

## Chapter - 4

# Award of Project and the Concession Period

## 4.1 Award of Project

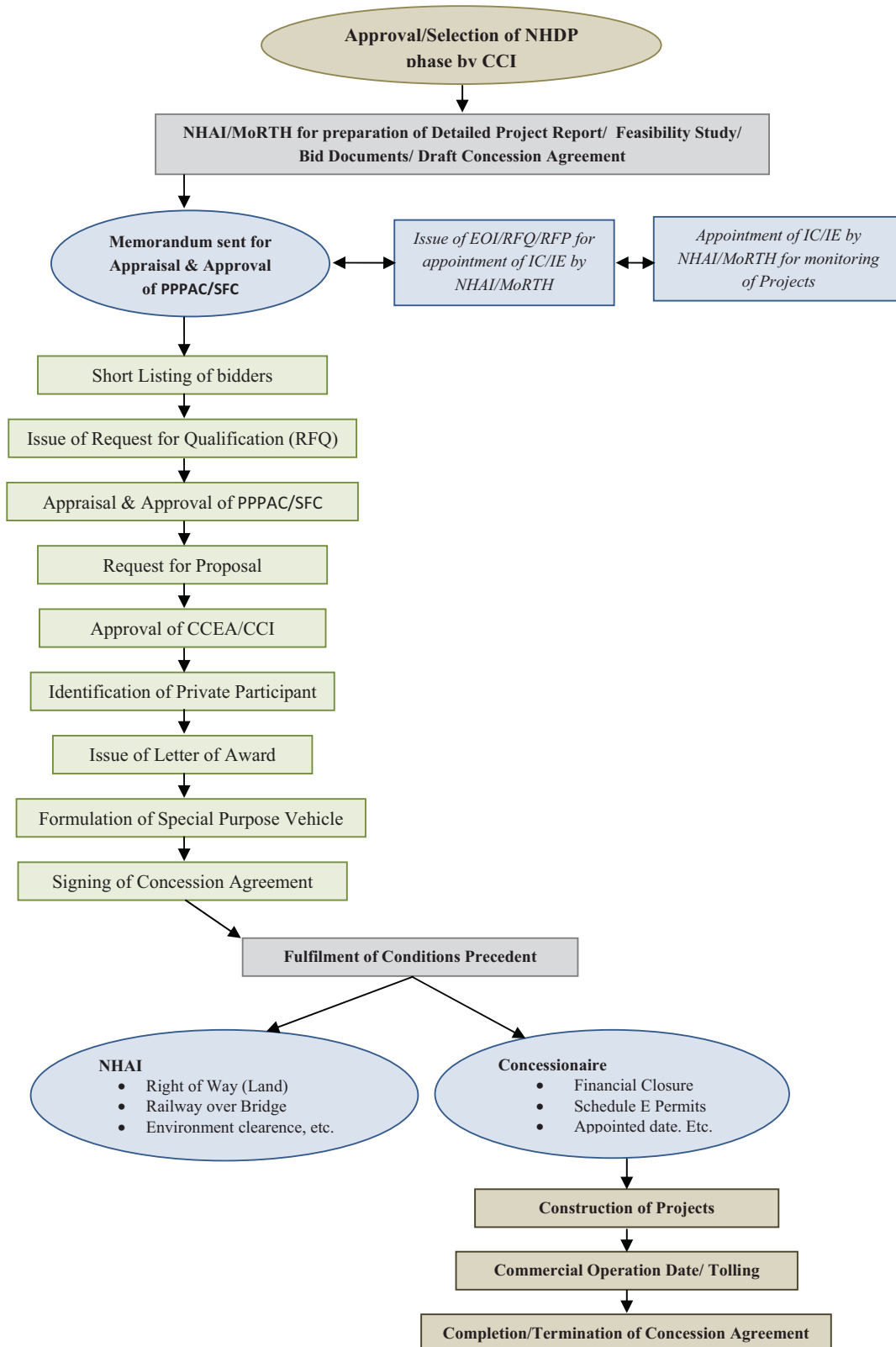
### 4.1.1 Procedure adopted for award of projects under NHDP

MoRTH first identifies the road stretches eligible for up-gradation/widening and then proposes their inclusion under a phase of NHDP. The proposal for approval of a phase is then submitted to the Cabinet Committee on Infrastructure (CCI). On approval by the CCI, MoRTH transfers the stretches under the phase so approved to NHAI for implementation.

NHAI in turn, engages a DPR/feasibility consultant for each project (having one or more road stretches) to determine project features, preliminary design and estimated cost of the project. On receipt of the feasibility report/draft DPR, NHAI appoints financial & legal consultants for project structuring, preparation of PPPAC documents including Draft concession agreement (DCA), which is to be based on the Model concession agreement (MCA) and schedules formulated by the Planning Commission. The complete proposal is submitted to the PPPAC through MoRTH, for its appraisal /approval. NHAI carries out the required changes as suggested by PPPAC, if any, and the modified proposal is re-submitted to PPPAC for approval.

On approval by PPPAC the individual project is submitted to CCEA/CCI for its final approval. Thereafter, the process of engaging a concessionaire commences which consists of different stages such as Expression of Interest (EoI)/Request for Qualification (RFQ), Request for Proposal (RFP) evaluated by the Evaluation Committee's formed by NHAI and final award of the project to the successful bidder. After award, the bidders form a Special Purpose Vehicle (SPV) i.e. the concessionaire, who executes the work. Flow chart on next page describes the procedure for award of projects.

## Flow chart of establishment of Public Private Partnership (PPP) Projects in NHAI



#### 4.1.2 Restructuring of unviable projects and non transparent award of projects

As an implementation agency for development of highways, major work of NHAI in BOT projects comprises preparation of feasibility reports/DPRs, selection of the concessionaire, Independent Consultants/Engineers (IC/IE) and Safety Consultants (SC), making available land and monitoring the execution of the project.

PPPAC guidelines for formulation, appraisal, approval of PPP projects provide (Para 9.5 of the guidelines) that the PPPAC will either recommend the proposal (with or without modification) or request the Administrative Ministry to make necessary changes for further consideration of PPPAC. Instances were noticed in Audit where projects considered unviable on BOT-Toll either by DPR consultants/NHAI/PPPAC were re-structured after making major changes in the initial project parameters to make them viable. However, no fresh RFQs were invited in such cases. There were also cases (namely Jaipur-Tonk-Deoli, MP/MH border-Nagpur including construction of Kamptee-Kanhan and Nagpur Bypass and Kanpur-Kabrai) where NHAI unilaterally changed the scope of projects which were awarded without PPPAC approval. Cases of change of scope by deletion of major items of work at concession agreement stage and allowing undue post bid benefits to concessionaires were also seen. These projects are discussed below:

##### 4.1.2.1 Jaipur-Tonk-Deoli

CCEA approved (December 2008) the project for 6-laning of 79.80 km of Jaipur-Tonk Section and 4-laning of 66.5 km of Tonk-Deoli section of NH 12 at an estimated cost of ₹ 1183.60 crore without any VGF with a concession period of 25 years. The provisional completion certificate of the project was issued on 27 September 2013.

Due to inadequate response from the bidders initially, NHAI restructured the project from 6/4- lane to 4/2-lane at an estimated cost of ₹ 792.06 crore. Audit noticed that despite major change in the scope of work as well as cost, NHAI on its own restructured the project as 4-laning of the entire stretch with a grant of ₹ 306 crore (38.63 per cent). Fresh approval of PPPAC/CCEA was not obtained.

NHAI stated (August 2013) that since the cost of the project was reduced and not increased, no fresh approval of PPPAC/CCEA was required.

The contention of NHAI was not correct, as the earlier approved cost of ₹ 1183.60 crore was for 6/4-laning project, whereas the reduced cost of ₹ 792 crore was for 4-laning only. Hence, the cost reduction was on account of reduction in the scope of work and was hence not comparable with the earlier cost of the project. The project approved at earlier cost was without any VGF, whereas the project in question has been awarded at a VGF of ₹ 306 crore. Further, the guidelines approved by the CCI (October 2005) for appraisal and approval of PPP projects clearly provided that restructuring of projects will be taken up by the Administrative Ministry only on the recommendation of the PPPAC. As such,

award of work at a VGF of ₹ 306 crore without PPPAC/CCEA approval was beyond the powers of NHAI.

While discussing the issue in the 'Exit Conference' held with MoRTH and NHAI on 22 July 2014, Secretary, MoRTH and NHAI agreed with the Audit contention.

#### 4.1.2.2 Jalandhar-Amritsar:

The Detailed Project Report (DPR) for 4 laning of Jalandhar-Amritsar section was prepared thrice - in 2000, 2004 and 2011. The correspondence made available indicated that DPR of 2000 covered the entire section of 69 kms (i.e. from km 387.100 to km 456.100). In the revised DPR of 2004, the stretch was divided into two sections i.e. from km 387.100 to km 407.100 (20 kms) (Section 1) and km 407.100 to km 456.100 (49 kms) (Section 2) due to high structural cost in Kartarpur town and non-viability of the said stretch on BOT mode. Therefore, the DPR consultant recommended (February 2011) execution of 20 km stretch under the EPC mode of funding. Accordingly, the work of 6-laning of the 20 km 2-lane (section 1) was awarded in November 2013 under EPC mode. Thus, one stretch of the project road from km 96.00 to 387.100 km is under 6-laning; km 407 to km 456 (Section 2) is 4-laned and the stretch of 20 km from km 387.100 to 407.100 km is still 2-lane. The outline sketch is as below:

Amritsar City _____	===== Jalandhar city _____	_____ Panipat
Km 456.100 to km 407.100 (49Km) M/s Jalandhar-Amritsar Tollways Ltd 4 laned completed in April 2010	km 407.100 to km 387.100 (20Km) 2 Laned	km 387.100 to km 96.000 (291.1 km) M/s Soma Isolux NH-one tollway 6-laning is under progress

Delay by NHAI to widen this 20 km stretch led to a traffic bottleneck and negated the benefits of widening the remaining part of the road to 4/6 lane affecting smooth connectivity on the entire 69 km stretch. The provisional completion certificate of the project was issued on 29 April 2010.

MoRTH accepted (September 2014) the audit observation.

#### 4.1.2.3 Kishangarh-Udaipur-Ahmedabad

Initially, two separate sections (i) Kishangarh to Udaipur (315 km) and (ii) Udaipur to Ahmedabad (242.51 km) were approved by CCEA in January 2009 and January 2010 at a TPC of ₹ 3384 crore and ₹ 1750 crore, respectively. In January 2011, when the RFP had already been issued to qualified bidders for Kishangarh-Udaipur section and RFQ bids were already under evaluation for Udaipur-Ahmedabad section, NHAI moved a proposal to MoRTH stating that the project should be taken up as one 'Mega project' so as to attract international bidders.

However, the technical wing of MoRTH, in its preliminary examination expressed reservations about clubbing the two projects into one at this advanced stage as it would have led to delay in implementation. It also opined that the two individual projects were of large enough size to attract international bidders while combining the two would make the project too large and therefore difficult to implement and operate for the long period of concession. The combined project was, however, approved by CCI (September 2011) and finally awarded by NHAI (September 2011) to M/s GMR Infrastructure Ltd. at a TPC of ₹ 5387.30 crore i.e. higher by ₹ 253.30 crore as compared to the TPC of two individual projects of ₹ 5134 crore (₹ 3384 crore + ₹ 1750 crore).

MoRTH in its reply stated (September 2014) that these two sub-projects were combined into one mega project so as to attract international concessionaires and also to inject new standard and innovation in project constructions and implementation. MoRTH further, did not accept the Audit view that NHAI combined two sub-projects into one mega project and awarded the same in spite of objections of the Ministry. MoRTH accepted the fact that appointed date could not be fixed due to delay in obtaining environment clearance and as a result of this, the concessionaire served a termination notice (December 2012). However, the concessionaire expressed (in February 2013) interest in reviving the project and put forward certain suggestions regarding rationalisation of premium. In the meantime, environment clearance was obtained in March 2013. Proposal for rationalisation has been approved by the Government and conveyed to the concessionaire in April 2014 by NHAI. However, no response has been received from the concessionaire till date.

From the reply given by MoRTH definite comment cannot be arrived at since no additional documents have been provided to support the contention that the proposal for the merger of the two projects was taken by NHAI. Further, it has been mentioned in the note of the Ministry dated 3-2-2011 that these two projects were included in Work Plan I as separate projects and were also approved by the PPPAC/CCI as such. The note also stated that due to the decision of clubbing these projects, the bidding processes which were in advance stages for both, were annulled and this would lead to delay in the implementation of these projects. In addition it was noted that these individual projects were on their own big enough to attract international bidders and clubbing of the same was not appropriate. It was also noted that the design capacity of the stretch would be reached in between the proposed concession period and that a very long stretch would create problems if in any eventuality termination clause is invoked for delay in any small stretch. Despite the above reservations expressed in the note, it was decided to merge the two projects in a meeting chaired by the Minister, MoRTH in February 2011. PPPAC Note also reveals that MoRTH was already aware of the difficulties in obtaining environmental clearance and in spite of that NHAI went ahead with awarding the mega project.

With respect to the issue of rescheduling of premium payable to the concessionaire, the views of the C&AG have been communicated to MoRTH vide our letter dated 11 July

2013. In the said letter it has been clearly stated that such rescheduling is not consistent with the concession agreement and would have implications for the bidding process adopted to determine the concessionaire. Further, in any case, though the project was awarded at a premium of ₹ 636 crore per year, the same has not materialised as the concessionaire has gone in for litigation and the appointed date was yet to be declared. In the process, NHAI has already been deprived of premium of ₹ 1197.80 crore for the first two years as further discussed at para No. 5.2.3 of this report.

#### **4.1.2.4 MP/MH border-Nagpur including construction of Kamptee – Kanhan and Nagpur Bypass**

The project was approved by CCEA on 11 February 2009 at a TPC of ₹ 1170.52 crore. The concession period for the project was fixed at 27 years. As this project was un-viable and received poor response from bidders, NHAI added (July 2009) the maintenance of already 4-laned stretch of Nagpur- Hyderabad section of NH-7 from km 14.600 to km 36.600 (22.015 km) along with tolling rights without obtaining prior approval of CCEA to the revision. Fresh RFQ was not issued and five bidders shortlisted at RFQ stage were invited (July 2009) to submit revised bids. The project was awarded (August 2009) to M/s. Oriental Nagpur Bye Pass Construction Pvt. Ltd. with VGF of ₹ 455.21 crore. It amounted to a positive grant to the concessionaire, M/s. Oriental Nagpur Bye Pass Construction Pvt. Ltd. of ₹ 559.21 crore (₹ 455.21 crore positive grant quoted by the lowest bidder and ₹ 104.00 crore cost of the added stretch) which worked out to 47.77 *per cent* of the TPC.

As per the VGF mechanism, in order to make a project viable, a grant of up to 40 *per cent* of TPC may be granted to the concessionaire. Thus providing VGF of ₹ 559.21 crore was in violation of the ceiling limit of VGF of 40 *per cent* of the TPC laid down by CCEA. The amount of excess grant works out to ₹ 91.00 crore (i.e. 7.77 *per cent* of ₹ 1170.52 crore).

MoRTH replied (September 2014) that 4-lane section of km 14.600 to km. 36.600 was included in the scope of the project to attract bidders as the ceiling of 40 *per cent* VGF was not enough as per the financial viability worked out by the bidders. Therefore, the Audit contention was not acceptable. However, this reply is obfuscatory since the already developed 4-lane section of km 14.600 to km 36.600 was included in the project for maintenance and benefit of collection of tolling right without approval of the PPPAC/CCEA and in violation of the ceiling limit of VGF of 40 *per cent* of the TPC laid down by CCEA.

#### **4.1.2.5 Kanpur-Kabrai**

The project for 2-laning with paved shoulder of 123 kms of NH-86 was approved by CCI (August 2010) at a TPC of ₹ 373 crore. The concession agreement was entered (March 2011) into with M/s. PNC Kanpur Highways Ltd. on the TPC of ₹ 373 crore as per the



estimate of the final feasibility report (May 2010) which included ₹ 17.59 crore towards the cost of grade separator and service road at km 41.557. However, while the CA as entered into did not provide for grade separator (including service road at km 41.557) the cost of the grade separator and service roads (₹ 17.59 crore) was not excluded from the awarded TPC. This amounted to undue benefit to the concessionaire at the cost of road users. MoRTH in its reply (September 2014) accepted that the TPC was not reduced due to the proposal having already been moved for approval by the Planning Commission. The approval of TPC by the Planning Commission is a time consuming process and in case NHAI had sent a revised TPC proposal to the Planning Commission, the whole bidding schedule would have been seriously delayed, resulting in cost overrun. Further in the Feasibility Study assignment consultants are required to determine only the tentative project cost which may vary by 10 *per cent*. The effect of deletion of grade separator was within 5 to 6 *per cent* of the forecasted TPC, due to this change in TPC the revision was not needed.

MoRTH has accepted that the cost of the grade separator was not reduced from the TPC. However, as far as the issue of revision of cost being less than 10 *per cent* is concerned, the reply of the Management is not tenable since policy quoted was formulated for projects where the TPC is reduced as a result of restructuring. This case does not qualify as one of restructuring.

#### 4.1.2.6 Hazipur-Muzaffarpur

The road stretch was approved by CCEA (March 2005) under NHDP Phase III. NHAI invited (June 2005) bids under BOT mode for 4-laning of 60 km stretch of Hazipur-Muzaffarpur section of NH 19 and NH 77. No bids were received in spite of several extensions. As response on toll based BOT bid for the project under consideration was 'nil', NHAI submitted a note for adopting annuity based BOT model for approval by CCEA who approved (January 2008) the proposal for 4-laning on BOT (Annuity) at a TPC of ₹ 671.70 crore. MoRTH accordingly, informed (February 2008) the NHAI that bids for project under consideration may be called on BOT (Annuity) basis. It was also clarified that response to BOT (Annuity) bid would be considered adequate, even if one valid bid was received.

Despite receiving two bids for the project, the Evaluation Committee recommended for re-bid (May 2009). The second bidding (June 2009) also saw the same two parties participating. The Evaluation Committee again recommended cancellation/rebid (18 June 2009) on the ground that semi annual annuity payment demanded by the L-1 bidder of ₹ 94.60 crore (which was higher by ₹ 25.80 crore as compared to the annuity estimated by NHAI) gave an equity internal rate of return of 28.38 *per cent* which was much higher than the prevailing market range of 15-18 *per cent*. NHAI approved (October 2009) award of the work to the L-1 bidder M/s Gammon Infrastructure Projects Ltd. and letter of Award was issued (November 2009) at a semi annual annuity of ₹ 94.60 crore with a concession period of 15 years.

Thus, awarding the project without resorting to fresh RFQ restricted the competition as well as possibility of receiving more competitive bid. Further, NHAI awarded the project to the L-1 bidder by overlooking the recommendations of the Evaluation Committee, which resulted in extra cost to NHAI, amounting to ₹ 645 crore<sup>7</sup> (NPV: ₹ 395.50 crore) over the 15 year period. Project length of 50 km out of 63 km had been completed so far (September 2013).

MoRTH in its reply (September 2014) stated that all the nine interested and qualified applicants were permitted in RFP stage for expediting the implementation of the project with full competition. The project was awarded on competitive basis.

The reply of the Ministry is not acceptable since no fresh RFQ was invited even after the enhancement of estimated TPC. Therefore, the process was not competitive.

#### 4.1.2.7 Surat–Hazira

The project for 4/6 laning of Surat –Hazira port section of NH-6 was approved in February 2009 by CCEA at a TPC of ₹ 1509 crore. While clearing the project (November 2008), PPPAC noted that as 6-laning of the project was not immediately required, the project cost of ₹ 1509 crore should be rationalised suitably; and service lanes should be constructed only when the traffic level reaches 60000 PCU.

Audit noticed that though scope of the project was reduced to 4-lane, the total project cost was not reduced by NHAI commensurate with the revised scope and the project was awarded (February 2009) at the original TPC of ₹ 1509 crore to M/s Soma - Isolux Surat-Hazira Tollway Private Ltd. The VGF component allowed to the concessionaire was ₹ 556 crore despite financial consultant having stated that the project would be viable without any VGF.

On an agenda item for 71<sup>st</sup> meeting circulated to Board Members of NHAI for approval of award of the work, one of the Members observed that as against the expectation projected by the consultant that the project was viable without grant at 8 *per cent* revenue sharing with 15 *per cent* equity IRR, the lowest bid sought a grant of ₹ 556 crore. In response to the above observation, the Board was apprised that 4- laning project had a new alignment for about 47 km between Bardoli - Ichchapore along with the existing state highways leaving the existing NH-6 leading to Surat City. Thus, this highway would be a competing road with a possibility of diversion of traffic. It was further stated that this

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<sup>7</sup> (a) Semi annual annuities for which annuity amount is to be paid =15 years concession period minus 2.5 years' construction period=12.5 years, equivalent to 25 semi annual annuities.

(b) Difference in semi annual annuity amount demanded by M/s Gammon Infrastructure Projects Ltd. and that estimated by NHAI = ₹94.60 crore minus ₹68.80 crore = ₹25.80 crore.

(c) Extra cost to NHAI=(a) X (b)= 25 semi annual annuities X ₹25.80 crore= ₹ 645 crore.



aspect had not been considered in the initial financial analysis carried out by the consultant which gave rise to the difference in actual VGF claim vis-à-vis the projection.

The clarification conceded that the new alignment was a later development and was not considered while fixing the TPC at ₹ 1509 crore. In fact NHAI, in contravention of the directions of PPPAC to rationalise the cost of the project by reducing its scope to 4-lane, decided (December 2008) to obtain approval for the project with bridge and other structures as 6-lane without reducing the cost. NHAI did not clarify the rationale behind taking up the project when alternate competing road existed.

MoRTH replied (September 2014) that the project was awarded to the L-1 bidder. Bids were quoted by the bidders taking into account various factors such as prevailing market conditions, possible alternative competitive routes for traffic diversion etc. Financial viability worked out by the consultant is no guarantee that the bidders shall quote exactly the same way. However, MoRTH has not provided replies to the issues raised by Audit in the para.

## 4.2 Capacity of the road / Design service volume

Manual of Specifications and Standards for 2/4- laning of National Highways through PPP (May 2010), prepared by Indian Road Congress (IRC) and published by the Planning Commission stipulates the following parameters for augmentation of facilities and up-gradation of a project highway:

### Capacity of 2-lane highway (as per Para 2.16 of the Manual)

Nature of Terrain	Capacity of road / Design service volume (in PCU per day)	
	Without paved shoulder	With minimum 1.5 m paved shoulder
Plain	15,000	18,000

### Capacity of 4-lane highway (as per Para 2.17 of the Manual)

Nature of Terrain	Capacity of road / Design Service volume (in PCU per day)	
	Level of Service 'B' (for 4 to 6 lane)	Level of Service 'C' (for 4 to 6 lane)
4-lane highway	40000	60000

Audit noticed that the above parameters for up-gradation of 2 to 4-laning and 4 to 6 -laning were not adhered to in the following cases:

#### 4.2.1 Premature approval for 4-laning projects

Table 7 has the details of projects approved for 4-laning on annuity basis, despite the fact that the minimum threshold limit of 18000 PCU per day for 4-laning was not expected to be achieved in the next five to 12 years from the date of award:

**TABLE 7- Premature approval for 4-laning projects on BOT (Annuity)**

Sl. No.	Project Name	Volume of traffic (in PCU per day)		Km	Date of approval by IMG	Year in which threshold capacity would be achieved for up-gradation to 4-lane #
		Tollable traffic	Total Traffic			
1	Nagpur-Betul	i) 6423 MP stretch ii) 16157 (Maharashtra stretch)	i) 8267 ii) 20388	176.30	December 2009	2024 (for 115Km in MP)  2017(for total stretch after clubbing).
2	Lucknow-Raibareilly	8869 and 7185	11485 & 8069	70.0	March 2011	2022

# Threshold capacity is calculated on total traffic as per DPR

The above Table does not include four other projects, which were not selected for Audit, namely, Bhopal- Bareilly, Bareilly-Rajmarg crossing, Rajmarg crossing-Jabalpur and Reengus-Sikar in which the threshold capacity for 4-laning was expected to be achieved after eight to 27 years.

##### 4.2.1.1 Nagpur-Betul

The annuity outgo to the concessionaire M/s. Oriental Nagpur Betul Highway Private Ltd. during concession period in Nagpur-Betul project worked out to ₹ 9596.40<sup>8</sup> crore (NPV: ₹ 5068.58 crore) payable in 16.5 years. NHAI replied (August 2013) that the project was initially conceived as 4-lane on BOT-Toll and accordingly RFQ was issued with due date on 08 January 2010. However, preliminary financial analysis by Financial Consultant indicated that to receive an equity IRR of 15 *per cent* for a concession period of 30 years, the VGF required would be 45 *per cent* of the TPC. As the indicated VGF was more than the permissible VGF norms of maximum of 40 *per cent*, the competent authority decided (December 2009) to shift the mode of delivery to BOT (Annuity).

<sup>8</sup> Semi annuity ₹ 290.80 crore X 33 installments = ₹ 9596.40 crore

The reply was not borne out by facts as initially the project was conceived as 2-lane with paved shoulder and two separate stretches (i) Betul to Maharashtra-MP border and (ii) Maharashtra-MP border to Nagpur were included in the list of 42 stretches approved by CCI in July 2008. Feasibility studies were also conducted separately, but subsequently, the two projects were clubbed together, reasons for which were not available on record. It may be seen from the Table above that the stretch from Betul to Maharashtra-MP border would achieve the design service volume for up-gradation to 4-lane in the year 2024.

MoRTH admitted in its reply (September 2014) that the one stretch of the project was prematurely upgraded.

#### 4.2.1.2 Lucknow-Raibareilly

The annuity outgo to the concessionaire M/s. Essel Lucknow Raibareilly Toll Roads Private Ltd. in Lucknow- Raibareilly project worked out to ₹ 1461.60 crore<sup>9</sup> (NPV: ₹ 830.09 crore) payable in 14.5 years. In the Exit Conference held on 22 July 2014, as well as in its reply, MoRTH stated (September 2014) that the average total traffic on the project highway in 2010 was about 13677 PCU per day. Threshold capacity for 4-laning (15000 PCU) was met in the project start year 2012.

The reply is not supported by the fact that the average total traffic in 2010 on this stretch as submitted by MoRTH to IMG (March 2011) was only 9777 PCU per day. Copy of the traffic census of 13677 PCU was also not provided to Audit as directed by the Secretary, MoRTH during the Exit Conference. The fact remains that the project did not meet the specifications and standards as approved by the Planning Commission.

Unwarranted 4-laning of the two projects mentioned above and in para 4.2.1 would result in extra cost of construction ₹ 1724.10 crore<sup>10</sup> which was avoidable, apart from increased user fee to be paid by road users which was higher by 66.67 per cent for 4-lane as compared to 2-lane.

#### 4.2.2 Premature approval of 6-laning projects

Table 8 has details of projects that were approved for 6-lane on BOT (Toll) basis, despite the fact that the minimum threshold limit of 60000 PCU per day for 6-laning was not expected to be achieved in the next 10 to 25 years:

<sup>9</sup> Amount of Semi annuity ₹50.40 crore X 29 installments = ₹ 1461.60 crore

<sup>10</sup> Total km for Nagpur-Betul (176.30 km) and Lucknow-Raibareilly (70 km) = 246.30 km  
246.30 km X ₹7 crore / km (₹9.5 crore for 4 laning minus ₹2.5 crore for 2 laning) = ₹1724.10 crore

TABLE 8- Premature approval of 6-laning projects

Sl. no.	Project	Successful Bidder/concessionaire	Average volume of total traffic (year)	Km	Approval of CCEA/CCI	Year of achieving Threshold capacity for 6-lane #	Status of Levy of toll by the concessionaire
1	Varanasi-Aurangabad	M/s. SOMA ISOLUX	18407 (2010)	192.400	January 2009	2034	Started since September 2011
2	Kishangarh-Ahmedabad /	M/s GMR Infrastructure Ltd	35245 (2011)	555.500	September 2011	2022	Not started till August 2013
3	Aurangabad-Barwa Adda	M/s kmC	22000 (2012)*	218.75	March 2012	2024 <sup>11</sup>	Not started till March 2013

\* As per Planning Commission

# Threshold capacity is calculated on total traffic as per DPR

#### 4.2.2.1 Varanasi-Aurangabad

The average actual PCU for the above stretch was only 18407 in February 2010. Considering traffic growth at an average five *per cent* each year, the project would reach its carrying capacity of 60000 PCU and be eligible for upgradation only in 2034, i.e., 25 years after the date of approval. Thus the project was approved for 6-lane prematurely. Awarding the work of 6-laning prematurely would result in extra burden of ₹565 crore by way of VGF on NHAI as well as forgoing of toll revenue by GoI for 24 years (2011-34).

MoRTH in its reply accepted (September 2014) that the 6-laning of sections of Golden Quadrilateral (GQ) including Varanasi-Aurangabad was taken up as per the approval of GoI wherein it was decided to 6-lane the entire GQ network of 5700 km. The figure 18407 PCU in February 2010 was not total traffic but tollable traffic as per average at two toll plazas. The total traffic was generally 15 to 20 *per cent* more than the tollable traffic. Further, in case of delayed implementation the cost of construction would have gone up and overall project viability would have decreased. MoRTH, further replied that there was no extra burden of ₹ 565 crore on account of VGF and forgoing of toll revenue as no major maintenance was carried out by NHAI except for routine maintenance.

<sup>11</sup> The threshold capacity for up-gradation in 6-lane will be achieved in 2032-33 if traffic growth is considered at an average five per cent each year. However, in PPPAC meeting, Director, DEA suggested that on the basis of traffic growth the threshold capacity for 6-lane would be achieved in 2024. Therefore, the conservative estimate has been adopted.

MoRTH reply (September 2014) needs to be viewed against the fact that the PPPAC had been consistently adopting minimum threshold limit of 60000 PCU for 6-laning projects. Para no 2.17 and 2.18 of Manual of Specifications and Standards for 4-laning projects issued by the Planning Commission in May 2010 clearly provided for design capacity at which the project for 6-laning could be conceived. Further, even after increasing the traffic by 15 to 20 *per cent* as suggested in MoRTH reply, the design capacity of 60000 PCU for 6-lanes in Varanasi-Aurangabad was expected to be reached only during 2016 to 2018. Contention of MoRTH that in case of delayed implementation the cost of construction would have gone up and overall project viability would have decreased is not acceptable since the road had been widened from 2 to 4 lane only in 2004 and therefore there was no immediate need for upgradation to 6 lane and as such MoRTH contention regarding no extra burden of ₹ 565 crore is not based on the facts. Therefore, taking up the stretch prematurely was not justified. Moreover, expenditure incurred on road side amenities for 4 laning viz. utility shifting, truck lay-byes, pedestrian facilities, plantation, drainage, aprons, pitching relocation of crash barriers, lighting, sign boards etc. would also become infructuous.

#### 4.2.2.2 Kishangarh-Udaipur-Ahmedabad:

Initially two separate sections (i) Kishangarh to Udaipur (315 km.) (ii) Udaipur to Ahmedabad (242.51 km) were approved by CCEA in January 2009 and January 2010 at a TPC of ₹ 3384 crore and ₹ 1750 crore, respectively. Subsequently, in January 2011, when the RFP had already been issued to qualified bidders for Kishangarh-Udaipur section and the RFQ bids were under evaluation for Udaipur-Ahmedabad section, NHAI moved a proposal to MoRTH recommending that the project be taken up as one Mega project to attract international bidders. Average total traffic at this point was 35245 PCU (as per traffic data for the year 2011). After taking into account average five *per cent* traffic growth each year, the project would reach its carrying capacity of 60000 PCU and be eligible for up-gradation in 2022, i.e., 11 years after the date of approval. Thus, the decision to upgrade the project for 6 lane was premature and in contravention to the provisions of Manual of Specifications and Standards referred above.

MoRTH stated (September 2014) that this was also a part of GQ and 60,000 PCU per day capacity denoted the design capacity of 4-lane highway with level of service 'C' i.e. after this traffic level, 4-lane road would be as good as choked and it had to be necessarily upgraded to 6-lane, which did not mean that up-gradation of 6-lane should start only after the road was completely choked. Even otherwise, Cabinet laid down the norms of 25,000 PCU for up-gradation of individual stretches for 6-lane under NHDP Phase V. Accordingly, the stretch of Kishangarh-Udaipur-Ahmedabad was selected for 6-laning.

The reply needs to be viewed in the light of the fact that PPPAC had been consistently adopting minimum threshold limit of 60000 PCU for 6-laning projects. Further, Para no 2.17 and 2.18 of Manual of Specifications and Standards for 4-laning projects issued by the Planning Commission in May 2010 clearly provided for design capacity at which the

project for 6-laning could be conceived. The project had been widened from 2 to 4-lane only in 2008. Therefore, taking up the Kishangarh-Udaipur stretch 10 to 12 years before it was required, was not justified. Moreover, part of the expenditure incurred on road side amenities for 4-laning viz. utility shifting, truck lay-bys, pedestrian facilities, plantation, drainage, aprons, pitching, relocation of crash barriers, lighting, sign boards etc. would also become infructuous.

#### 4.2.2.3 Aurangabad-Barwa Adda

The project was approved for 6-laning by PPPAC in March 2012 with a TPC of ₹ 2340 crore with maximum VGF of ₹ 234 crore (10 per cent of TPC). As traffic projections for this project were considered at around 26000 PCU only, it did not justify 6-laning till 2024 which was also contrary to the provisions of Manual of Specifications and Standards. Also, the road had been widened from 2 to 4-lane in 2010 under the World Bank funded Grand Trunk Improvement Project. Thus, the project was envisaged and approved for 6-lane at a very early stage. Full potential of investment in 6-laning would thus be realised only from 2024 onwards. Apart from this, part of the expenditure incurred on road side amenities created in 2010 during widening of road stretch from 2 to 4-lane viz. utility shifting, truck lay-bys, pedestrian facilities, plantation, drainage, aprons, pitching, relocation of crash barriers, lighting, sign boards etc. would also become infructuous. MoRTH accepted (September 2014) that a decision was taken to upgrade the Aurangabad-Barwa Adda section of NH-2 into a 6 lane as it was the part of GQ stretches. The stretch was not developed on the basis of volume of traffic.

### 4.3 Determination of concession period

As per the procedure defined in the Model concession agreement (MCA), the carrying capacity of the respective highway at the end of the proposed concession period would be the guiding principle for determining project-specific concession period and the year in which the design capacity would be reached would be the last year of concession. Accordingly, the total traffic on the stretch of highway is to be considered for determining the design capacity / concession period. Further, as per the directions of the Planning Commission the concession period was to be restricted to the period when the traffic reached the maximum design capacity. Audit noticed inconsistencies in adopting total traffic / carrying capacity for determining the concession period resulting in NHAI fixing higher concession periods, which would result in unwarranted burden on road users by way of toll for the extended period.

#### 4.3.1 Concession period determined by considering tollable traffic

NHAI considered only tollable traffic instead of total assessed volume of traffic (i.e carrying capacity of the road) in the cases given in Table 9 below. This resulted in fixing of longer concession period which put an extra burden on road users. During these



extended concession periods, the concessionaires would collect toll at least to the tune of ₹ 28095.54 crore<sup>12</sup> (NPV: ₹ 3233.71 crore), while the roads would become congested for the toll paying users. MoRTH accepted in its reply (September 2014) as well as during the Exit Conference, the audit observation regarding incorrect adoption of tollable traffic instead of total traffic for determination of concession period. It was stated by the MoRTH that instruction in this regard have been reiterated by way of a circular.

**TABLE 9: Extra burden on road users due to longer concession period**

Successful Bidder/ concessionaire	Name of project	Concession period in years based on		Excess concession period (in years)	Extra burden on road users (₹ in crore)	Remarks
		Total Traffic	Tollable Traffic			
M/s IRB Jaipur Deoli Tollway Pvt. Ltd.	Jaipur Tonk Deoli	23	25	2	2061.39	Toll value of the last two years of the concession period as per financial consultant
M/s L&T BPP Tollway Pvt. Ltd.	Beawar Pali Pindwara	21	23	2	2142.97	The concession period on the basis of assessed total average traffic was initially worked out at 21 years by NHAI
Varanasi Aurangabad Tollway Pvt. Ltd.	Varanasi Aurangabad	15/23	30	7	11547.75	Concession period was 15 years as per DPR and 23 years as per feasibility report.
M/s PS Toll Road Pvt. Ltd	Pune-Satara	20	24	4	3421.08	₹3421.08 crore is the revenue projected during the 21st year to 24th year by the financial consultant at the time of financial evaluation of the project
M/s DA Toll Road Pvt. Ltd	Delhi-Agra	22	26	4	752.80	Basis of fixing concession period at 26 years by NHAI is not available. Considering 42830 PCU (as per the appraisal note submitted by NHAI to PPPAC) as base traffic in the year 2008, with five <i>per cent</i> growth the project would reach its carrying capacity of 120000 PCU in 2030 i.e. in 22 years. Considering toll revenue of at least ₹188.20 crore per year from 23 <sup>rd</sup> year to 26 <sup>th</sup> year, the total extra burden on road users would be ₹752.80 crore. (Feasibility consultant projected toll revenue for 22 <sup>nd</sup> year at ₹188.2 crore)

<sup>12</sup> Projected toll revenues calculated by financial consultants in financial analysis.

Successful Bidder/ concessionaire	Name of project	Concession period in years based on		Excess concession period (in years)	Extra burden on road users (₹ in crore)	Remarks
		Total Traffic	Tollable Traffic			
M/s.Kiratpur Ner Chowk Expressway Ltd.	Kiratpur-Ner chowk	24	28	4	4631.46	NHAI projected total traffic of 10106 PCU in the base year 2010 in the note submitted to PPPAC. However, with the given total traffic as increased by 5 per cent growth per year, the design capacity would be achieved in 2034, i.e. in 24 years. The extra burden from 25 <sup>th</sup> year to 28 <sup>th</sup> year is based on the toll projections by the financial consultant.
Himalayan Expressways Ltd.	Zhirakpur-Parwanoo	14	20	6	501.00	As the total traffic was 32000 PCU for the base year 2006 and with 5 per cent growth per year, the same would be reached in 14 years. The extra burden is worked out on the toll projections by the financial consultant.
Sambalpur Baragarh Expressway Pvt. Ltd.	Sambalpur-Baragarh	27	30	4	1641.01	Considering five per cent growth annually the design service volume of 60000 PCU would be reached in 27 years. However NHAI allows concession period of 30 years in the concession agreement by taking into consideration, tollable traffic instead of average total traffic
<b>Total</b>					<b>₹28095.54</b> (NPV: ₹ 3233.71)	

In the case of Beawar-Pali-Pindwara and Jaipur-Tonk-Deoli roads, NHAI replied (August 2013) that it was more prudent to consider the tollable traffic derived from the PCU definition as the base for fixation of concession period. In case of Varanasi-Aurangabad, NHAI stated that to limit the VGF within the prescribed limit of 20 per cent, the concession period was fixed as 30 years. NHAI further added that at the time of bid, the concession period is fixed at an assumed traffic growth of five per cent and a provision was made under clause 29.1 of the CA whereby the actual traffic on a target date would be compared with target traffic and the concession period would be reduced/increased accordingly based on the provisions of CA.

The reply ignores the fact that MCA clearly provided that the concession period was to be worked out based on the volume of traffic including tollable as well as non/tollable traffic. Thus, the total volume of traffic, which was the carrying capacity of a road, should have been taken into account for working out the concession period. As regards applicability of clause 29.1 of the CA, in case of increase/decrease in the assessed volume of traffic after the road project was awarded, it had no bearing on the concession period fixed initially. It is also irrelevant as the Audit observation relates to adoption of incorrect traffic volume *ab initio*. NHAI decision to consider the lower value of assessed traffic was also not correct as it would lead to congestion on the project road at toll locations when the traffic volume reached the design (carrying) capacity of the road.

While agreeing to the audit observation, in the 'Exit Conference' held on 22 July 2014, MoRTH / NHAI stated that the instructions in this regard had been reiterated by way of a circular.

#### 4.3.2 Inconsistency in considering traffic volume

Audit noticed lack of consistency while considering traffic volume for determining the concession period in the following instances:

**4.3.2.1** The project for 4 laning of Indore-Gujarat-MP border stretch of NH- 59 was approved by CCI in December 2009 at a TPC of ₹ 1175 crore. The project was awarded in the same month to M/s. IVRCL Indore Gujarat Tollways Ltd with concession period of 25 years. The concession period was fixed by considering the highest assessed traffic at one out of five locations projected by the feasibility consultant instead of considering average total traffic. In three other cases namely Agra-Aligarh, Raibareilly-Allahabad and Kishangarh-Ahmedabad projects, which were test checked in Audit, it was noticed that average total traffic was considered for determining the design capacity/ concession period of the projects.

**4.3.2.2** As per the Manual for Specification & Standards 4-laning should be taken up when the carrying capacity reached 18000 PCU. Four projects i.e. Raibareilly to Allahabad, Aligarh to Kanpur, Agra to Aligarh and Kanpur to Kabrai were approved for 2-laning with paved shoulder though the carrying capacity was expected to reach 18000 PCU in only a few years of award, i.e. between 2013 to 2017. Thus in these projects, the roads would be congested within a few years necessitating 4-laning. In the process, part of the cost of utility shifting, signages, paved shoulder etc would become infructuous. Further, as the carrying capacity of Raibareilly to Allahabad stretch was considered at 25000 PCU, the concession period should have been fixed at 13 years. Instead, the project was awarded to M/s. Raibareilly Allahabad Highway Pvt. Ltd., with concession period of 16 years. The excess concession period of three years would result in road users paying ₹ 249.50 crore (NPV: ₹ 79.25 crore) for use of a congested road.

Thus, there was no consistency in working out the concession period and different criteria were adopted for different projects. NHAI has not furnished any comments/clarifications with regard to the lack of consistency in adopting total/tollable traffic for working out the concession period.

**Recommendation 4:** *While restructuring projects, technical and financial feasibility may be strictly adhered to and cost of the project should be revised with due diligence. Concession period after restructuring should also be determined as per revised projections of the traffic. Restructured projects should go through fresh bidding process to ensure competitiveness and transparency.*

**Recommendation 5:** *At the time of up-gradation of the projects from 2-lane to 4-lane and from 4-lane to 6-lane, the Manual for Specification and Standards may be followed consistently.*

**Recommendation 6:** *At the time of determining the concession period, NHAI may ensure consistency in adoption of the norms for traffic i.e. total traffic or tollable traffic.*