Government of India
Ministry of Road Transport and Highways
(EAP Zone)
[Ground Floor, Jeevan Tara Building, 5 Parliament Street, New Delhi-110001]

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To,

All Stakeholders

Sub: Invitation of comments and suggestion on Draft Evaluation Manual for evaluation of performance of contractors, prepared under Institutional Development Project on the Supervision for Highways & Expressways Operations, Management & Maintenance.

Sir,

The Technical Cooperation between MoRTH and JICA (Japan International Cooperation Agency) for Institutional Development Project on the Supervision for Highways and Expressways Operations, Management and Maintenance involves development of an Evaluation Manual for evaluation of contractors. Accordingly JICA has submitted an Evaluation Manual of the contractors from bidding stage to project implementation, along with use of such evaluation in deciding award of project and applicability of bonus/liquidated damages.

The draft Evaluation Manual is hereby uploaded on Ministry's website for your comments and suggestions. Kindly forward the comments and suggestions to the undersigned within 15 days period so that the same can be considered in finalization of the manual.

Enclosed as above.

Yours Faithfully
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Chapter 1: Procurement to deliver value

India needs to pursue the vision of having one of the best procurement systems in the world, which is credible and acceptable by one and all. The mission should be to devise such a system and set the goals to derive value out of procurement. Value can be defined as 'the map of the way things should be' and can be different from the reality or 'the map of the way things are'. A public work should yield sustainable benefits to the users without inflicting on them the cost of externalities like accidents, pollution and environmental damage. That would define value in the context of public works. Value should be considered as delivered if the work is completed in time (i.e., the flow of benefits begins), quality of work is such that it does not require redoing/replacement/repairs/closures (i.e. no disruption in the flow of benefits), there is no increase in accidents, pollution or damage to the environment during construction and operation of the works (i.e. no additional cost of externalities).

Value for money

Since the works are procured at a price, the value for money is said to be achieved if the price paid is the optimum. What is an optimum price would be discovered through competition. Delivery of values would be said to be compromised if the price paid is more than the optimum price.

Setting the objectives

In order to achieve the procurement goals, therefore, five objectives of procurement should be set, viz, to ensure (1) procurement at optimum (or reasonable) price, (2) completion in time, (3) sustainable quality, (4) safety during construction and operation, and (5) mitigation of damage to the environment.

The reality (the way things are)

The existing procurement system does have a price discovery mechanism following competitive procedure, a mechanism to qualify the bidders on the basis of financial strength and experience, an elaborate contract document specifying the requirements of time, cost, quality, safety and environment. In spite of these procedures and mechanisms value for money is not delivered because (a) the time for completion is longer than that provided in the contract (b) the actual price paid is much more than the contract price, and (c) the treatment of quality, safety and environment is variable at best and indifferent at worst. It is worth finding out why it is so and considering how these can be eliminated from the system.

<u>Time overrun</u> :

(a) Delays on account of client: These are mostly due to delay in land acquisition, utility relocation, obtaining statutory environmental clearances etc. The client organization depends upon other central and state government agencies for completion of these activities. The latter agencies are not contractually bound to complete these activities in a

time bound manner while the client is bound to deliver unencumbered site to the Contractor within a specified time. Thus, the delay by other agencies makes the client agencies contractually liable.

This problem cannot be solved by bringing changes in the procurement system. All that is possible to be done to remedy this situation is to reach a mutual understanding between the client agencies and these agencies with regard to the time line of delivery of these activities and to build such time lines into the bid invitation notice. If these timelines are breached the client would still remain liable, but to a lesser extent. The extent to which the client organization's liabilities can be reduced or minimized would depend upon how strong and committed such mutual understandings are. This report strongly recommends that the client agencies and the other agencies should come to a formal understanding on a time line while addressing their mutual concerns (e.g. client agency's concern is to complete these activities in quick time while the other agencies' concerns are with regard to procedures, available manpower, extra financial burdens etc).

(b) Delays on account of contractors: There is concurrent delay by contractors also, which causes time overrun, but this delay usually gets subsumed in the delays caused in land acquisition and clearances and the contractors escape their liabilities for these delays. Once a satisfactory solution to land and other delays is arrived at, the delays by contractors will surely come to the surface and the Contractors would be found wanting in many respects (e.g. planning, mobilization, cash flow, management, etc.) impacting on delivery of works in time with sustainable quality, safety and environmental safeguards. This is an indication that the contractor is either (a) not capable or (b) if capable, is not committed or (c) if capable and committed, the contract rates are unworkable.

These problems can be fixed by bringing about changes in the procurement system, which test the capability and commitment of the contractors and compel them to consider all the requirements of the work (time, quality, safety and environment) as well as the material, managerial, equipment and financial inputs required to fulfill these requirements before submission of the bid. If the commitments at the time of bidding are not fulfilled or more than fulfilled in course of execution of the work, these should be reflected in their performance evaluation and the contractors should be liable to be levied liquidated damages or entitled to payment of bonus once the specified performance threshold is crossed.

<u>Cost overrun</u>

(a) Due to variations: Cost overrun is due to omission/ underestimation of quantities while preparing the project. Parts of these variations are paid at market rates and in such cases the price of variation goes beyond the ambit of initial competition.

This can be fixed by making the project preparation consultants (as in the case of item rate contracts) more accountable or by making the contracts quantity neutral (as in the case of design-build or EPC or DBFOT contracts). Many variations, however, would be justified and need to be tolerated.

(b) Due to claims: Claims arise out of disputes, mostly due to different interpretation of the clause of contract and specifications. More severe are the claims arising out of land acquisition and clearances delay where not only contract period is extended, sealing the time overrun, but a 'cost' is also required to be added to the contract price. There is no mechanism for determining the cost and therefore, it is open to the contractors to claim in any manner that is advantageous to them. Mostly these claims are allowed by the Arbitration Tribunals (AT) and not interfered with by the Courts. The counter claims by the Client on account of concurrent delays by the contractors are mostly rejected by the ATs.

The poor success in the Client's contest of the claims is broadly due to the following four principles the ATs and the Courts have followed in deciding the disputes. First, if two different interpretations of a clause are possible, the one that goes against the drafter of the clause (i.e. the client in this case) has to be accepted. Secondly, if there can be various plausible views of a situation leading to disputes and the AT has taken one of the plausible views, the Courts would not interfere with its award. Thirdly, if there are no mechanism in the contract for determination of the disputed items the disputes will be decided in accordance with the provisions of law (i.e the Contract Act 1872). Many claims on account of land acquisition delays are decided on the principle in the contract law that in an obligation of fulfillment of reciprocal promises, the party in breach of its promise (of not providing land) cannot claim performance from the other party and solid evidence of slow performance by contractors has been ignored. Fourthly, there are very few substantive grounds provided in the law (Arbitration Act,1996) for challenging the arbitration awards (e.g. denying opportunity to one of the parties, acting beyond the terms of arbitration and public policy).

It is essential, therefore, that the possibility of a certain amount of delay due to land etc. be recognized, estimated and built into the bid and a method of compensating the contractor for delays beyond that provided in the bid. Commitment from the bidder with regard to mobilization, progress, quality, safety etc. should be taken at the time of submission of the bid and that commitment together with the extent of its fulfillment should earn him positive or negative performance points. The performance records could be produced as evidence in AT proceedings. All ambiguous clauses of contract and specifications be revisited and amended so that they lend themselves to only one interpretation. Principles and methods should be specified for all determinations (time, cost, rates, compensation events, etc).

<u>Quality, safety and environment</u>

Technical specifications do provide for quality, safety and environment but these do not insist upon a plan with systems and procedures stated therein to achieve these requirements as a matter of routine. For example, the quality requirement is supposed to have been met if the input materials (say in bituminous or concrete mixes) and the finished surface (output) pass the tests specified in the Technical Specifications. Even though stipulations are made in the Technical Specifications with regard to quality requirements during processes (such as production, mixing, hauling, laying, compaction, etc) no tests are prescribed nor can be prescribed to have control over the processes (such as temperature, pressure, weight, dimensions, lines, levels, cross sections, etc). These can be controlled only in real time by putting in place the systems and procedures with accountability specified. For example a bituminous layer may fail prematurely just because of one lapse during construction, vz, temperature at which the mix was laid was less than that specified in the specifications, a fact which cannot be established by any tests on inputs or outputs. The contract presumes that an experienced and qualified contractor would know how the processes are to be controlled and would have done so. Such a presumption would mean leaving quality to chance whereas quality would mean doing things right first time and having reproducible outputs given the same conditions.

As regards safety, Technical Specifications do provide for the requirements of diversions, signages, markings, night visibility, segregation of construction and normal traffic, ingress to or egress from a construction zone for ensuring safety during construction. However, what is actually provided at site is ingenuous improvisation, just to pretend meeting the safety requirements rather than ensuring safety in a serious manner. The contract or the specifications do not provide for the eventuality when the safety requirements are not met. Another aspect of safety, viz., the safety of the workers there are hardly any provisions except for compliance with the statutory provisions of Workman's Compensation Act.

Environmental safeguards in terms of noise, air, water pollution, disposal of solid wastes, etc are statutory requirements and environmental clearances are accorded subject to clearance of Environmental Impact Assessment (EIA) and implementation of Environmental Management Plan (EMP). There are no serious efforts to ensure compliance of the environmental measures through contractual mechanism (e.g. noise and dust pollution at work sites are a norm rather than exception) and generally left to the checks carried out by statutory bodies (e.g. Pollution Control Board). Contracts also do not provide for the eventuality when these requirements are not met.

The problem can be solved by making the bidders submit Quality, Safety and Environmental Plans at the time of submission of bids describing therein the manner in which they would satisfy the contractual and specifications requirements including the systems and procedures that would be put in place with accountability. There should be an independent audit of all three requirements and non-observance of these plans should earn the contractors negative performance points.

Why reality (the way things are) and value (the way things should be) are so far apart?

Ideally, procurement would deliver value if the selected supplier (or the contractor/concessionaire in the context of procurement of works) is 'safe to do business with'. In other words, both client and the contractor should pursue the goal of delivery of value in their respective procurement processes. For example, for the client value is considered delivered if the work is completed in time with quality, safety and environmental safeguards by paying a reasonable price. For the contractor value is considered delivered if he manages to get supply of inputs at optimum price (say through long term association with the supplier or through bulk supply order or through prompt payment for supplies, or through a combination of all of these), he procures subcontractors or deploys qualified and experienced personnel who deliver 'first time right' the quality, safety etc, and the contractor's management is alert enough to take notice of things going wrong and prompt enough to make course correction. Ideally, the entire supply chain (the supplier, i.e. the contractor, his suppliers, and their suppliers) should deliver value and the procurement process should be accordingly aligned. Both Client and contractor have to take a long term view of their engagement with each other. Client should make efforts to develop a host of performing contractors by encouraging them to perform (say by incentives like bonus, preference in future bidding) and discourage non-performance (say by linking poor performance with liquidated damages and discount poor performance in future bidding). In practical terms, it would mean that at the time of bid invitation the client would reveal 'what' he expects from the contractor with regard to time, quality, safety and environment (which the former considers a measure of value) and the bidders in response indicate 'how' best they are going to deliver in these areas. The best of the bests is then selected for award subject to two conditions (i) value for money: the lowest price for delivering the same value and (ii) affordability: the overall price should be affordable to the client.

There are various reasons why the existing procurement system is nowhere near the ideal situation. The first and foremost reason is that the client organizations themselves lack the conviction that procurement should deliver value, the evidence of which lies in the fact that a satisfactory solution for time overrun, particularly due to land and clearances delay, has still eluded them; there is less than adequate emphasis on quality, safety and environment; it is business as usual approach in selection of contractors where performing and non-performing contractors are treated at par; no system has been put in place to evaluate the performance of contractors, which could enable them know where they stand in terms of performance; no performance-based incentives (e.g. bonus) are on offer to encourage the contractors to perform better nor are there any disincentives (e.g. liquidated damages) to prevent them from slipping into non-performance, which are measures that could eventually strengthen the supply chain. In short, there is no realization that the present procurement system is not aligned to delivery of value and hence needs changes.

The second important reason is that while selecting a contractor, his capability is tested on the basis of his financial strength and past experience of delivery of similar projects of a certain specified value. However, his understanding of and commitment to the project in delivering time, quality, safety and environmental requirement in accordance with contracts is not tested. A capable contractor need

not necessarily be committed as well, more so if the weaknesses in the system can be exploited to wriggle out of commitments. The assumption that commitment will be a logical consequence of capability and professionalism is too simplistic and totally unrealistic.

Thirdly, even if capability sans commitment is adopted as the selection criterion, the track record of past performance is not factored in the capability assessment because of the absence of a performance evaluation system. Whoever crosses the specified threshold value of executed work qualifies for award regardless of how much time he took to complete the work, what quality and safety he delivered, how environmental matters were addressed, how many disputes and claims were raised: in short, the quality of performance. The system is thus unfair to the performing contractors and indulgent to the non-performing ones**.**

Fourthly, many a times the winning bidders' bids are unrealistic and the procurement system has quite a considerable amount of tolerance for such bids (Procuring authorities would seldom reject a bid on grounds of low quotation and instead demand additional performance security to cover the risks of low quotation, thereby further compounding the financial woes of the contractor). There are various reasons for unrealistically low quotations, e.g. desperation to win the contract leading to cut throat competition, strategic low bidding (e.g win the contract, fill the order book so that company's share appreciates and then divest at appropriate time, or win the contract by quoting low price and cover the cost and profit through claims), an innocent low bidding (e.g. due to poor understanding of the full contractual requirements and their financial implications). Such unrealistic bids are totally counter-productive to the idea of delivery of value and upset the supply chain by making several contractors broke and left by the way side.

Last but not the least, there are certain ambiguous or conflicting provisions in the contract and specifications, e.g ambiguities relating to various determinations (time, cost, rates); more than one plausible views of a situation depending upon interpretation, e.g subsequent legislation, price variation formulae and indices, existence of encumbrances and their impact, conflicting clauses in contract and specifications. Such ambiguities and conflicts offer an opportunity to raise claims and succeed in getting them. Thus disputes and claims become a means to wriggle out of unfulfilled commitments.

What are the broad contours of a procurement system that can deliver value

The discussion above would lead to the following conclusions and delineate the broad contours of a procurement system that delivers value for the price paid.

1. The client organizations should have the conviction that delivering value should be the procurement goal. Value in broad terms would mean the 'way' the procured work should be in the users' perception. Obviously, it should be delivered in time, be of such quality that gives the users sustained benefits without inflicting on them the cost of externalities like accidents and environmental damage. Accordingly, securing time, quality, safety and minimum damage to environment at optimum price should define the objectives of procurement to achieve the procurement goal.

2. The client organizations should convince themselves of the reality that the procurement system is not delivering value which manifests in time and cost overruns, variable quality and safety, and lack of environmental concerns. There are different causes for these, each of which needs to be addressed and fixed.
3. Both client and contractor need to set their goals to delivery of value by their respective suppliers so that the entire supply chain delivers value. This could be possible through means such as having a long term view of their mutual engagement, providing incentives for delivering value and disincentive for the opposite, aligning their business policies, business ethics and management to delivery of value.
4. The present procurement system selects a contractor for award by testing his capability in terms of financial strength and the experience of executing similar works. Capability need not necessarily translate into commitment and the latter cannot be left to chance. Therefore, there should be a mechanism to test the commitment as well alongside capability. The bidders should demonstrate through their bid that they understand 'what' is to be preformed and 'how' they would go about performance to meet the requirements of the contract.
5. Capability assessment on the basis of past experience of completing a work does not factor the quality of performance during execution because there is no system in place for evaluation of performance of contractors. Thus both performing and no-performing contractors are treated at par in terms of capability. This is unfair to performing contractors and unnecessarily indulgent to the non-performing ones and provides disincentive to perform and deliver value. Therefore, there should be a performance evaluation system and the capability should be factored by quality of performance.
6. Unrealistic and unworkable low bids frustrate procurement. The motivations for submitting such bids could be many, e.g. desperation to bag a contract at any cost, lack of understanding of the full requirement of the work, or pure strategy such as bag the contract and fill the order book to raise the company's stock and divest at appropriate time or bag the contract at low price and recover the losses through claims exploiting the weaknesses in contract documents. The system should not allow such motives to succeed.
7. There are debilitating experiences of the ambiguous and conflicting provisions in the contract being exploited to raise disputes and claims, which mostly succeed in a dispute resolution process because of the principle that the ambiguities cannot be interpreted in favour of the client who is the author of the ambiguous clauses. Such ambiguities and conflicts need to be removed from the contract by revisiting the clauses and amending them suitably.
8. The system should at every step ensure fairness, transparency and objectivity and encourage competition.

This chapter of the report attempts at laying down the goals and objectives of the Procurement System, enunciating the principles on which the system should be based, and strongly recommends acceptance of these goals, objectives and principles. Subsequent chapters deal with the nitty- gritty of

translating these principles into practice. Chapter 2 on Testing the Capabilities and Commitment describes how the requirements of the work should be spelt out in the bid documents, Chapter 3 on the Guidelines for Preparation and Evaluation of bids and Chapter 4 on the Guidelines for Performance Evaluation. Chapters 3 and 4 indeed propose the contents of appropriate Annexes to the Invitation to bid to apprise the bidders of all the provisions and implications of the proposed bidding system.

Chapter2: Proposal for Changes in Bidding Procedures (Testing the Capability and Commitment)

In Chapter 1 of the Report the point was made that in the present procurement system while capability is tested in terms of financial strength and the experience of executing similar works, commitment of the contractor as to 'how' he would perform to achieve 'what' is provided in the contract is not tested and that since capability does not necessarily translate into commitment, the latter cannot be left to chance. The present chapter devotes itself to the mechanism to test the commitment as well alongside capability by making certain changes in the bid submission and evaluation procedures.

The prevailing bidding procedure

In almost all bidding procedures, technical and financial bids are required to be submitted separately but simultaneously along with bid security. The opening and evaluation procedure requires that first the envelope containing the bid security is opened, and on being found compliant with the bid requirements, technical bid is opened. The Technical bid contains essentially the qualification requirements such as evidence of financial strength and that of experience of completion of a similar work above the threshold value specified in the bid conditions. The evaluation of bids is based on pass-fail criteria. Those bidders who pass the qualification threshold are considered eligible for award. Their financial bids are opened and the lowest responsive bidder is selected for award of contract. After contract is awarded to the successful bidder, the contractor submits the Performance Security, a Work plan and proceeds with the work.

As already discussed in some detail on Chapter 1, the financial strength and experience of similar works can be a measure of the capability of the contractor to execute the work under bidding but not of any commitment as to how the bidder would approach the work if the contract is awarded to him. For example what would be the level and timing of mobilization, what rate of progress, he would achieve, how he would meet the requirements of quality, safety and environment. The post award Work Plan submitted by the Contractor is of little value by way of commitment because the award of contract is not based on the work plan and hence not enforceable. All that can be contractually enforced is submission of a plan but not of its compliance.

The proposed changes

The Technical Proposal (or Technical Bid) should be structured in three parts, viz.,

1. Qualification and Experience (Part I)
2. Technical Approach (Part II)
3. Performance rating (Part III)

Part I submission would essentially be the same as in the present system (with some fine-tuning and rationalization discussed later in this chapter). The evaluation of this part would be done only on

pass-fail criteria. This would be a measure of what this Report prefers to call, the capability of the bidders. If the bidders pass the qualification threshold, the capability of the bidder should be considered as established and the other Parts (Parts II and III) should be taken up for evaluation, otherwise the remaining Parts of the bid should be returned unopened.

In Part II of the submission, the bidders would be required to submit a Technical Approach wherein they would indicate how they would execute the project upon award of contract and meet the contract requirements in terms of time, quality, safety and environment. This would reflect the bidders' commitment to the project. Various features of the Technical Approach would be awarded marks, which would be aggregated to arrive at the Technical Scores of each bidder. The Technical Score along with performance rating and the price bids (see paras below) would decide the winning bidder. Since what he commits in the Technical Approach forms the basis of award, he would have to fulfil these commitments, failing which the award would become vitiated and the contract would be deemed to have been secured by misrepresentation and hence liable to be terminated. At the same time, these commitments would set a benchmark for the evaluation of his performance. (Depending upon whether he over-performs or under-performs with respect to these bench marks as well as the other benchmark with respect to the plans submitted post award, he should be awarded bonus and or levied liquidated damages subject to the contract specified thresholds for bonus and liquidated damages being crossed- see para below).

Part II submissions are very crucial because these decide the fate of the bid. There should be utmost objectivity and transparency in evaluation of this Part. This can be achieved by independently developing a model Technical Approach for the work with the assistance of a Consultant to be used as template for evaluation. If the submissions match the standard template or are superior, the bidder should be awarded full marks else marks should be deducted at pre-decided rates. The process should start after submission of the bids but before its opening so that the actual submissions do not influence the development of the template.

In Part III of the submission, the bidders would be required to furnish their Performance rating on all works of value more than that specified in the qualification requirement (i.e., Part I) executed during the past 5 years. Corresponding to average performance rating of all such works, the appropriate performance factor would be selected and applied to the Technical Score evaluated in Part II to give the Final Technical Score.

After arriving at the Final Technical Scores of all the bidders, the financial bids will be opened and the bidders would be ranked in descending order according to the ratio Price/ Final Technical Score, the highest ratio being given the first rank. The first ranked bidder should be selected for award of work provided the price quoted is affordable to the Client. If the bidder with the highest ratio quotes a price that is not affordable to the Client, the highest ranked among those bidders whose price is within the affordability cap would be selected.

The Client would undertake the affordability exercise independently with a view to deciding the capping cost beyond which the bids would not be accepted. This is because the premium on quality should not be so high that the work becomes unaffordable. The affordability exercise should be a confidential exercise undertaken after the bids are submitted and completed before the financial bids are opened so that no bidder has a chance to know the capping price before the submission of bids.

There may be some chance of the client or the consultant being influenced to jack up or depress the cost to suit individual bidder's interest. That, however, could be ruled out by deciding the criteria for cost estimation before actual estimation. A cost is already known through DPR or Feasibility studies. To this something should be added for deploying additional manpower, a cost of funding, a premium for cost escalation during construction, etc., with a view to simulating the commercial considerations in bidding.

The whole process described above should be carried out in the following twelve chronological steps:

Step 1: Invite the bid.

Step 2: Bids are submitted.

Step 3: Only bid security envelope opened, deficient bids returned.

Step 4: Develop standard template for evaluation of Part II submissions

Step 5: Open the Technical Bid Part I, evaluate on pass-fail criteria, declare a bidder failed of any one or more of the qualification thresholds are not met, inform the result to the bidders.

Step 6: Open Technical Bid Part II of the bidders who pass in Step 5, evaluate on the basis of the template developed in Step 4 and award marks to various attributes of the proposal out of the maximum prescribed for each attribute. Aggregate the marks to arrive at the Technical Score.

Step 7: Open Technical Bid Part III, ascertain the Performance rating of the bidder on various works, find the average rating, select the performance factor appropriate for the average rating.

Step 8: Apply the factor to the Technical Score to arrive at the Final Technical Score.

Step 9: Carry out the affordability exercise and arrive at the affordable cost.

Step 10: Open the Financial bid, determine the ratio Final Technical Score/ Price and rank the bidders in descending order (from the highest ratio to the lowest ratio).

Step 11: See if the price quoted by the highest ranked bidder is less than the affordable cost, if so select the bidder for award, otherwise go to the next ranked bidder and repeat the process.

Step 12: Issue letter of acceptance to the selected bidder.

In the following paragraphs, actions required at each step are discussed in detail.

Invitation for bids

Invitation for bids (IFB) has a section titled Instructions to Bidders (ITB). The ITB should clearly declare all the new requirements of bidding, such as preparation, submission, criteria for evaluation, process of evaluation, performance evaluation on award of contract, factoring the past performance in evaluation, selection and award of contract. These are discussed in detail in the following 14 paragraphs. These should be included in the ITB document.

1. Preparation of bids: The Bidders should prepare their bids in a manner that demonstrates their capability to undertake the work and commitment to complete it in the specified time meeting the requirements of quality, safety and environment, The capability of the bidders would be assessed in terms of their financial strength and experience of completing works of similar nature of value as specified in the Appendix to this ITB. The commitment of the bidders would be assessed on how they would plan to undertake the work if the contract is awarded to them by submitting mobilization plan, work plan, quality plan and environment plan incorporating the features specified in Appendix to this ITB. Guidelines for preparation of bids (see section below) should be annexed to the ITB as Annex A.
2. Submission of bids: The bid should contain a bid security, a Technical Bid and a Financial Bid, each sealed in separate envelopes and placed in an outer sealed envelope. The sealed envelope containing the Technical bid would contain within it three separate sealed envelopes, containing (i) Qualification and Experience, (ii) Technical Approach and (iii) Performance rating.

   Note: If the Performance rating system is not in place, Part III of the submission would not be called and will not be part of the bid submissions.

3. Schedule of bid opening: The following schedule of bid opening would be followed.

(i) *Outer envelope*: This should be opened on the day on the date of submission in the presence of the bidders or their representatives. The contents of the outer envelope, i.e. the sealed envelopes for bid security, Technical Bid and the Financial Bids would be verified in the presence of the bidders or their representatives without opening any of the envelopes. If any part of the submission is missing in any bid or the bid is not properly sealed, that bid should be returned forthwith. Thereafter the envelope containing the Bid Security would be opened. If the Bid Security does not meet the requirements of the bid, the remaining bids would be returned forthwith without opening any other envelope. The bid security would be taken on record and the other two sealed envelopes containing Technical and Financial bids would be put in another envelope and sealed in the presence of the bidders or their representatives.

(ii) *Technical Bid*: This should be opened after about four weeks after the template for evaluation of the Technical Approach is ready. The resealed envelopes would then be opened in the presence of the bidders or their representatives and it should be verified whether it contains all three sealed envelopes, i.e. the Qualification and Experience, Technical Approach and Performance ratings. All the three envelopes would be opened in the presence of the bidders or their representatives.

(iii) *Financial bids*: This should be opened after about 4 weeks of opening of the Technical bids after (a) Technical Evaluation of both Part I and Part II are completed and (b) the affordable cost are determined. Financial bids of only qualified bidders would be opened. Qualified bidders are those who pass Part I, Part II and Part Iii evaluation as per criteria specified in para 4 below. If a bidder fails to qualify at any stage, the remaining submissions would be returned to him unevaluated and the Financial bids returned unopened.

4. Criteria for evaluation of Technical Bid:

Submission under Part I (Qualification and Experience) would be evaluated on 'pass-fail' criteria. A bidder would be considered as passed if he meets all the qualification requirements and failed if any one or more of the requirements is not met.

Submission under Part II would be evaluated on the basis of marks awarded to each of the evaluation parameters in the following proportion:

Understanding of the requirements of the works:	10 marks
Mobilization Plan:	20 marks
Work Plan:	20 marks
Quality Plan:	20 marks
Safety Plan	20 marks
Environmental Plan	10 marks
Total: fbvv *viiuhnnb* df fxvsvsbvd	100 marks

The distribution of the marks under various features of each of the evaluation parameters would be indicated under the guidelines for evaluation. The aggregate marks of each of the bidders would be compiled as their Technical Scores.

Any bidder who scores less than 75 as the Technical Score would not be considered as qualified. A bidder having a Technical Score of 75 or more comes below 75 after applying the performance factors (see Para below) would also not be considered as qualified.

Submission under Part III would indicate the Performance rating of the contractors on a scale of 0 to 5 in past works, which may fall in any one or more of the following six categories. Depending upon the performance rating the Technical Score would be increased or decreased using the factors in the Table below to obtain the Final Technical Score:

Performance	Rating	Factor
Outstanding	5	(+) 20%
Very good	4	(+) 10%
Good	3	(+) 5%
Satisfactory	2	No change
Unsarisfactiry	1	(-) 10%
Poor	0	(-) 20%

Note: (1) Where more than one works are considered the average rating would be taken and rounded off to the nearest whole number

(2) Where the Final Technical Score exceeds 100% by applying the factors, the score would be limited to 100% only and no other benefit would be given in evaluation

(3) Where the Final Technical Score drops below 75 by applying the factors, that bidder would not be qualified.

5. Criteria for evaluation of Financial bid: The bidders would be ranked on the basis of Final Technical Score/ Price quoted (i.e. the maximum score per unit of price). The highest ranked would be selected for award provided the price does not exceed the affordable cost. If the price exceeds, the next ranked bidders would be considered and the process repeated until the condition of cost being less than affordable cost is satisfied. (There should be no post bid negotiation or matching of price with affordable price because the contract would become vitiated. However, if the intention is to allow matching of the price, this should be declared upfront in the bid invitation document. The price matching option should be available only to the first ranked bidder, and on his refusal to the next ranked bidders in the order of ranking. The Price matching should be a voluntary offer without any conditions and would not result in any dilution of the submissions under Part II of the Technical Bid).

Note: The ratio should be worked out after rounding off to two places of decimal. In case of a tie, the tie should be broken by calculating the ratio after rounding off to three or more places of decimal till the tie is broken.

6. Evaluation Process: Bids will be evaluated by Committee(s) set up by the Client for the purpose. The Client or Evaluation Committee on behalf of the Client would set the benchmarks for evaluation and all the bids would be evaluated with reference to these benchmarks. These benchmarks would be set after the submission but before opening of the bids with a view to ensuring that the Evaluation Committee is not influenced by any individual bid or bidder's proposals and no element of subjectivity creeps into the evaluation process.

7. Template for Evaluation of Technical Approach (Part II): Client would have a standard Technical Proposal prepared, which in its view would be meeting all the requirements of the bid (time, quality, safety and environment). All the bids would be evaluated with reference to this template. Where bidders' proposals match with the template or are superior, the bidders would be awarded full allocated marks, otherwise marks would be deducted out of the full marks at rates determined by the Evaluation Committee in advance for any shortfall with respect to the standard proposal.

8. Assessment of affordable cost: Cost assessment already available with the Client would be revisited keeping in view the additional requirements, if any, revealed in the standard Technical Proposal, commercial risks that the project may have, the updated input costs, etc., and arrive at a cost, which the Client perceives to be reasonably reflecting the commercial cost, is reasonable and affordable. It would be the sole discretion of the Client what he perceives to be reasonable and affordable and the Client would not be called upon by any bidder (or by the Contractor if any issue is raised post award) to justify the cost nor it can be a subject matter of any dispute.

9. Submission under Technical Approach a promise to Perform: Bidders should note that submissions under Technical Approach (Part II of the Technical Bid) would be deemed as a promise to perform in the manner indicated therein and that the criterion for award of contract is the promise of best performance per unit of price. Therefore, the Technical Proposal of the winning bidder would set the bench mark for his performance as Contractor after award of the contract.

10. Benchmark for Performance Evaluation: The Client appreciates that the Contractor would undertake the detailed planning with regard to time, quality, safety and environment only after the work is awarded and therefore, the benchmark for performance during contract would be the contractor's submissions on these aspects post award. However, the plans submitted post award would themselves be evaluated with reference to the plans submitted at the bidding stage and the positive or negative performance points would accrue right at the beginning of the contract depending upon the plans post award propose over or under performance with respect to the initial plans.

11. Performance Evaluation: Bidders should take note that when the contract is awarded to a bidder his performance as a contractor would be subject to evaluation. The performance evaluation parameters would be the same on which bidders were sought to submit responses in various plans (mobilization, work, quality, safety and environment) in the Technical Approach for both planning stage evaluation (i.e. when the post award submissions are made by the Contractor) and execution stage evaluation. The performance points awarded at the execution stage would be twice as that at the planning stage and distributed pro rata month-wise over the contract period

and cumulated. The Guidelines on Performance Evaluation (see Chapter 3) would be annexed to ITB as Annex B.

Explanation: If performance point to be awarded at planning stage for deviation in any evaluation parameter or any of its various features is 1, it would be 2 at execution stage and monthly accrual of points would be 2/'m', where 'm is the contract period in months.

The same number of points will accrue to the contractor for the same extent of deviation resulting in over or under-performance with respect to the benchmark, the points being positive for over-performance and negative for under performance.

12. Entitlement to bonus: The winning bidder who is awarded the contract would as a contractor become entitled to bonus from the date he accumulates positive performance points beyond the threshold indicated in the Appendix and maintains it for the next three months and will continue to remain entitled till the performance points fall below the threshold. Provided that if the contractor fails to achieve the scheduled completion, he would forfeit the bonus earned. The rate and the maximum limit would be as per Appendix.

13. Liability for liquidated damages: The winning bidder who is awarded the contract would as a contractor become liable to levy of liquidated damages from the date he accumulates negative performance points beyond the threshold indicated in the Appendix and maintains it for the next three months and will continue to remain liable till the performance points rise above the threshold. The rate and maximum limit would be as per Appendix.

    Note:

    1. The same number of points that entitle the contractor to bonus if these are positive, would make the contractor liable to liquidated damages if these are negative.
    2. The entitlement of bonus or liability for liquidated damages would be on the basis of net positive or negative points respectively

14. Performance rating: The net points accumulated by the bidder as the contractor at the end of contract would decide the performance rating of the contractor as outstanding, very good, good, satisfactory, unsatisfactory and poor as per criteria given in the Appendix. The performance rating would be used for increasing or decreasing the Technical Score of the contractor as a bidder in future biddings.

Guidelines for Preparation and Evaluation of Bids

In order to help the bidders prepare well-considered bids, comprehensive guidelines should be prepared and Annexed to ITB as Annex A. (Guidelines for Performance Evaluation, discussed in detail in Chapter 3 would form another Annex to the ITB, Annex B). The discussion that follows is an attempt to describe the contents of Annex A.

1. General

The Client wishes to pursue the goal of delivery of value through procurement and believes that a public work should yield sustainable benefits to the users without inflicting on them the cost of externalities like accidents, pollution and environmental damage. That, in Client's view, broadly defines value in the context of public works. The Client considers value as delivered if the work is completed in time and the flow of benefits begins; quality of work is such that it does not require redoing/replacement/repairs/closures causing disruption in the flow of benefits; there is no increase in accidents, pollution or damage to the environment during construction and operation of the works imposing additional cost of externalities on the users. Accordingly, the Client has set four objectives of procurement, viz, time, quality, safety and environment, which if fulfilled, will help achieve the goals of delivery of value through procurement. It will be the Client's endeavour to derive value by paying the optimum price, which is affordable also, discovered through a fair, transparent and objective bidding procedure.

The Client expects that the bidders responding to this bid invitation appreciate and share these concerns and believe in cooperating with the Client not only in delivering the work under bidding but also for a long term mutual engagement to deliver value through public procurement on sustainable basis. The Client further expects that the management policies of the bidders would be aligned to pursue value through such cooperation and engagement with both, its Client as well as suppliers and subcontractors.

The Client would be looking for capability and commitment in the bidders to deliver the project in time, with quality, safety and environmental safeguards. The capability of the bidder would be considered established if he demonstrates through evidence that his financial strength and past experience of completing works of similar nature are adequate for the project under bidding. That, however, does not establish the bidder's commitment. The Client would wish to be satisfied about the bidders' commitment to the work through their submissions, which should demonstrate that they have understood the requirement of the work, that they would approach the work in the right manner to achieve the time, quality, safety and environmental requirements, that they would provide all the material, equipment, technical, financial and managerial inputs to the project and that the cost implications of these inputs are built into their financial bids. The Technical Approach of all the bidders would be evaluated objectively and the best Technical Approach per unit of price quoted would form the basis of award provided the price quoted is affordable to the Client. If the highest ranked bidder's price is more than the affordable cost, he would have the option of matching the price with affordable cost and the first right of refusal.

2. Technical Bid

The Technical Proposal (or Technical Bid) would be submitted in three parts, viz.,

1. Qualification and Experience (Part I)

2. Technical Approach (Part II)
3. Performance rating (Part III)

Qualification and Experience (Part I)

Information to be submitted: The bidders would submit information on items listed below with supporting evidences.

i. Whether the bidder is disqualified, debarred, or under liquidation proceedings,
ii. Whether the bidder or any of its Directors has/have any criminal proceedings or conviction against it/them
iii. Whether there is any concealment or misrepresentation of facts in the submissions
iv. Whether any inducement offered or corrupt or fraudulent means used to secure the bids
v. Whether the person signing the bid is authorized in this behalf and that by signing and submitting the bids, he makes the bidder liable under the bidding process and eventually under the contract, if the contract is awarded to it.
vi. Whether the bidder has the capacity to undertake the work despite its existing commitments
vii. The turnover of the bidder during the last three years from (a) all its businesses and (b) road/bridge construction business
viii. The net worth (assets minus the liabilities) of the bidder as per the latest financial statements
ix. The operating surplus (income minus expenditure) during the last three years
x. The current ratio (current assets/current liabilities) of the bidding entity
xi. The Debt Service Coverage ratio (operating surplus/ total debt) of the bidding entity
xii. Access to credit facilities
xiii. The number of similar projects of more than the specified value successfully completed during the last 3 years
xiv. Specialized structures (bridges, tunnels, elevated sections) successfully completed during the last 3 years
xv. Ownership or access to equipment in terms of number, type and capacity
xvi. Availability of personnel, their qualification and experience

Acceptable evidence

Items (i) to (v):

The acceptable evidence in support of these items would be self certification by the bidding entity through a person authorized in this behalf by Resolutions of the Board.

Item (vi)

The evidence for capacity should be in the form of the following information

- List of committed works, work-wise actual physical and financial progress and financial commitments till completion
- The aggregated financial requirement of committed works (A)
- Projected financial requirement of the work under bidding (B)
- Total financial commitment on all works (C=A+B)

The acceptable evidence of capacity is that the financial requirements of all works © is less than the preceding years turnover.

Item (vii to xi)

The evidence for these items has to be found in audited financial statements of the bidding entity.

Item (xil)

The evidence for this item could be either self certification or any formal agreement or memorandum of understanding with a Bank, financial institution or any other entity.

Items (xiii) and (xiv)

The evidence for these should be provided in the form of certification by the organizations of the Clients owning the works for which the experience of the execution works are claimed.

Items (xv) and (xvi)

The evidence of equipment should be a self certified complete list of equipment owned/ leased, their deployment status, availability of the equipment for the work under bidding through redeployment and new acquisitions. Similarly, a self certified list of personnel with their deployment status, the availability of the personnel for the work by redeployment or fresh recruitment should be accepted as evidence of availability of personnel.

Verification and validation of evidence

All evidence except bid security and audited financial evidence need to be verified and validated. The process of verification and validation may require consultation with other clients and seeking clarification from the bidders. The validated evidence should be used for evaluation of this part of the Technical Proposal.

Qualification threshold

Qualification threshold would be as indicated in the Appendix to ITB. (No changes are proposed from the existing thresholds and the same can be provided in the Appendix)

Technical Approach (Part II)

In Part II of the submission, the bidders would be required to submit the Technical Approach whereby they would demonstrate their understanding of the requirements of the of the work and propose how they would execute the project upon award of contract and meet the requirements of completion in time, with specified quality, ensuring safety and environmental safeguards. Technical Approach would be structured into six parts, viz (i) Understanding of the Project, (ii) Mobilization needed for the work, (iii) Work Plan, (iv) Quality Plan, (v) Safety Plan, and (vi) Environment Plan. Each part would be called 'Evaluation Parameter'. Each Evaluation Parameter would have main items requiring action by the bidder if he becomes the Contractor. These would be called the 'Features' and all sub-items of action called the 'Attributes'.

Tables 1 to 6 give the details of various Evaluation Parameters, Feature and Attributes on which the bidders have to give their responses. Each Table specifies what would be the basis for evaluation of each attribute. The blank Column titled 'Action' is required to be filled by the bidders by appropriate narrative and vague summary statements such as 'As per IRC standard' 'Will be provided as required', 'To be assessed after design' etc would be totally unacceptable and fetch no marks. The only short response that is acceptable is reference to an Annex, Appendix or Exhibit, which gives a proper narrative on the Attributes and Features. Some typical examples of narratives are given in the Box for the guidance of the bidders

Typical Examples of narratives

Securing land: *We expect that if the contract is awarded to us we would need a vacant plot of land near the project site to set up our site establishment such as ..... In our assessment the plot size should be in the range of* ***....to ..sqm*** *to accommodate all facilities. We have generally surveyed the areas and have done some preliminary inquiry. The owners of some of the plots are inclined to lease out the plots after negotiating a rental. We would engage them into negotiation and will enter into a* ***lease agreement*** *with one of them. We hope to complete the process within****... months*** *of award of contract.*

Understanding of the design (Design-Build contract): *We understand that if the contract is awarded to us we would have the responsibility to design all the project components, the* ***list*** *of which is given in the Table below. The Table also indicates the requirement of survey and* ***investigation*** *the* ***design approach*** *and* ***design standard*** *to be followed along with special requirements to be fulfilled for its approval.*

Mobilizing supply of bearings: *The design provided to us (design-bid -build contracts) along with bid documents provides for bearings of the following* ***type, capacity and number*** *(describe)****.*** *We know that manufacturing and supply of bearings has a lead time of approximately ....months. As per our proposed work plan (give reference)[Alternative formulation for design build:We would be completing the design by.., which gives us enough time to ensure supply in time], we would be needing bearings to be installed at the bridges latest by ... Accordingly, we would need availability of bearings* ***by ....*** *We have been in touch with some leading bearing suppliers and we expect to secure the supplies in time. Upon award of contract, we would enter into an* ***agreement*** *with one of the reputed manufacturers for supply of bearings* ***by...*** *to meet the construction schedule.*

Mobilizing Hot Mix Plant: *We have to execute.....m^3 of bituminous works as per contract (alternative formulation for design-build could be- we estimate as an experienced contractor that we would have to execute...m^3 of bituminous work), According to our work plan We would give ourselves....months time for completing bituminous works (give reference) by targetting a daily average output of ...m^3. Accordingly, we plan to set up* ***...plants of ...capacity*** *and to run it at...percent efficiency, which considering ....down time for maintenance would be able to give the desired output. As per our work plan, we propose to commence the bituminous work by ....(give reference). Accordingly, we would initiate action to set up the plant at least...months in advance of commencement of bituminous works to ensure proper installation, testing and commissioning. We have the plants* ***available in-house*** *(or we have to* ***procure the*** *plant for which we would take advance action immediately on award of contract) and would mobilize the plants* ***by...***

Understanding of the Project

Each bidder would be expected to assess the magnitude of the task involved in executing the project and give his response in Table 1. In design he would be expected to spell out each component of the work to be designed, a design set up which can do the design, all activities that must precede the design such as investigation, testing etc. and the design procedures and standards which have to be followed to conform to the contract requirements. In construction he has to assess the quantities of different work items, the material inputs required, equipment to be deployed and the time required for completing each item as if these are all stand alone activity. Bidders are not expected to be very accurate about the quantity but definitely realistic about it as an experienced contractor would be.

Table 1: Evaluation Parameter- Understanding of the Project

Features	Attributes	Action	Basis for evaluation
Design	Team(s)		Whether all requirements of design such as a design set up, investigation, testing, materials, design procedures and standards have been envisaged
	Geometry		
	Embankment		
	Pavement		
	Drainage structure		
	Bridges		
	Protection works		
	Safety works		
	Temporary works		
Construction	Major work quantities (earthwork, granular, bituminous, concrete)		How realistic are the bidders' assessment of construction volume and the requirements of the inputs, plant and personnel for the work
	Construction inputs (earth, aggregates, cement, steel, bitumen, and others)		
	Plant and equipment		
	Material sourcing		
	Key personnel		
Time for activities (as if all are stand alone)	Design (including clearances as in ROBs		How realistic are the bidders' assessment of time considering
	Earthwork		

	Subbase		the work volume, capacity and deployment of plant and equipment and personnel
	Base		
	Bituminous		
	Drainage structure		
	Drainage structure		
	Bridges		
	Protection works		
	Safety works		
	Temporary works		
	Bridges		

Mobilization Plan

In Mobilization Plan the bidder is expected to indicate the extent (i.e. area, quantity, numbers, capacity) and timing (i.e., the month in which the action is proposed to be completed) of different items of mobilization. Bidders may take note that mobilization is only an enabling activity under the contract but, if delayed, has a great potential to delay the core activities of construction as 'hold points' would not be cleared to enable further work (see para on Work Plan). Mobilization Plan would include creating all enabling facilities (such as accommodation, yards, laboratories, etc), arranging plants and equipment, deploying personnel, procuring materials and subcontractors, and would be be submitted in Table 2.

Table 2: Evaluation Parameter- Mobilization Plan

Features	**Attributes**	**Action**	**Basis for evaluation**
Securing all permits, leases, licences	Land (site establishment, storage, casting)		How realistic are the projected requirements of lease/permits etc. and whether projected completion date is consistent with overall project completion date
	Utilities (electricity, telecommunication, water)		
	Access to site establishment		
	Permits for drawing natural resources (soil, sand, aggregates, water, tree cutting)		
Completing all site facilities	Office accommodation		How realistic are the projected requirements of lease/permits etc. and whether projected completion date is consistent with overall project completion date
	Residential quarters		
	Laboratories		
	Labour camps		
	Storage yards		
	Casting yards		
	Workshops/ repair facilities		
Concluding key subcontracting agreements	Design		What is the extent of subcontracting and whether sub
	Fabrication/erection		

	Earthwork		contractors have enough time to complete the works assigned to them after these agreements to ensure overall completion in time
	Concrete work		
	Form work		
	Prestressing work		
	Reinforced soil work		
	Road signs		
	Road markings		
Concluding key supply agreements	Bitumen		Whether supply agreements are for the whole assessed quantity and whether there is enough time after the agreements for the materials to be delivered and incorporated in the work to achieve overall completion.
	Cement		
	Reinforcing Steel		
	Prestressing steel		
	Anchor blocks		
	Sheaths		
	Bearings		
	Expansion Joints		
	Safety barriers		
	Safety devices		
Mobilizing plants and equipment including delivery, installation and commissioning: in-house production and construction	Earth moving equipment		Whether all the plants and equipment of assessed capacity are covered in these submissions and whet her there is enough time after mobilization to complete the work these are intended to be deployed on.
	Earthwork compaction equipment		
	Wet Mix Macadam Plant		
	Crushing Plant		
	Concrete batching Plant		
	Pre-casting plant		
	Hot mix Plant		
	Paving equipment		
	Hauling equipment		
	Compaction equipment		
Mobilizing plants and equipment including delivery, installation and commissioning: sub-contractors plants and equipment	Fabrication		Whether all the plants and equipment of assessed capacity are covered in these submissions and whet her there is enough time after mobilization for the subcontractors to complete the work assigned to them/
	Handling		
	Hauling		
	Erection/launching		
Mobilization of personnel and manpower (i/c subcontractors')	Project Manager		Whether all the teams are mobilized before the planned commencement of the work assigned to
	Design team		
	Construction teams		

			them
Utilization of mobilization advance drawn			By what time the mobilization advances are to be completely utilized, whether any mobilization still remains and the arrangement for funding the residual mobilization.

Work Plan

In the Work Plan the bidders are required to give a Process Flow Chart for Core Construction Activities indicating the planned commencement, completion of each activity within the planned Activity Time, interdependence of various activities, the Teams responsible for each of these Activities and the Hold Points, i.e. the Point at which the Planned Activity cannot commence unless some pending action is completed (see Figure below). Hold Point Clearance may be the responsibility of the Core Teams or the Enabling Teams (such as Procurement, Financing, Mobilization teams, etc). How the Management intervenes to clear the Hold Points and control the Activity times to achieve the completion in time would also be a part of submissions under the Work Plan.

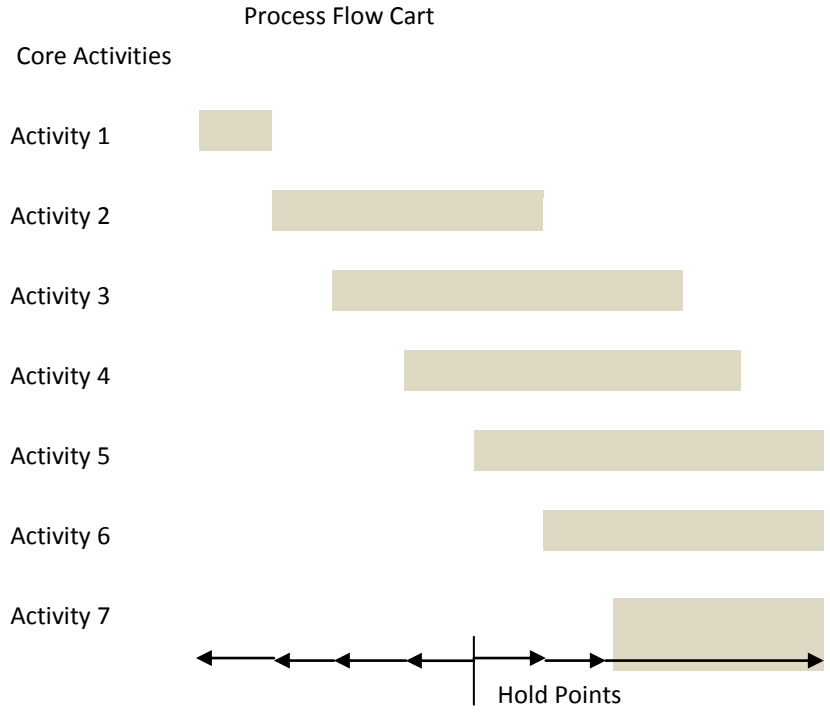

Figure 1: An indicative Process Flow Chart

The bidders are required to name the core construction teams, a coordination team or person for coordinating the activities of various teams and name a high functionary of the company responsible for troubleshooting if coordination fails. The responsibilities and authorities of the Teams and the personnel would also be delineated. Bidders are also required to have an internal mechanism to monitor the activities, anticipate the problems and a policy on timely intervention. The bidders' responses on these matters would be as given in Table 3 below.

Table 3: Evaluation Parameter- Work Plan

Features	Attributes	Action	Basis for evaluation
Core Teams	Design		Whether Teams and Personnel have been named and their responsibilities and authority indicated for each activity (even if one person may be part of more than one team)
	Earthwork		
	Subbase		
	Base		
	Bituminous		
	Drainage structures		
	Protection works		
	Bridge works		
	Safety Works		
Enabling Teams	Procurement		Whether Teams and Personnel have been named and their responsibilities and authority indicated for each activity (even if one person may be part of more than one team)
	Mobilization		
	Project Financing		
	Plant Operation and maintenance		
Coordination team	Inter-team coordination and feedback to management		Whether a Team or a person named and given the authority
Trouble shooting	What if coordination fails		How will the top management intervene
Internal Monitoring mechanism	Commencement of core activities, Activity time. Completion of core activities		Whether a mechanism is proposed and is adequate
Internal system for hold point management	Identification of Hold Points (1 to n), checklist of possible pending actions, teams responsible and management intervention		Whether the management anticipates the problems and can intervene in time
Target monthly physical and financial	Month-wise projection of Physical progress and		Whether the targets are consistent with

progress	Financial progress (as a percent of contract price and not absolute numbers)		resources and lead to completion in time

Quality Plan

In Quality Plan the bidders are expected to indicate how they would put in place the Quality system and procedures to achieve the objective of overall quality in construction by ensuring the quality of inputs, processes and outputs through a clearly laid down procedure for inspection, testing, checking, acceptance, etc. The system should also specify the responsibilities of the Teams or its members for its operation. Independent Quality audit would be a part of contract and a mechanism for compliance with audit observations would also be provided. Quality Plan would include the Features and Attributes indicated in Table 4 below.

Table 4: Evaluation Parameter- Quality Plan

Features	Attributes	Action	Basis for evaluation
Quality of Material inputs	Earthwork Aggregate Sand Water Reinforcing Steel Prestrssing steel Cement Bitumen Anchor blocks Sheathing Bearings Expansion Jpints Drainage traps, spouts Crash barriers Road signs Road marking paints Road delineators Other safety devices Additves (lime, fly ash, plastizers/retarders, joint fillers, silica fumes,etc)		Whether appropriate methodologies for ensuring the quality of material inputs , such as selecting the material source, inspection of materials, the testing to be done on the materials, their storage and handling, etc. as appropriate have been given and are adequate
Essential controls in Plants and equipment	Earth moving equipment Compaction equipment		Whether the plants and equipment proposed to be

	Hauling equipment Spraying/spreading equipment Paving equipment Crushing Plant Wet mix Plant Hot mix Plant Cold mix Plant Recycling Plant Concrete Batch mix Plant Dowel bar insertion equipment Joint/groove cutting equipment Texturing equipment Fabricatioin equipment Casting equipment Concrete pumping/tipping equipment Concrete compaction equipment Lifting and launching equipment Kerb casting equipment Road marking equipment Road sign vehicles Cleaning/watering equipment	used have the necessary controls to ensure as appropriate the size, gradation, weight, volume, temperature, pressure, line, grade, level, speed, frequency, amplitude, rate of discharge/flow, uniformity of processes, etc., whether these controls are manual, mechanical, hydraulic, electronic or GPS based, and whether the controls are adequate.
Key production and construction processes and their acceptance	Plant and equipment calibration Site clearance Setting out Earthwork Subbase Base Bituminous Concrete paving Road signs Road markings Safety devices Temporary works Plain Concrete Reinfoeced concrete Prestressed concrete	Whether any system is proposed for acceptance of material inputs to be incorporated into the processes, of the manner in which plant operation is to be carried out, of the outputs of the plants, of operations like hauling, laying, paving, finishing, inspection, testing, etc. and whether appropriate team or person identified

	Segmental construction Foundation Substructure Superstructure Bearings Expansion joints Wearing coat Drainage systems	
Process flow of the overall Quality Process	Material inputs Process Outputs Acceptance procedure Inter-team coordination Quality documentation	Whether a Quality Process has been proposed and adequately covers the quality requirement
Quality Audit	Audit observations Compliance mechanism Time for compliance	Whether a system is proposed for compliance with audit observations

Safety Plan

In Safety Plan the bidders would indicate how they would put in place the Safety system and procedures to achieve the objective of overall safety of traffic as well as the workers during construction. In addressing the workers' safety exposure to various kinds of risks have to be taken into account and mitigated, safety instructions, manuals and gears have to be provided to

the workers, appropriate safety signs to be displayed at work and plant sites, a protocol of debriefing of the workers in case of accidents needs to be provided, and an emergency intervention protocol should be established. In traffic safety, the bidders would propose how they would manage safety in work zone by ensuring proper segregation of construction and normal traffic, safe merger of traffic due to lane closures, signing and marking plans and their implementation, visibility and conspicuity of construction zone during day and night, logistics of movement of construction traffic without interference with normal traffic, safety of traddic against overhead operations of plant and equipment, coordination with Police authorities, and information to users on construction activities. The bidders have to give the safety procedures in a process flow chart indicating the responsibility of the teams assigned for various activities involving planning, implementation, inspection and acceptance of the safety measures. Independent safety audit will be a part of contract and the bidders would indicate the mechanism for compliance with audit observations. The Plan would be submitted in Table 5 below.

Table 5: Evaluation Parameter- Safety Plan

Features	Attributes	Action	Basis for Evaluation
Safety of Workers	Safety instructions Safety gears Safety against heat and fire Safety against moving objects Safety against falling objects Safety while working at heights Safety while working at depths Safety while working in or under water Safety against moving traffic Safety during Plant operation Safety during construction operation Safety against hazardius materials Safety against toxic gases/fumes/dust Safety instructions to operators to prevent accident Medical aid at work site or plant site		Whether all critical aspects of Workers' safety are adequately covered in the Plan.
Safety during Plant and equipment operation	Safety Manuals for Plants and equipment Safety briefing to operators		Whether all critical aspects of safety during plant and equipment

	Protocol for debriefing operators Safety alarms in Plants and equipment Protocol for response to safety alarm Safe access to various Plant areas Demarkation of areas of only authorized access Protocol for access to authorized areas Safety signs Built-in redundancies in Plant and equipment operation	operations are adequately covered in the Plan.
Traffic safety during construction	Considerations for fixing work zone dimensions Considerations for fixing regulation zone dimensions Signing Plan for regulation zone Marking Plan for regulation zone Arrangement for safe merger of traffic on closed lane with operating lane at the beginning of construction zone Arrangement for segregation of normal traffic from construction vehicles/traffic Arrangement for visibility of construction zone Arrangement for opening of traffic in construction zone after completion Logistics of movement of construction traffic Safety against overhead operations of construction equipment on a trffic lane Safe access to traffic on intersecting roads blocked by construction zone Information to road users about traffic diversion	Whether all critical aspects of safety during construction are adequately covered in the Plan.
Process flow of Safety Process, the Teams responsible, coordination and safety documentation	Workers' safety manual and its acceptance Plants and equipment safety	Whether all aspects of safety procedures are adequately covered

	manual and its acceptance Construction zone safety planning and its acceptance Implementation of safety plans and its acceptance Inter-team coordination Safety documentation		
Safety Audit	Mechanism for compliance with audit observations and a time frame for compliance		Whether the proposed mechanism and timeframe are adequate

Environmental Plan

Bidders would be required to submit an Environmental Plan covering the manner in which they would comply with (a) the statutory environmental requirements relating to air, water and noise pollution, disposal of solid wastes, extraction of natural materials, (b) project specific clearances based on Environment Impact Assessment (EIA) including implementation of Environmental Management Plan (EMP), and (c) measures proposed to be taken at bidder's initiative to mitigate the adverse effects of construction

Table 6: Evaluation Parameter- Environmental Plan

Features	**Attributes**	**Action**	**Basis for Evaluation**
Statutory compliance	Air Noise Water Solid waste disposal Extraction of natural materials		Whether all statutory requirements are spelt out and proposed to be fulfilled
EIA/EMP compliance	Specific conditions for environmental approval (other than statutory requirements) Preparation and implementation of EMP		Whether all the conditions of Environmental clearance are complied with
Mitigating adverse effects of construction	Dust Noise Visual intrusion Debris/ Surplus materials		Whether construction is proposed in clean environment without vusual intrusion

Approach and easement rights
of properties and businesses

Performance rating (Part III)

In Part III of the submissions, the bidders would have to submit their performance rating on all works of threshold value more than that provided in Part I. (If there is no performance rating available for all bidders, as is the case at present because there is no system of performance evaluation at present), submission under this Part would not be required and all the provisions of the ITB would be interpreted as if Part III did not exist.

Appendix to ITB

The Client would provide all the relevant information in the Appendix for which reference is invited to the Appendix. In case any information still remains missing, the bidders may ask for it to be furnished and the Client would furnish the information to all bidders who purchase the bidding document

Concluding remarks

Some of the implications of the proposed system of bidding as discussed so far in Chapter 1 and 2 are obvious:

1. This will increase the price of the works for sure compared to what the client is used to paying. The accompanying gain in value is not exactly quantifiable except in a negative sense that in the present system the value for money is reduced because of post award time and cost increases.
2. The bidders would have to do lot of preparatory works before submitting the bid, which would require both time and cost to be incurred. The bidding time cycle would increase and so will the bidders' cost of preparation. It would be desirable to partially compensate the technically qualified losing bidders, say to the extent of Rs 5 lakh for projects in the range of Rs 100 to 500 crore. This would encourage competition and hence add value at small cost.
3. The Client's task of evaluation would become more difficult and help of consultants would be needed increasing the Client's cost of procurement. However, a more fair,

transparent and credible bidding procedure would further encourage competition and add mean more value for money.

4. Unrealistic and speculative bidding landing the projects in problem resulting in either claims or the contractors getting broke would end.

Chapter 3:

Guidelines for Preparation and Evaluation of Bids

In Chapter 1 a case was made that procurement must deliver value for which both capability and commitment of the bidders should be tested. Chapter 2 described the changes in the bidding procedures, which should ask the bidders to demonstrate their commitment through their submissions and inform them that these submissions would form the benchmarks for evaluation of their performance during contract implementation. It was also proposed that two Guidelines, one on Preparation and Evaluation of Bids and the other on Performance Evaluation should be part of ITB as Annex A and Annex B. Thos Chapter discusses Annex A.

In order to help the bidders prepare well-considered bids, comprehensive guidelines should be prepared and Annexed to ITB as Annex A. (Guidelines for Performance Evaluation, discussed in detail in Chapter 4 would form another Annex to the ITB, Annex B). The discussion that follows is an attempt to describe the contents of Annex A.

2. **General**

The Client wishes to pursue the goal of delivery of value through procurement and believes that a public work should yield sustainable benefits to the users without inflicting on them the cost of externalities like accidents, pollution and environmental damage. That, in Client's view, broadly defines value in the context of public works. The Client considers value as delivered if the work is completed in time and the flow of benefits begins; quality of work is such that it does not require redoing/replacement/repairs/closures causing disruption in the flow of benefits; there is no increase in accidents, pollution or damage to the environment during construction and operation of the works imposing additional cost of externalities on the users. Accordingly, the Client has set four objectives of procurement, viz, time, quality, safety and environment, which if fulfilled, will help achieve the goals of delivery of value through procurement. It will be the Client's endeavour to derive value by paying the optimum price, which is affordable also, discovered through a fair, transparent and objective bidding procedure.

The Client expects that the bidders responding to this bid invitation appreciate and share these concerns and believe in cooperating with the Client not only in delivering the work under bidding but also for a long term mutual engagement to deliver value through public procurement on sustainable basis. The Client further expects that the management policies of the bidders would be aligned to pursue value through such cooperation and engagement with both, its Client as well as suppliers and subcontractors.

The Client would be looking for capability and commitment in the bidders to deliver the project in time, with quality, safety and environmental safeguards. The capability of the bidder would be considered established if he demonstrates through evidence that his financial strength and past experience of completing works of similar nature are adequate for the project under bidding. That, however, does not establish the bidder's commitment. The Client would wish to be satisfied about the bidders' commitment to the work through their submissions, which should demonstrate that they have understood the requirement of the work, that they would approach the work in the right manner to achieve the time, quality, safety and environmental requirements, that they would provide all the material, equipment, technical, financial and managerial inputs to the project and that the cost implications of these inputs are built into their financial bids. The Technical Approach of all the bidders would be evaluated objectively and the best Technical Approach per unit of price quoted would form the basis of award provided the price quoted is affordable to the Client. If the highest ranked bidder's price is more than the affordable cost, he would have the option of matching the price with affordable cost and the first right of refusal.

3. Preparation of Technical Bid

The Technical Proposal (or Technical Bid) would be submitted in three parts, viz.,

4. Qualification and Experience (Part I)
5. Technical Approach (Part II)
6. Performance rating (Part III)

Qualification and Experience (Part I)

Information to be submitted: The bidders would submit information on items listed below with supporting evidences.

xvii. Whether the bidder is disqualified, debarred, or under liquidation proceedings,

xviii. Whether the bidder or any of its Directors has/have any criminal proceedings or conviction against it/them

xix. Whether there is any concealment or misrepresentation of facts in the submissions

xx. Whether any inducement offered or corrupt or fraudulent means used to secure the bids

xxi. Whether the person signing the bid is authorized in this behalf and that by signing and submitting the bids, he makes the bidder liable under the bidding process and eventually under the contract, if the contract is awarded to it.

xxii. Whether the bidder has the capacity to undertake the work despite its existing commitments

xxiii. The turnover of the bidder during the last three years from (a) all its businesses and (b) road/bridge construction business

xxiv. The net worth (assets minus the liabilities) of the bidder as per the latest financial statements

xxv. The operating surplus (income minus expenditure) during the last three years

xxvi. The current ratio (current assets/current liabilities) of the bidding entity

xxvii. The Debt Service Coverage ratio (operating surplus/ total debt) of the bidding entity

xxviii. Access to credit facilities

xxix. The number of similar projects of more than the specified value successfully completed during the last 3 years

xxx. Specialized structures (bridges, tunnels, elevated sections) successfully completed during the last 3 years

xxxi. Ownership or access to equipment in terms of number, type and capacity

xxxii. Availability of personnel, their qualification and experience

Acceptable evidence

Items (i) to (v):

The acceptable evidence in support of these items would be self certification by the bidding entity through a person authorized in this behalf by Resolutions of the Board.

Item (vi)

The evidence for capacity should be in the form of the following information

- List of committed works, work-wise actual physical and financial progress and financial commitments till completion
- The aggregated financial requirement of committed works (A)
- Projected financial requirement of the work under bidding (B)
- Total financial commitment on all works (C=A+B)

The acceptable evidence of capacity is that the financial requirements of all works © is less than the preceding years turnover.

Item (vii to xi)

The evidence for these items has to be found in audited financial statements of the bidding entity.

Item (xil)

The evidence for this item could be either self certification or any formal agreement or memorandum of understanding with a Bank, financial institution or any other entity.

Items (xiii) and (xiv)

The evidence for these should be provided in the form of certification by the organizations of the Clients owning the works for which the experience of the execution works are claimed.

Items (xv) and (xvi)

The evidence of equipment should be a self certified complete list of equipment owned/ leased, their deployment status, availability of the equipment for the work under bidding through redeployment and new acquisitions. Similarly, a self certified list of personnel with their deployment status, the availability of the personnel for the work by redeployment or fresh recruitment should be accepted as evidence of availability of personnel.

Verification and validation of evidence

All evidence except bid security and audited financial evidence need to be verified and validated. The process of verification and validation may require consultation with other clients and seeking clarification from the bidders. The validated evidence should be used for evaluation of this part of the Technical Proposal.

Qualification threshold

Qualification threshold would be as indicated in the Appendix to ITB. (No changes are proposed from the existing thresholds and the same can be provided in the Appendix)

Technical Approach (Part II)

In Part II of the submission, the bidders would be required to submit the Technical Approach whereby they would demonstrate their understanding of the requirements of the of the work and propose how they would execute the project upon award of contract and meet the requirements of completion in time, with specified quality, ensuring safety and environmental safeguards. Technical Approach would be structured into six parts, viz (i) Understanding of the Project, (ii) Mobilization needed for the work, (iii) Work Plan, (iv) Quality Plan, (v) Safety Plan, and (vi) Environment Plan. Each part would be called 'Evaluation Parameter'. Each Evaluation Parameter would have main items requiring action by the bidder if he becomes the Contractor. These would be called the 'Features' and all sub-items of action called the 'Attributes'.

Tables 1 to 6 give the details of various Evaluation Parameters, Feature and Attributes on which the bidders have to give their responses. Each Table specifies what would be the basis for evaluation of each attribute. The blank Column titled 'Action' is required to be filled by the bidders by appropriate narrative and vague summary statements such as 'As per IRC standard' 'Will be provided as required', 'To be assessed after design' etc would be totally unacceptable and fetch no marks. The only short response that is acceptable is reference to an Annex, Appendix or Exhibit, which gives a proper narrative on the Attributes and Features. Some typical examples of narratives are given in the Box for the guidance of the bidders

Typical Examples of narratives

Securing land: *We expect that if the contract is awarded to us we would need a vacant plot of land near the project site to set up our site establishment such as ..... In our assessment the plot size should be in the range of* ***....to ..sqm*** *to accommodate all facilities. We have generally surveyed the areas and have done some preliminary inquiry. The owners of some of the plots are inclined to lease out the plots after negotiating a rental. We would engage them into negotiation and will enter into a* ***lease agreement*** *with one of them. We hope to complete the process within****... months*** *of award of contract.*

Understanding of the design (Design-Build contract): *We understand that if the contract is awarded to us we would have the responsibility to design all the project components, the* ***list*** *of which is given in the Table below. The Table also indicates the requirement of survey and* ***investigation*** *the* ***design approach*** *and* ***design standard*** *to be followed along with special requirements to be fulfilled for its approval.*

Mobilizing supply of bearings: *The design provided to us (design-bid -build contracts) along with bid documents provides for bearings of the following* ***type, capacity and number*** *(describe)****.*** *We know that manufacturing and supply of bearings has a lead time of approximately ....months. As per our proposed work plan (give reference)[Alternative formulation for design build:We would be completing the design by.., which gives us enough time to ensure supply in time], we would be needing bearings to be installed at the bridges latest by ... Accordingly, we would need availability of bearings* ***by ....*** *We have been in touch with some leading bearing suppliers and we expect to secure the supplies in time. Upon award of contract, we would enter into an* ***agreement*** *with one of the reputed manufacturers for supply of bearings* ***by...*** *to meet the construction schedule.*

Mobilizing Hot Mix Plant: *We have to execute.....m^3 of bituminous works as per contract (alternative formulation for design-build could be- we estimate as an experienced contractor that we would have to execute...m^3 of bituminous work), According to our work plan We would give ourselves....months time for completing bituminous works (give reference) by targetting a daily average output of ...m^3. Accordingly, we plan to set up* ***...plants of ...capacity*** *and to run it at...percent efficiency, which considering ....down time for maintenance would be able to give the desired output. As per our work plan, we propose to commence the bituminous work by ....(give reference). Accordingly, we would initiate action to set up the plant at least...months in advance of commencement of bituminous works to ensure proper installation, testing and commissioning. We have the plants* ***available in-house*** *(or we have to* ***procure the*** *plant for which we would take advance action immediately on award of contract) and would mobilize the plants* ***by...***

Understanding of the Project

Each bidder would be expected to assess the magnitude of the task involved in executing the project and give his response in Table 1. In design he would be expected to spell out each component of the work to be designed, a design set up which can do the design, all activities that must precede the design such as investigation, testing etc. and the design procedures and standards which have to be followed to conform to the contract requirements. In construction he has to assess the quantities of different work items, the material inputs required, equipment to be deployed and the time required for completing each item as if these are all stand alone activity. Bidders are not expected to be very accurate about the quantity but definitely realistic about it as an experienced contractor would be.

Table 1: Evaluation Parameter- Understanding of the Project

Features	Attributes	Action	Basis for evaluation
Design	Team(s)		Whether all requirements of design such as a design set up, investigation, testing, materials, design procedures and standards have been envisaged
	Geometry		
	Embankment		
	Pavement		
	Drainage structure		
	Bridges		
	Protection works		
	Safety works		
	Temporary works		
Construction	Major work quantities (earthwork, granular, bituminous, concrete)		How realistic are the bidders' assessment of construction volume and the requirements of the inputs, plant and personnel for the work
	Construction inputs (earth, aggregates, cement, steel, bitumen, and others)		
	Plant and equipment		
	Material sourcing		
	Key personnel		
Time for activities (as if all are stand alone)	Design (including clearances as in ROBs		How realistic are the bidders' assessment of time considering the work volume, capacity and deployment of plant and equipment and personnel
	Earthwork		
	Subbase		
	Base		
	Bituminous		
	Drainage structure		
	Drainage structure		
	Bridges		
	Protection works		
	Safety works		
	Temporary works		
	Bridges		

Mobilization Plan

In Mobilization Plan the bidder is expected to indicate the extent (i.e. area, quantity, numbers, capacity) and timing (i.e., the month in which the action is proposed to be completed) of different items of mobilization. Bidders may take note that mobilization is only an enabling activity under the contract but, if delayed, has a great potential to delay the core activities of construction as 'hold points' would not be cleared to enable further work (see para on Work Plan). Mobilization Plan would include creating all enabling facilities (such as accommodation, yards, laboratories, etc), arranging plants and equipment, deploying personnel, procuring materials and subcontractors, and would be be submitted in Table 2.

Table 2: Evaluation Parameter- Mobilization Plan

Features	Attributes	Action	Basis for evaluation
Securing all permits, leases, licences	Land (site establishment, storage, casting)		How realistic are the projected requirements of lease/permits etc. and whether projected completion date is consistent with overall project completion date
	Utilities (electricity, telecommunication, water)		
	Access to site establishment		
	Permits for drawing natural resources (soil, sand, aggregates, water, tree cutting)		
Completing all site facilities	Office accommodation		How realistic are the projected requirements of lease/permits etc. and whether projected completion date is consistent with overall project completion date
	Residential quarters		
	Laboratories		
	Labour camps		
	Storage yards		
	Casting yards		
	Workshops/ repair facilities		
Concluding key subcontracting agreements	Design		What is the extent of subcontracting and whether sub contractors have enough time to complete the works assigned to them after these agreements to ensure overall completion in time
	Fabrication/erection		
	Earthwork		
	Concrete work		
	Form work		
	Prestressing work		
	Reinforced soil work		
	Road signs		
	Road markings		
Concluding key supply agreements	Bitumen		Whether supply agreements are for the whole assessed quantity and whether there is enough time after the agreements for the materials to be delivered and incorporated in the work to achieve overall completion.
	Cement		
	Reinforcing Steel		
	Prestressing steel		
	Anchor blocks		
	Sheaths		
	Bearings		
	Expansion Joints		
	Safety barriers		
	Safety devices		
Mobilizing plants and equipment including delivery, installation and commissioning: in-house production and construction	Earth moving equipment		Whether all the plants and equipment of assessed capacity are covered in these submissions and whet her there is enough time after mobilization to complete the work these are intended to
	Earthwork compaction equipment		
	Wet Mix Macadam Plant		
	Crushing Plant		
	Concrete batching Plant		

	Pre-casting plant		be deployed on.
	Hot mix Plant		
	Paving equipment		
	Hauling equipment		
	Compaction equipment		
Mobilizing plants and equipment including delivery, installation and commissioning: sub-contractors plants and equipment	Fabrication		Whether all the plants and equipment of assessed capacity are covered in these submissions and whet her there is enough time after mobilization for the subcontractors to complete the work assigned to them/
	Handling		
	Hauling		
	Erection/launching		
Mobilization of personnel and manpower (i/c subcontractors')	Project Manager		Whether all the teams are mobilized before the planned commencement of the work assigned to them
	Design team		
	Construction teams		
Utilization of mobilization advance drawn			By what time the mobilization advances are to be completely utilized, whether any mobilization still remains and the arrangement for funding the residual mobilization.

Work Plan

In the Work Plan the bidders are required to give a Process Flow Chart for Core Construction Activities indicating the planned commencement, completion of each activity within the planned Activity Time, interdependence of various activities, the Teams responsible for each of these Activities and the Hold Points, i.e. the Point at which the Planned Activity cannot commence unless some pending action is completed (see Figure below). Hold Point Clearance may be the responsibility of the Core Teams or the Enabling Teams (such as Procurement, Financing, Mobilization teams, etc). How the Management intervenes to clear the Hold Points and control the Activity times to achieve the completion in time would also be a part of submissions under the Work Plan.

Process Flow Cart

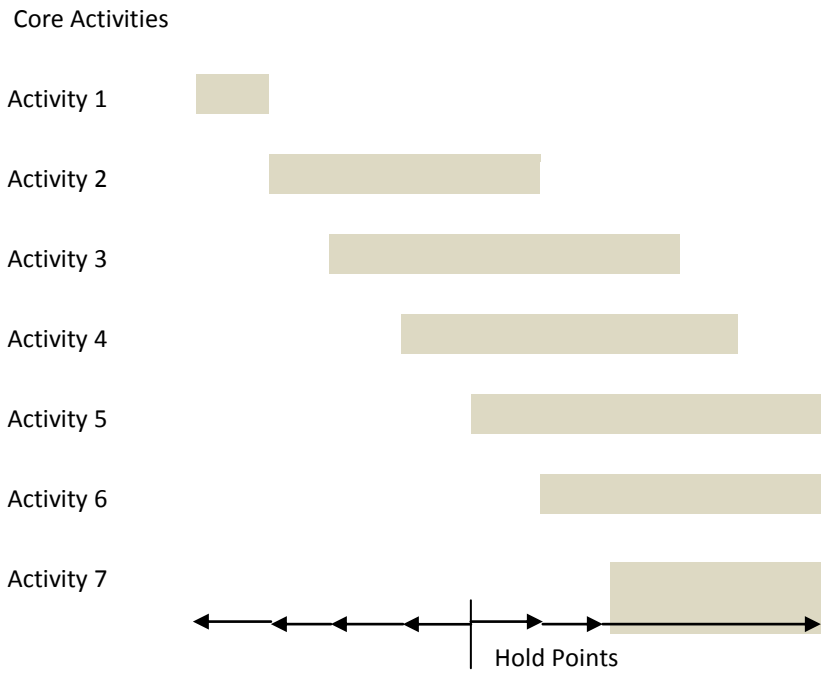

Figure 1: An indicative Process Flow Chart

The bidders are required to name the core construction teams, a coordination team or person for coordinating the activities of various teams and name a high functionary of the company responsible for troubleshooting if coordination fails. The responsibilities and authorities of the Teams and the personnel would also be delineated. Bidders are also required to have an internal mechanism to monitor the activities, anticipate the problems and a policy on timely intervention. The bidders' responses on these matters would be as given in Table 3 below.

Table 3: Evaluation Parameter- Work Plan

Features	**Attributes**	**Action**	**Basis for evaluation**
Core Teams	Design		Whether Teams and Personnel have been named and their responsibilities and authority indicated for each activity (even if one person may be part of more than one team)
	Earthwork		
	Subbase		
	Base		
	Bituminous		
	Drainage structures		
	Protection works		
	Bridge works		
	Safety Works		

Enabling Teams	Procurement		Whether Teams and Personnel have been named and their responsibilities and authority indicated for each activity (even if one person may be part of more than one team)
	Mobilization		
	Project Financing		
	Plant Operation and maintenance		
Coordination team	Inter-team coordination and feedback to management		Whether a Team or a person named and given the authority
Trouble shooting	What if coordination fails		How will the top management intervene
Internal Monitoring mechanism	Commencement of core activities, Activity time. Completion of core activities		Whether a mechanism is proposed and is adequate
Internal system for hold point management	Identification of Hold Points (1 to n), checklist of possible pending actions, teams responsible and management intervention		Whether the management anticipates the problems and can intervene in time
Target monthly physical and financial progress	Month-wise projection of Physical progress and Financial progress (as a percent of contract price and not absolute numbers)		Whether the targets are consistent with resources and lead to completion in time

Quality Plan

In Quality Plan the bidders are expected to indicate how they would put in place the Quality system and procedures to achieve the objective of overall quality in construction by ensuring the quality of inputs, processes and outputs through a clearly laid down procedure for inspection, testing, checking, acceptance, etc. The system should also specify the responsibilities of the Teams or its members for its operation. Independent Quality audit would be a part of contract and a mechanism for compliance with audit observations would also be provided. Quality Plan would include the Features and Attributes indicated in Table 4 below.

Table 4: Evaluation Parameter- Quality Plan

Features	Attributes	Action	Basis for evaluation
Quality of Material inputs	Earthwork Aggregate Sand		Whether appropriate methodologies for ensuring the

	Water Reinforcing Steel Prestrssing steel Cement Bitumen Anchor blocks Sheathing Bearings Expansion Jpints Drainage traps, spouts Crash barriers Road signs Road marking paints Road delineators Other safety devices Additves (lime, fly ash, plastizers/retarders, joint fillers, silica fumes,etc)	quality of material inputs , such as selecting the material source, inspection of materials, the testing to be done on the materials, their storage and handling, etc. as appropriate have been given and are adequate
Essential controls in Plants and equipment	Earth moving equipment Compaction equipment Hauling equipment Spraying/spreading equipment Paving equipment Crushing Plant Wet mix Plant Hot mix Plant Cold mix Plant Recycling Plant Concrete Batch mix Plant Dowel bar insertion equipment Joint/groove cutting equipment Texturing equipment Fabricatioin equipment Casting equipment Concrete pumping/tipping equipment Concrete compaction equipment Lifting and launching equipment Kerb casting equipment	Whether the plants and equipment proposed to be used have the necessary controls to ensure as appropriate the size, gradation, weight, volume, temperature, pressure, line, grade, level, speed, frequency, amplitude, rate of discharge/flow, uniformity of processes, etc., whether these controls are manual, mechanical, hydraulic, electronic or GPS based, and whether the controls are adequate.

		Road marking equipment	
		Road sign vehicles	
		Cleaning/watering equipment	
	Key production and construction processes and their acceptance	Plant and equipment calibration	Whether any system is proposed for acceptance of material inputs to be incorporated into the processes, of the manner in which plant operation is to be carried out, of the outputs of the plants, of operations like hauling, laying, paving, finishing, inspection, testing, etc. and whether appropriate team or person identified
		Site clearance	
		Setting out	
		Earthwork	
		Subbase	
		Base	
		Bituminous	
		Concrete paving	
		Road signs	
		Road markings	
		Safety devices	
		Temporary works	
		Plain Concrete	
		Reinfoeced concrete	
		Prestressed concrete	
		Segmental construction	
		Foundation	
		Substructure	
		Superstructure	
		Bearings	
		Expansion joints	
		Wearing coat	
		Drainage systems	
	Process flow of the overall Quality Process	Material inputs	Whether a Quality Process has been proposed and adequately covers the quality requirement
		Process	
		Outputs	
		Acceptance procedure	
		Inter-team coordination	
		Quality documentation	
	Quality Audit	Audit observations	Whether a system is proposed for compliance with audit observations
		Compliance mechanism	
		Time for compliance	

Safety Plan

In Safety Plan the bidders would indicate how they would put in place the Safety system and procedures to achieve the objective of overall safety of traffic as well as the workers during

construction. In addressing the workers' safety exposure to various kinds of risks have to be taken into account and mitigated, safety instructions, manuals and gears have to be provided to the workers, appropriate safety signs to be displayed at work and plant sites, a protocol of debriefing of the workers in case of accidents needs to be provided, and an emergency intervention protocol should be established. In traffic safety, the bidders would propose how they would manage safety in work zone by ensuring proper segregation of construction and normal traffic, safe merger of traffic due to lane closures, signing and marking plans and their implementation, visibility and conspicuity of construction zone during day and night, logistics of movement of construction traffic without interference with normal traffic, safety of traddic against overhead operations of plant and equipment, coordination with Police authorities, and information to users on construction activities. The bidders have to give the safety procedures in a process flow chart indicating the responsibility of the teams assigned for various activities involving planning, implementation, inspection and acceptance of the safety measures. Independent safety audit will be a part of contract and the bidders would indicate the mechanism for compliance with audit observations. The Plan would be submitted in Table 5 below.

Table 5: Evaluation Parameter- Safety Plan

Features	Attributes	Action	Basis for Evaluation
Safety of Workers	Safety instructions Safety gears Safety against heat and fire Safety against moving objects Safety against falling objects Safety while working at heights Safety while working at depths Safety while working in or under water Safety against moving traffic Safety during Plant operation Safety during construction operation Safety against hazardius materials Safety against toxic gases/fumes/dust Safety instructions to operators to prevent accident Medical aid at work site or plant site		Whether all critical aspects of Workers' safety are adequately covered in the Plan.
Safety during Plant and equipment	Safety Manuals for Plants and equipment		Whether all critical aspects of safety

operation		during plant and equipment operations are adequately covered in the Plan.
	Safety briefing to operators	
	Protocol for debriefing operators	
	Safety alarms in Plants and equipment	
	Protocol for response to safety alarm	
	Safe access to various Plant areas	
	Demarkation of areas of only authorized access	
	Protocol for access to authorized areas	
	Safety signs	
	Built-in redundancies in Plant and equipment operation	
Traffic safety during construction	Considerations for fixing work zone dimensions	Whether all critical aspects of safety during construction are adequately covered in the Plan.
	Considerations for fixing regulation zone dimensions	
	Signing Plan for regulation zone	
	Marking Plan for regulation zone	
	Arrangement for safe merger of traffic on closed lane with operating lane at the beginning of construction zone	
	Arrangement for segregation of normal traffic from construction vehicles/traffic	
	Arrangement for visibility of construction zone	
	Arrangement for opening of traffic in construction zone after completion	
	Logistics of movement of construction traffic	
	Safety against overhead operations of construction equipment on a trffic lane	
	Safe access to traffic on intersecting roads blocked by construction zone	
	Information to road users about traffic diversion	
Process flow of Safety Process, the Teams responsible,	Workers' safety manual and its acceptance	Whether all aspects of safety procedures are adequately

coordination and safety documentation			covered
	Plants and equipment safety manual and its acceptance Construction zone safety planning and its acceptance		
	Implementation of safety plans and its acceptance		
	Inter-team coordination		
	Safety documentation		
Safety Audit	Mechanism for compliance with audit observations and a time frame for compliance		Whether the proposed mechanism and timeframe are adequate

Environmental Plan

Bidders would be required to submit an Environmental Plan covering the manner in which they would comply with (a) the statutory environmental requirements relating to air, water and noise pollution, disposal of solid wastes, extraction of natural materials, (b) project specific clearances based on Environment Impact Assessment (EIA) including implementation of Environmental Management Plan (EMP), and (c) measures proposed to be taken at bidder's initiative to mitigate the adverse effects of construction

Table 6: Evaluation Parameter- Environmental Plan

Features	**Attributes**	**Action**	**Basis for Evaluation**
Statutory compliance	Air		Whether all statutory requirements are spelt out and proposed to be fulfilled
	Noise		
	Water		
	Solid waste disposal		
	Extraction of natural materials		
EIA/EMP compliance	Specific conditions for environmental approval (other than statutory requirements) Preparation and implementation of EMP		Whether all the conditions of Environmental clearance are complied with
Mitigating adverse effects of construction	Dust		Whether construction is

Noise Visual intrusion Debris/ Surplus materials Approach and easement rights of properties and businesses	proposed in clean environment without vusual intrusion

Performance rating (Part III)

In Part III of the submissions, the bidders would have to submit their performance rating on all works of threshold value more than that provided in Part I. (If there is no performance rating available for all bidders, as is the case at present because there is no system of performance evaluation at present), submission under this Part would not be required and all the provisions of the ITB would be interpreted as if Part III did not exist.

Appendix to ITB

The Client would provide all the relevant information in the Appendix for which reference is invited to the Appendix. In case any information still remains missing, the bidders may ask for it to be furnished and the Client would furnish the information to all bidders who purchase the bidding document

3. Preparation of Financial Bids

Bidders would note that the criteria for award of contract would not be the lowest price quote in absolute terms but the highest Technical Score (or the Final Technical Score, as the case may be) per unit of price. The Technical Score can rightly be considered to represent Overall Quality (as all relevant value delivering factors such as time, quality, safety and environment have been considered while arriving at it), the award criteria would mean 'Best Quality per unit of price'. (It would mean the same thing as the 'lowest price per Quality point').

The bidders may not necessarily gain by lowering the price while promising higher performance to win the contract because if they cannot maintain that performance within the price they receive, they would earn negative performance point. On the other hand, depressing both quality scores as well as cost as bidding strategy would run the risk of the bidders getting less than the minimum required 75 marks and hence not qualifying. The only gainer of the second strategy would be the bidders with outstanding performance rating as they would get bonus 15 points (20 %).

The bidders would, therefore, be advised to prepare their financial bids in a manner that optimizes the ratio Technical Score/Price while calculating the price realistically keeping in view the commitments made. The only way the price can be lower is if he somehow manages his supplies at lower cost (say by having long term arrangements, bulk orders, timely payments etc).

Concluding remarks

Some of the implications of the proposed system of bidding as discussed so far in Chapter 1 and 2 are obvious:

5. This will increase the price of the works for sure compared to what the client is used to paying. The accompanying gain in value is not exactly quantifiable except in a negative sense that in the present system the value for money is reduced because of post award time and cost increases.
6. The bidders would have to do lot of preparatory works before submitting the bid, which would require both time and cost to be incurred. The bidding time cycle would increase and so will the bidders' cost of preparation. It would be desirable to partially compensate the technically qualified losing bidders, say to the extent of Rs 5 lakh for projects in the range of Rs 100 to 500 crore. This would encourage competition and hence add value at small cost.
7. The Client's task of evaluation would become more difficult and help of consultants would be needed increasing the Client's cost of procurement. However, a more fair, transparent and credible bidding procedure would further encourage competition and add mean more value for money.
8. Unrealistic and speculative bidding landing the projects in problem resulting in either claims or the contractors getting broke would end.

Chapter 4:

Guidelines for Performance Evaluation

In Chapter 2 the proposed changes in the bidding documents were discussed and it was proposed that the Instructions to Bidders (ITB) document should have Annexes A and B providing Guidelines for Preparation and Evaluation of Bids and those for Performance Evaluation respectively. Chapter 3 discussed the proposed contents of Annex A. In this Chapter, the contents of Annex B, i.e. the Guidelines on Performance Evaluation would be discussed.

Performance Evaluation System

The Performance Evaluation system would evaluate the performance of the contractors in terms of (a) their contractual obligations and (b) the manner in which these are fulfilled. The contractual obligations are provided in the Contract and Technical Specifications and the manner in which these are to be fulfilled are given by the bidders at the time of submission of bids as part of their Technical Approach (Part II of the Technical Bid). The System would clearly identify the Evaluation Parameters, set the benchmark for evaluation, set the criteria for judging the performance with reference to the benchmarks, and devise a process by which the evaluation is continuously done, documented and updated throughout the contract period. The system would also specify how the outcomes of the evaluation are to be used. All the bidders, one of whom would be the prospective contractor, would be informed of the Evaluation system including the parameters, the benchmarks, the criteria, the process and the impact of the evaluation outcomes at the time of bidding.

Evaluation Parameters

There cannot be any inconsistency between the Bid Evaluation Parameters and the Performance Evaluation parameters because what is evaluated is the performance against the promise, latter being contained in the submitted bid. Therefore,, performance Evaluation parameters would remain the same six parameters, viz., (1) Understanding of the Project (2) Mobilization Plan, (3) Work Plan, (4) Quality Plan, (5) Safety Plan and (6) Environmental Plan along with the same ‘Features’ and ‘Attributes’.

Evaluation benchmark

Since the performance is to be judged against the promise, the first set of benchmark, the planning level benchmark, has to be provided by the bidders' submissions at the time of bidding. The winning bidder may choose to stick to these commitments during the contract implementation or may modify theses plans suitably after award of contract. In the latter case the revised plans would provide the second set of benchmarks, the execution level benchmark, against which performance during contract operation would be judged. Provided, however, that the execution level benchmark itself would be evaluated against the planning level benchmarks and positive or negative performance points would be awarded for the change depending upon whether the revised plans are superior or inferior to the original plans.

Evaluation criteria

Evaluation will be done in terms of deviations from the benchmarks. If the deviation during any month is 10 % with respect to the benchmark, that would be considered one unit and these units would keep on accruing till the deviation becomes less than 10% on both positive and negative directions. Each unit would fetch 2 marks in the execution stage and 1 mark in the planning stage. This is because at the execution stage there is flexibility to change the deviations by improved performance or deteriorating performance, but at the planning stage the change becomes fixed as if to apply throughout the contract period. The planning level performance points would accrue to the contractor right at the beginning of the work and would be part of the cumulated monthly performance points.

Measuring the deviation at times would be difficult in case of qualitative parameters like quality, safety and environment and also in cases of management interventions. In such cases the effort would be to turn the subjective attributes into measurable objective criteria. For example, if the quality of inputs as an attribute has to be evaluated, one has to look into the Technical Proposal to see what actions are proposed therein to ensure this. If there are 5 action items and 1is not taken, the deviation would be 20 % and 2 units or 4 negative marks would accrue. Similarly, for management interventions, if some actions are not taken as per the Technical Approach, the percent those missing actions would bear to the total number of actions would be the extent of deviation.

Evaluation process

Performance Evaluation should be a eight-step process as described below:

Step 1: Spell out each evaluation parameter (these are six as discussed above), featire and attribute

Step 2: Look for the **specific outputs, outcomes, projections, or actions** propsed by the contractor in his Technical Approach submissions

Step 3: Whether the contractor wants to change the submissions post award, if yes measure the deviations from the original proposal and award 1 mark per unit of deviation, which is 10% deviation from the benchmark

Step 4: Compare the actual performance in the first month with the projections for the month and measure the deviation. Award 2 marks per unit of deviation.

Step 5: Add the performance points in Steps 3 and 4, which will give the end of the month cumulated points.

Step 6: Repeat the process for the next month and add to the previous months cumulated points, and continue the process till end of contract.

Step 7: Decide the entitlement to or liability for bonus and liquidated damages on performance points reaching the threshold value of 500 points positive negative respectively

Step 8: Rate and certify the rating of the contractor's performance on completion of contract on the basis of already prescribed criteria

Performance Rating

If the total cumulated performance points reach 500 (which in very broad terms would mean equivalent to 20-25% deviation from what was promised), that would be the threshold for bonus or liquidated damages depending upon whether it is on the positive or negative side. Accordingly, at the end of contract the net performance points would determine the rating of the contractors as follows:

Outstanding:	More than 1000 points net positive
Very Good:	500-1000 net positive
Good	0-500 net positive
Satisfactory	0-500 net negative

Evaluation Parameters	Broad requirements	Specific actions	Performance benchmark	Actual projection/ performance	Under/over performance (U/O)	Extent of under/over performance	Reference to marking criteria	Points awarded (-) for U (+) for O
A. Consistency of Work Plan with Technical Proposal								
1.Targets and completion as per Work Plan	Lead to completion in time	**Projection of milestones in 5 phases of implementation**	**Technical Proposal**					
		(i)predominantly mobilization (Phase I)	…months	…months		…months	5 marks per month or part of month exceeding 15 days	
		(ii) earthwork, subbase/base (Phase II)	…months	…months		…months	-D0-	
		(iii) culverts, drains, protection works (Phase III)	…months	…months		…months	-D0-	
		(iv) bituminous/ concrete Construction Phase (IV)	…months	…months		…months	-D0-	
		(v) bridges (Phase V)	…months	…months		…months	-D0-	
		Projection of key production outputs i/c sourced materials at peak demand	**Technical Proposal**					
		Earthwork	…cum/month	…cum/month		…Per cent	5 marks if the difference is 10 percent and thereafter one mark for each percentage point difference rounded off to the nearest whole number	