

Address of DG(RD) & SS on 04-05-2023 at 03.00 pm with Zonal Heads (N-I, NER and S-I) and respective ROs of MoRTH through Video Conference on Strategies and Actions to be taken for sanction of Annual Plan NH works in 2023-24.

General:

- DPR is the base document for sanction of a proposal. DPR is the most important engineering document in which the engineering skill and vision of the project proponent gets reflected covering the necessity and functional value of the proposal, economic / functional justification, cost effectiveness of the project, technical detailing of the project, comprehensive definition of the scope, extent of pre-construction activities required to ground the project etc.
- DPR preparation is a collective activity to be carried out by DPR consultants, engineering team of the executing agency like State PWD, BRO etc., Regional Office of the Ministry, Project Zone of the Ministry and is not an activity to be doled out or off-loaded to the private consultants.
- The entire functional value and diligent implementation of the project depends on the strength, correctness/comprehensiveness of the DPR.
- Deficiencies in the DPR are the main reasons for the pitfalls in the NH projects including time overruns and cost overruns.
- In view of the above, all-out efforts should go into the preparation and finalisation of the DPRs for reaping the maximum benefits and maximum value from the NH projects.

Roles, Strengths and weaknesses of different stakeholders in DPR preparation and sanction of works.

DPR Consultants:

- DPR consultants are the main stakeholders who have to carry out different survey investigations and prepare different documents forming part of DPRs by themselves with the guidance, support and help of other stakeholders.
- DPR Consultants have people who have broadly the required skills to carry out the survey investigations, tests, designs, calculations and assessments etc., required for the DPR. However, they have several weaknesses which, if not compensated suitably by other means, would adversely affect the quality, correctness and comprehensiveness of the DPR. Some of these are brought out as below.
- As the Consultants generally visit the project stretch and come in touch with project stretch only on commencement of DPR. They do not have long term association with the project stretch which is required for appreciating the historical problems of the project stretch and the project region whether they are in respect of technical issues or in respect of socio-economic issues.
- DPR Consultants are many a time driven by the urge to quickly complete the process of DPR within the dedicated time lines even if it is at the cost of limiting the detailed work.
- Due to lack of ownership with the project stretch, DPR Consultants do not give adequate weightage to long term functional values and local socio-economic circumstances.
- Due to the same reason of lack of ownership, DPR Consultants do not either give enough emphasis on cost effectiveness and may resort to short sighted

cost cutting by truncating certain components which eventually require incorporation at the later stage with attendant problems of time and cost-overruns.

- In some cases, DPR Consultants resort to sketchy preparation of project under the wrong conception of Good for construction project details are under the purview of the EPC Contractor and the DPR preparation meant for sanction and bidding does not warrant meticulous work, without understanding that a comprehensive DPR can only lead to proper definition of scope of work for the EPC/HAM contract.

Engineering Team of the implementing agency like State PWD, BRO etc.

- Engineering Team of the implementing agency (State PWD, BRO etc.,) due to their association with the project stretch and long presence in the project region, have vast knowledge of the historical issues of the project stretch and its socio-economic characteristics. They have good tie up and association with the State Administration for effective coordination and follow up. They have engineering officers in different levels in significant numbers for handling large number of tasks.
- Due to the changed work culture, the habit of carrying out survey investigation and producing engineering documents on their own has largely got discontinued.
- Due to their frequent changes from NH to non-NH departments like buildings etc., consistent expertise in national highways sector does not get built up in many cases. Many a time, local pressures influence them directly or indirectly which always may not be in the long-term interest of the project.
- Due to limited interaction with the decision-making authority of the Ministry, the current policy understanding remains limited.

Regional Offices:

- Many of the officers of Regional Offices have exposure of working in the Ministry's HQ at the decision-making level and also of working at field level which helps in a balanced approach. Due to nearness to the project site, visiting the project stretches and sites becomes easier.
- Due to regular interaction with Ministry's HQ level as well as State administration and functionaries, coordination becomes easier.
- Due to the distance between the HQ and the Regional Offices, physical interaction remains limited and policy level understanding may have gaps.
- Due to public dealing in day to day working, emphasis on project details gets reduced. Due to the changed work culture and scenario, preparation of designs, documents and analyses etc., with direct involvement remains limited.

Project Zone at Ministry's HQ.:

- The officers generally have adequate exposure at field level as well as Hqrs level which facilitates balanced approach in handling the projects.
- Policy level understanding becomes easier and comprehensive.
- Interaction with other Divisions in the HQ and other Departments becomes easier due to frequent meetings and discussions.

- Finalisation of all documents takes place at Project Zone level and as such fine tuning and corrections of commissions and omissions in the final project becomes feasible.
- Lack of direct touch with the project site remains a disadvantage in finalising the details.
- Deficiencies and omissions noticed during finalisation require substantial time for their corrections as the same has got to be done through the involvement of working levels like Regional Offices, State PWDs and DPR Consultants.
- Due to large volume of work apart from other project related works, time availability would be less for project related activities.

Way forward to get optimum Results:

- Collective work as a team, understanding the strengths and lesser strengths of all the stakeholders and their complementarities ensure comprehensiveness, cost effectiveness, adequate detailing and speedy implementation.
- Reviewing the project preparation during its progress in different stages rather than looking at the report after its complete preparation.
- Frequent interaction among the stakeholders through Video Conferencing and physical meetings and discussions at regional offices as well as at Ministry's HQ.
- Recording of all action points for improvements and modifications at different levels and their sharing amongst the stakeholders.
- Once the action points are identified keeping close tab on their implementation by the executing agencies as well as regional offices who are located close to the project stretches is required.
- Taking stringent actions against the habitually defaulting and non-performing consultancy firms, resorting to checking and comparison of the documents with the field conditions during the early stages of project preparation and survey investigations to minimize omissions and deficiencies.
- Good documentation covering all the aspects of the project is the key to smooth bidding process and speedy execution of the work.

Approach for finalization of DPRs and important aspects to be taken care of in DPR preparation.

SOPs & Guidelines for preparation of DPRs/sanction of NH development works

- DPRs are broadly being prepared through consultants, whether formally deployed by Ministry or procured and used by different implementing agencies like State PWDs through in-house efforts. Generally, DPRs prepared by consultants whether formal or otherwise are found to be deficient in many respects which is leading to several difficulties like repeated requirements of COS, cost overruns & time overruns, deficiencies in safety aspects, sub-optimal provisions etc. These deficiencies are remaining largely uncorrected as the DPRs are neither being reviewed in detail nor being brought to the required quality by the concerned stakeholders.
- DPR preparation should be got done thoroughly through the consultants with full involvement of all the stakeholders like regional offices, implementing

agencies (PWDs/BRO, etc.) and project zones of the Ministry through detailed review of these DPRs during their preparation. Site inspections during different stages like survey investigation stage and examination of the draft DPR documents are very important in this regard. Required survey investigations like physical total station survey, soil and sub-soil investigations, adequate design of different components like horizontal alignment/vertical alignment, pavement structure, culverts/bridges, design of at-grade/grade separated intersections road safety features, etc., are to be ensured through checking and review of all these documents and reports.

- The project stretches are to be inspected by the regional offices along with field officers of implementing agencies and consultants bringing out various aspects to be specially taken care of. These are to be incorporated in the detailed inspection reports/notes to be issued to the consultants and other stakeholders. The team of consultants should also be associated in these inspections so that they are made aware of the aspects to be taken care of with greater emphasis.
- Soon after the survey investigations, the adequacy of the data collected and their appropriateness is to be jointly reviewed by regional offices and the field officers of the implementing agencies with the consultants so that lack of essential data does not remain unattended in the final DPR.
- Preliminary design of bridges/structures including culverts, ROB/RUBs, VUPs, VOPs etc., are to be reviewed. Co-opting the inputs of external Bridge / structural engineering experts wherever found appropriate can be done so that no major deficiencies remain unnoticed. All geometric design elements have to be brought to full NH standards unless the site constraints are very severe, in which case adequate traffic calming and safety measures are to be incorporated. All these items are to be reflected on the plan profile drawings and other EPC/HAM Schedules.
- The existing right of way (EROW) and the proposed right of way (PROW) required are to be clearly worked out to accommodate all the features of the proposed road embankment side slopes, cut slopes, junction improvements, service roads, road safety components, cross-sections of the road in embankment & road in cutting etc., and are to be clearly marked on the plan / profile drawings. EROW & PROW are to be verified by the executive engineer of the NH Division or equivalent officer before forwarding the DPRs for approval.
- Drainage in built up areas and cutting sections need to be worked out and are to be incorporated in the DPRs carefully insisting on (i) minimum depth of drains and (ii) adequate bed slopes together with (iii) connectivity of the drains up to outfall points. All the above features including the road safety provisions have to be reflected on plan / profile drawings which become part of the EPC / HAM schedules, so that, these normal and essential requirements do not get left out or do not require changes in scope leading to delays in the works.
- Assessment of affected utilities to be shifted, trees to be cut, other buildings/structures to be removed have to be carefully covered through survey investigations and are to be clearly incorporated in the plan profile drawings for their timely implementation. These site features are to be verified by the executive engineer of the NH Division or equivalent officer before forwarding the DPRs for approval. Costing of the projects is to be checked at least at two different levels in respect of the quantities, rates of materials, adoption of

appropriate schedule of rates which are to be insisted and the certificates by those are to be recorded in respect of such checking.

- Review of the DPRs during their preparation with the participation of all the stakeholders at project zone level has to be done and is to be confirmed while proposing the DPRs for sanction.
- Different important documents like plan / profile drawings, GADs for structures, Draft EPC schedules A, B, C, D Draft SFC memo/SFC Cover note etc., are to be placed at Annexures A1 to An and other supporting documents like DPR, Cost estimates, Normative cost comparison etc., are to be placed at Annexure D1 to Dn and confirmed on E-file by the project zone as per list placed in the Annexure while proposing the DPRs for sanction.
- Comparison with normative cost, justification where the cost is substantially above/substantially below the normative cost, FIRR/EIRR should also be placed on file.

Basic Requirement to fulfilled before submitting any DPR for review by project zone:

- P&P in A2 size (in a clear readable form)
- Existing RoW & proposed RoW to be shown clearly on P&P
- On P&P all CD structures to be provided with 2 column description table for every structure.

Details of Structure		
Item	Existing	Proposed
Chainage	181+234	11+602
Span	3 x 7 m	1 x 24 m
Type	Minor Bridge	Minor Bridge
Proposal	-	Reconstruction
Condition	Poor condition with stone masonry sub-structures	

- On P&P, at all cross roads, type of cross road, Category of road, place where it is leading etc., are to be shown
- All GADs should be furnished in Minimum A2 size.
- TCSs should be furnished on A-2 size and TCSs should clearly indicate all features of road such as Crust details.
- Existing BT width on P&P drawings to be shown in shaded (Light Colour). – No edge lines in existing BT to be shown to avoid clumsiness in the drawings.
- Proposed Carriageway edge & shoulder edge are to be shown in Deep Dark colour.
- Match line should be given at start and end of every sheet.
- All drawings are to be drawn to a suitable scale.
- While submitting DPR, approved alignment copy in A-2 size should be included.
- Junction lay out – Proposed Junction layout/drawing in light colour. Existing ROW/Proposed ROW to be clearly shown in Junction Layouts. Road Signs at Junctions to be provided judiciously avoiding clustering of too many signs.

- Junction layouts to be pasted on alignment plans after finalisation of junction improvement layout.
- For Bridges & Structures details- All hydraulic details to be submitted along with Justification.
- Draft DPR should consist of all relevant engineering details such as:
 - a. Geo tech report & Preliminary structure design report.
 - b. Existing Pavement Composition
 - c. Existing carriageway width
 - d. Borrow Area material test report
 - e. Traffic Details
 - f. Detailed video of Stretch showing bridge, culvert details and chainage-wise details of stretch.
- Built up areas to be shown on P&P clearly with Names of Built-up areas etc.
- PPT of project should consist of 3-4 slides of NH map, stretch map, NHs around the project vicinity, Magnified version of map.
- Unless there are very severe constraints, Geometry as per NH standards should not to be compromised.
- Use ISD for vertical profile giving justification in cases of differing from ISD.

Following Drawings pertaining to Alignment are to be submitted for approval of alignment of bypasses or re-alignments / green field alignments of 1 km or more:

- All Bypass alignment drawings to be submitted along with drawings of Realignment of 1 Km or more for obtaining the approval of the alignment in the initial stages of the DPR preparation.
- Alignment to be shown on Survey of India Topo sheet maintaining the scale.
- While finalising alignment, 2 or more competing alignments are to be investigated and are to be shown on Toposheets indicating radii of curves, design speed, proposed Structure details etc.
- Proposal for approval of the alignment of a bypass or a re-alignment is to be accompanied by comparison of the alternative alignments considered including the option of development of the existing NH stretch furnishing a table of comparison of different parameters like geometry, LA involved, Forest clearance requirements, buildings and other features needing dismantling, total cost, Bridges, ROBs / RUBs involved if any etc.
- Inter-a-lia the following documents are to be placed on E-file while seeking sanction of the proposal of a NH development work

Main Documents (In Local Reference Tab)

1. Annexure A1- Draft Schedules A-D - dated _____
2. Annexure A2- SFC Cover Note – dated _____
3. Annexure A3- SFC Memo-dated_____
4. Annexure A4- Draft Technical Note- dated_____
5. Annexure A5- Note for Finance- dated_____
6. Annexure A6- Alignment Plans – dated _____
7. Annexure A7-Typical Cross Sections-dated _____
8. Annexure A8- GAD and TCS of Structures dated _____

Supporting Documents (Local Reference Tab)

1. Annexure D1-Cost Estimate –dated _____
2. Annexure D2- Normative Cost Comparison– dated _____
3. Annexure D3- Draft DPR main report –dated_____
4. Annexure D4- Record Notes of Discussions with HQ Zone – dated_____
5. Annexure D5- Utility Shifting Estimates –dated_____
6. Annexure D6-LA Cost Calculation – dated_____
7. Annexure D7- EIRR – dated_____
8. Annexure D8 -FIRR – dated_____
9. Any other supporting documents

Correspondence

1. CE (R&B) NH letter
2. Annual Plan Copy
3. Circulars (if reference given)
4. Any other correspondence/guidelines etc., if hyperlinking of the same is required.



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04.05.2023