

Chapter II

Planning

2.1 Corporate plan and project selection

Phase-I of NHDP envisaged upgradation of 6359 Km. of National Highways at an estimated cost of Rs.30,300 crore by June 2004 using multiple execution cum funding models like BOT-Toll, BOT-Annuity and direct execution of the projects by NHAI. An essential prerequisite to ensure that the mammoth task achieved its objectives in a timely and cost effective manner was preparation of a corporate or strategic plan by the Authority that would help in prioritising, scheduling and monitoring the implementation of the projects. Better management practices required that guidelines for determining the mode of implementation of a project whether through Engineering, Procurement and Construction (EPC) mode, BOT-Toll, BOT-Annuity or Special Purpose Vehicle (SPV) should have been clearly laid down.

2.1.1 Corporate Plan

Audit observed that the Authority had not prepared any corporate or strategic plan for systematic implementation of Phase-I to provide a macro-level focus on the project. The execution of individual projects was being monitored through a system of concurrent review.

While accepting that the Authority did not have a published document on corporate or strategic plan, the Authority stated that NHDP projects were being implemented on the basis of the NHDP financing plan which was approved by the Committee on Infrastructure in March 2006 and monitorable targets fixed in consultation with the Planning Commission.

The reply confirms that the Authority did not prepare a corporate or a strategic plan at the inception of the NHDP Phase-I. Such a plan would have formulated a forward looking and realistic framework for implementation which would establish accountabilities for deviations, if any.

2.1.2 Project Selection

There were no internal guidelines or directions from the Government for determining the mode of execution of the projects when NHDP Phase-I was started. Such guidelines were first issued in March 2006. While seeking in-principle approval for NHDP Phase-I from the Ministry of Shipping, Road Transport and Highways (Ministry), the Authority indicated the mode in which each road project was to be executed i.e. BOT-Toll or BOT-Annuity or EPC. Audit, however, observed that in all the 17 projects selected for PPP, the Authority did not assign any basis for proposing execution of a particular project under PPP arrangement. For instance, Delhi-Gurgaon project was originally proposed to be executed either through EPC or through SPV while Panagarh-Palsit project was to be executed through EPC. These projects were, however, subsequently opened for BOT-Toll and BOT-Annuity modes, respectively. Further, no comparative evaluation of the financial implications of executing the projects being opened to PPP through BOT-Toll or BOT-Annuity was undertaken.

The Authority stated that PPP was a new concept introduced in implementation of NHDP Phase-I and 17 projects including Delhi-Gurgaon and Panagarh-Palsit projects were selected

for PPP mode as pilot projects in the interest of the Authority which matches with present thrust of Government on BOT projects. The Authority further stated that the Government approved the manner of execution of project and the funding mechanism and that for Delhi-Gurgaon project, the financial consultant recommended implementation of the project on BOT basis. The reply is not tenable as the Authority should have first analysed the financial implication and made a comparative study of executing the projects under alternate modes of execution before offering these projects under BOT mode. The absence of such guidelines rendered the decision making process susceptible to adhocism. For instance in Delhi-Gurgaon project, initially the financial consultant did not find the possibility of executing the project on BOT-toll basis viable. However, based on the Authority's direction of reworking the financial model based on increased toll charges, the viability was established but the financial consultant had still recommended preparation of revised cost estimates and traffic survey for a more realistic model. The Authority, however, decided to execute the project under BOT mode without undertaking any such activity. Under such uncertain conditions, it was imperative that some broad principles should have been laid down for deciding the mode of execution of Phase-I projects. In fact, as per the guidelines issued by the Ministry in March 2006, it has prioritised execution of projects through BOT-Toll over BOT-Annuity with the EPC route being the last resort.

2.2 Detailed Project Reports

Preparation of accurate and realistic Detailed Project Reports (DPR) for any highway project is the foremost critical activity. Of the eight projects selected for detailed audit, it was observed that the Authority did not prepare DPRs for two projects viz Jaipur-Kishangarh and Satara-Kagal and the DPRs of Tambaram-Tindivanam and Delhi-Gurgaon projects had the following deficiencies:

2.2.1 In Tambaram-Tindivanam project, the total project cost estimated by the lowest bidder was Rs.378.70 crore against the DPR estimate of Rs.564.30 crore. The variation of 33 *per cent* of the DPR estimate indicated an unrealistic estimation by the DPR consultants. The Authority neither analysed the reasons for such a huge difference nor held the consultant, who had prepared the DPR, accountable in any way.

The Authority stated that considering the trend of bid price quoted for civil works in the region, the estimated cost of the lowest bidder was considered competitive and therefore accepted. The reply is not tenable as such huge variation defeated the very purpose of preparation of DPR. The Authority, therefore, should have analysed the reasons for such a substantial variation and recorded the same.

The DPR further suffered from following deficiencies:

- (i) The actual traffic was much lower than the estimates. This was due to the fact that the DPR consultant had not taken into consideration factors such as monthly concessional passes, multiple trips of vehicles, etc.
- (ii) The DPR omitted bus shelters to be provided at 25 locations for which the Authority had to make a fresh provision of Rs.eight crore.

- (iii) The DPR did not provide for capping of kerb in the existing four lanes between Km. 28 to Km. 61, with the result that this item of work was executed as an additional item at a cost of Rs.3.84 crore.
- (iv) The DPR was prepared without consulting the local population and one flyover in front of a temple between Km. 91 and Km. 92.750, at an estimated cost of Rs.21 crore, had to be deleted from the scope of work due to local demand.
- (v) CRRRI also pointed out that the specifications of the material to be used in the project and the location of borrow area for soil were not properly mentioned in the DPR.

The Authority stated that the feasibility report was prepared in September 2000 and the traffic projection in feasibility report was only an estimated figure which did not match the actuals. The reply only confirms that the traffic projection was inaccurate and failed to take into account the known factors.

2.2.2 In Delhi-Gurgaon project, DPR envisaged construction of eight-lane highway from Km. 14.3 to Km. 36.63 and thereafter six-lanes up to Km. 42 in Gurgaon. In the course of detailed designing and execution of the project, the Authority issued change of scope notices between April 2003 and May 2004 for certain additional works. Accordingly, IC finalised and issued to the Concessionaire (June 2006) the change of scope order valuing Rs.146.62 crore constituting 21 *per cent* of the project cost. The change in scope of work included change in the height of underpasses from 3.5 metre to 5.5 metre, construction of elevated stretch from Rao Tula Ram Marg to Palam and additional underpasses at two locations, critical items that should have been foreseen at the time of preparation of DPR itself. Further, no responsibility was fixed on the DPR consultant for their failure to take into account the Indian Road Congress (IRC) specifications on the minimum vertical height of 5.5 metre for underpasses.

The Authority stated that at the time of preparation of DPR, provision of underpasses with 3.5 metre height was made as per site requirements and IRC norms. Due to unprecedented and unexpected growth in traffic, Government of Haryana insisted upon provision of underpass height as 5.5 metre to facilitate flow of heavy vehicles/fire tenders, etc.

The reply is not tenable as the pace of growth of traffic in the area did not pick up suddenly between April 2003 and May 2004, but was known even before the award of work. The DPR should have been prepared after taking into account the expected traffic growth of the area. The Authority's reply in respect of height of underpass is not tenable as IRC specifications clearly stipulate height of underpass as 5.5 metre for urban areas and the entire stretch is in an urban area. In fact the change of scope valuing Rs.146.62 crore which had to be borne by the Authority, set-off the premium of Rs.61 crore in the form of negative grant paid by the Concessionaire.

2.3 Fixation of concession period

The Authority, before calling for the bids in respect of BOT projects, fixed the concession period up to a maximum of 30 years. However, before fixing the concession period, the Authority had not systematically developed financial models to indicate the benchmark Internal Rate of Return (IRR) which would determine the optimum concession period within

which the Concessionaire would recover the capital cost of the project and other project-related expenditure besides earning a reasonable return. In the absence of such a system, Audit calculated the IRR of four BOT-Toll projects selected for audit based on discounted post tax cash inflows and outflows based on the projections made in the DPRs/concession agreements and found that the IRR of Jaipur-Kishangarh and Delhi-Gurgaon projects was 24 *per cent* each and it was 17.5 *per cent* and 20 *per cent* in respect of Tada-Nellore and Satara-Kagal projects, respectively.

Given the fact that the cost of borrowings at the time of evaluation of bids/award of contracts (2001/2002) was approximately 15 *per cent*^{*} and after allowing a premium of five *per cent* for the risk, the reasonable IRR for the above projects would work out to 20 *per cent*. Based on the reasonable IRR, the concession period that should have been allowed to the Concessionaire for Jaipur-Kishangarh and Delhi-Gurgaon projects worked out to 12 and 14 years, respectively whereas a concession period of 20 years each was fixed for these projects. Consequently, based on the projected traffic collection and reasonable concession period, the Concessionaires would gain Rs.121.63 crore and Rs.187.77 crore, respectively (after discounting at a rate of 20 *per cent*) during the extended concession period[▼]. If the Authority had fixed the concession period on the basis of sound financial evaluation, the concession period in Jaipur-Kishangarh and Delhi-Gurgaon projects could have been restricted to 12 years and 14 years, respectively. By uniformly fixing the concession period at 20 years for both these projects, the Authority lost the opportunity of either collecting toll revenue by itself for the remaining eight and six years, or allowing the road users to use the project road by paying lesser or no toll during the same period.

The Authority stated that the system of preparation of financial model was in place though it was in the initial stages and that the financial analysis of these two projects were got done by SBI Caps and Infrastructure Development Finance Company. The Authority further stated that prior to bidding, the financial projections by the financial consultants were only available while audit observations are based on post tax cash inflow and outflow as per DPR/concession agreement. The Authority also stated that care was taken to include revenue sharing clauses in these two concession agreements.

The reply is not tenable as audit working is based on traffic projections in DPR of Delhi-Gurgaon project and revenue projections in concession agreement for Jaipur-Kishangarh project as no DPR was prepared for Jaipur-Kishangarh project. Inclusion of revenue sharing will not affect audit working as it is based on revenue projections up to the threshold limit and revenue sharing arises only after that limit is exceeded.

2.4 Implementation of the projects

The Authority's major work in BOT projects comprises preparation of Feasibility reports/DPRs, selection of the Concessionaire and the Independent Consultant (IC), making available land and thereafter monitoring the execution of the project through the IC.

^{*} 10.5 *per cent* after considering the tax savings

[▼] From 2015-16 to 2022-23 in respect of Jaipur-Kishangarh project and from 2017-18 to 2022-23 in respect of Delhi-Gurgaon project

2.4.1 The Authority was required to award the contracts for 17 BOT projects of Phase-I by March 2002 and complete the execution by June 2004 as per the Government approval (December 2000). Audit observed that against this target date, the Authority could complete only five projects in time. There was delay of 2 to 42 months in completion of the remaining projects as per details given in *Annexure-1*. The delays occurred at the stage of award of contracts and during execution as discussed in the succeeding paragraphs.

2.4.2 Delay in award of BOT-Toll and BOT-Annuity projects

At the time of approving the projects, the Government set dates by which the contracts were to be awarded by the Authority. **Table 5** gives the details of dates of award of concessions for the eight projects selected for audit against the scheduled dates.

Table 5: Delay in award of concessions

Sl.No.	Name of the project	Due month for award of work	Actual month of award	Delay in months
1	Delhi-Gurgaon	March 2001	April 2002	12
2	Jaipur-Kishangarh	March 2001	May 2002	13
3	Satara-Kagal	March 2002	January 2002	-
4	Nellore-Tada	March 2001	March 2001	-
5	Panagarh-Palsit	March 2001	November 2001	7
6	Palsit-Dankuni	March 2001	March 2002	11
7	Tuni-Anakapalli	March 2001	October 2001	6
8	Tambaram-Tindivanam	March 2001	October 2001	6

Table 5 shows that concessions for only two of the eight projects were awarded in time. The analysis of the delays in award of remaining six projects is as follows:

- In respect of Delhi-Gurgaon project, the Authority changed the mode of execution from Special Purpose Vehicle to BOT-Toll in May 2001 despite the fact that the target month for award of contract was March 2001. This led to a delay of 12 months in award of concession.
- In respect of Jaipur-Kishangarh project, the single bid received in August 2000 was cancelled in October 2001. The revised bids were finalised in February 2002 and the concession agreement was signed in May 2002.
- In respect of Panagarh-Palsit project, the delay in award was due to re-tendering and subsequent negotiations with the lowest bidder.

- In respect of Palsit-Dankuni project, though the target month for award of concession was March 2001, the Authority initiated action for the same in September 2001 and finally awarded the contract in March 2002.
- In respect of Tuni-Anakapalli and Tambaram-Tindivanam projects, the delay in initiating the tendering process resulted in overshooting the scheduled dates.

2.4.3 Delay in execution of projects

Table 6 gives the details of the due month for completion of the project as per contract and the actual month of completion.

Table 6: Delay in execution

Sl. No.	Name of the project	Due month for completion of work	Actual month of completion	Delay in months
1	Delhi-Gurgaon	July 2005	January 2008	29
2	Jaipur-Kishangarh	September 2005	March 2005	-
3	Satara-Kagal	August 2004	May 2006	20
4	Nellore-Tada	December 2003	February 2004	1
5	Panagarh-Palsit	December 2004	June 2005	5
6	Palsit-Dankuni	February 2005	July 2005	4
7	Tuni-Anakapalli	November 2004	January 2005	1
8	Tambaram-Tindivanam	November 2004	October 2004	-

The major reasons for the delay in execution in respect of three projects are given below:

- In the Satara-Kagal project, of the overall delay of 20 months there was delay of nine months in execution of additional items of work and a further delay of 11 months in completion of the project due to deficient performance of the Concessionaire.
- In Delhi-Gurgaon project, failure to provide land to the Concessionaire in time and delay of 26 months in finalisation of change of scope orders for Rs.146.62 crore (as discussed in para 3.12.1) by the Authority contributed to the delay in completion of the project.
- In the case of Panagarh-Palsit project, there was a delay of five months in making the required land available and finalising issue of change of scope orders.

The Authority stated that most of the projects were completed with marginal time overrun and the delay in award of some projects was due to delayed DPR, re-bidding, problems in

land acquisition etc. Delhi-Gurgaon project was delayed mainly due to delay in land acquisition and huge change of scope of work.

The reply is not tenable as the delay in finalisation of tender for Jaipur-Kishangarh could have been avoided if the Authority had planned its activities and fixed the yearly targets to match the target date of NHDP as a whole. In respect of Satara-Kagal, the environmental clearance, utility shifting and land acquisition were the responsibility of the Concessionaire and hence the Concessionaire should have been penalised for the delay. In respect of Delhi-Gurgaon, though the ownership of the land was not transferred, the Ministry of Defence and Airport Authority of India gave working permission to the Authority during July 2003 to April 2005 but the Concessionaire commenced the change of scope works only in July 2005 because of non-finalisation of rates for change of scope items by the Authority.

Recommendation No. 1

The Authority should strengthen its planning machinery to monitor and take corrective action as required for timely execution of projects.

Recommendation No. 2

The Authority should establish procedures and define staff accountabilities

- (i) for computing the concession period after sound financial evaluation has been carried out;***
- (ii) to ensure that detailed project reports are prepared for each project planned to be undertaken after extensive consultation with the district officials and public representatives; and***
- (iii) to review DPRs before commencement of tendering process for any significant variations between the DPR and tenders received to avoid award of additional items of work on nomination basis. The Authority should establish a review system at the appropriate level that includes fixing of responsibility for inaccurate traffic projections, project costs and other significant deficiencies in the DPR.***