study conducted earlier and their outcome shall be discussed in this section.

WATER DEMAND ANALYSIS

- This section should present the specific problem(s) or issue(s) faced by stakeholders like citizens, businesses or governments that would be addressed by means of provision of improved services through the proposed project.
- In this section, describe the project proposed in terms of the rationale behind the project, clearly focusing on the existing condition (how it will help in improving the situation and bring benefits to the stakeholders).
- Analysis of the water requirement –domestic, institutional, live stock demand etc shall made and documented.
- The rationale could be broad based and supplemented with facts and figures. Information based on objective research, not subjective impressions, should be provided to justify the need or problem. The rationale should be written in a way that would lead to objectives.

4. FUNCTIONAL DESIGN

- This section should present an analysis of different options available to achieve the objective and the reasons for selecting the proposed option should be substantiated.
- The functional design of the project is mainly achieved through field study and documentation using existing information and specifications from various standards.
- The field study for water supply scheme includes population studies, water demand calculations and documentation which may be done as per the latest revisions and amendments of the relevant guidelines of Central Water Commission (CWC) and Bureau of Indian Standards (BIS).
- The alignment of WSS shall generally be governed by several factors like easy accessibility and minimum requirement of land acquisition/demolitions, if any. The requirement of the most suitable site shall have overriding consideration and the site so selected shall fulfill the requirements.
- History of functioning of existing/nearby water supply scheme in the project location, if any, under adverse conditions, maintenance problems etc. shall be considered.
- The scheme shall be planned as to get the most economical design and at the same time satisfy specific requirements, if any.
- The selection of the alignment shall be considered as one which results in minimum construction cost with respect to the actual site conditions like topographical features, geotechnical features etc.
- Project components shall be designed to meet the requirements of the design period wherever applicable.
- Details of proposed sources, traditional sources of water in the project area, present and proposed use, revival if any suggested in the scheme etc should be clearly indicated
- In case of relaying of pipe lines, the adverse conditions of the existing pipe lines should be clearly specified as per the relevant guidelines of CWC (like water audit) and other manuals.

5. ENGINEERING DESIGN

- This section should elaborate the technology choices, structural aspects, foundation options and evaluation of the technology option, as well as the basis for the technology for the proposed project.
- Detailed description of site including topographical and geotechnical investigations adequate to choose the suitable depth of laying shall be furnished.
- The design will have to be made with due regard to factors like urbanization and the future growth and development of the project area in the field of industrial, commercial, educational and social and administrative spheres.
- Hydraulic and structural (wherever necessary) designs of all the major components of the scheme, such as intake well, pump houses, raw and clear water pumping mains / water treatment plant including underground sump / raw and clears pumps and motors / transformers and solar systems, conveyance mains, distribution system including over head or ground reservoirs, any sustainability structures such as check dams or dykes etc. must be done as per standard engineering practices and applicable manuals and codes of the Bureau of Indian Standards IS-3370 part I to IV to be used for water retaining structures.
- The preliminary design for a typical water supply scheme shall consist of longitudinal profile of the proposed pipe alignment from supply point to collection point, nodal diagrams in distribution system, alignment with locations of crossings, points of interconnection, positions of sluice valve, scour valve, spring points of branch lines and positions of pressure gauge, flow meter with chainages etc.

6. FINANCIAL ESTIMATES & COST PROJECTIONS

- This section should focus on the cost estimates, budget for the project, means of financing and phasing of project expenditure.
- Cost estimates have to be worked out on the basis of detailed bill of quantities (with detailed measurements of length, breadth, and depth / height for each item), using the current Schedule of Rates of the State Government (PRICE) or relevant SOR as applicable.
- Applicable taxes, contingencies, investigation charges including any O&M cost for a specific period shall be clearly specified.
- Lump sum provisions for land acquisition etc. shall be explained in detail.

7. REVENUE STREAMS

- Options for cost recovery, if any, should be explored
- Innovative ideas for additional revenue generation may be indicated.

8. COST BENEFIT ANALYSIS& INVESTMENT CRITERIA

- Cost Benefit Analysis (CBA) is a technique whereby the costs of and benefits from a scheme are quantified over a selected time horizon and evaluated by a common yardstick.
- Cost Benefit Ratio (CBR - benefit to cost ratio), EIRR (Economic Internal Rate of Return) etc. shall be worked out in detail with all supporting primary and secondary data.
- The project cash flow projections for the life cycle along with underlying assumptions have to be presented.

9. ENVIRONMENTAL & SUSTAINABILITY ASPECTS

- An Environmental Management Plan (EMP) is to be developed explaining the possible environmental issues which may arise during the construction and operation of the infrastructure and associated facilities depending upon the size of the project.
- Environmental impact assessment study if mandatory and measures identified to mitigate the adverse impact, if any shall be conducted and documented in detail.
- Issues relating to land acquisition, diversion of forest land, wildlife clearances, rehabilitation and resettlement should be addressed in this section.
- Inclusion of international best practices in sustainable infrastructure management including green building concept, potential low carbon, low energy, zero pollution etc. are desirable.

10. RISK ASSESSMENT AND MITIGATION MEASURES

- For those projects which involves large capital outlay and various issues relating to land acquisition, environmental aspects, a detailed and systematic risk analysis may be resorted.
- Identification and assessment of implementations risks which can lead to time overrun, cost escalation, scope reduction etc. is the primary stage in risk assessment.

- Risk analysis could include legal/contractual risks, environmental risks, revenue risks, project management risks, regulatory risks etc.
- The mitigation plans including risk avoidance, risk transfer, and risk elimination are to be well analysed and documented.
- For complex projects with multiple risk profiles, numerical modelling and simulation may be adopted.

11. PROJECT MANAGEMENT ORGANISATION

- Responsibilities of different agencies for project management of the said project should be elaborated. The organization structure at various levels, human resource requirements, as well as monitoring arrangements should be clearly spelt out.
- Management arrangements refer to the institutional structures and mechanisms that would be set up for ensuring effective project management.
- The involvement of external consultant if any shall be documented

12. CONTRACT MANAGEMENT STRATEGY

- Contracting methodology for the execution of the project should be specified in detail. (item rate, lumpsum, design and execute , EPC etc.)
- The system followed in the bidding document and manuals of reference etc. shall be explained (PWD/CPWD/ FIDIC) etc.
- Any contract clause which may likely to lead to additional financial liability shall be identified and reported with suggestions to overcome such issues.

13. IMPLEMENTATION SCHEDULE & WBS

- The time bound work schedule is an important part of every project because it helps in better handling of projects in planning, implementation etc.
- This section should indicate the proposed zero date of commencement and also provide a Bar chart / Project Schedule, wherever relevant.
- Phasing of project activities, proposed contract packages and schedule of implementation for each phase.
- Identify critical dependencies in the project and expected timelines for completion of key milestones and associated process indicators for the same.

- The DPR should provide a time-bound action plan including tendering, appointment of contractors, construction schedule,, quality assurance & quality control and post-construction activities, including project delivery

14. STATUTORY CLEARANCES

- This section should elaborate the statutory clearances to be obtained from the various authorities.
- Statutory approvals as per bye laws, master plan, fire safety norms, environmental clearance etc. as applicable for the project are to be taken.

15. QUALITY MANAGEMENT PLAN

- The DPR shall include information relating to the institution to be engaged in the quality assurance & quality control of the project execution.
- Methodology to be adopted to ensure the quality of construction should be clearly mentioned in the report.
- Quality management plan including the internal inspection and testing procedure shall be documented.
- Third party quality control mechanism is adopted its structure and plan shall be specified in detail.

16. OPERATIONS & MAINTENANCE PLAN

- The DPR shall incorporate/include information relating to the institution to be engaged in the O&M of the created WSS assets/enhanced WSS assets.
- Brief description/analysis of the key issues and obstacles in regard to O&M (including billing/collection issues) and proposed countermeasures to overcome them for the project should be contained.
- Requirement of funds for operation and maintenance of assets should also be included in the report.

ANNEXURES

- I. LONGITUDINAL PROFILE OF THE PROPOSED PIPE ALIGNMENT
- II. LAYOUT AND SCHEMATIC DIAGRAMS
- III. NODAL DIAGRAMS

- IV. DETAILED ESTIMATE
- V. HYDRAULIC CALCULATIONS
- VI. COPIES OF STATUTORY APPROVALS