

CHAPTER-III

COMPLIANCE AUDIT

PUBLIC WORKS DEPARTMENT

3.1 Contract Management in Public Works Department

3.1.1 Introduction

The Roads & Bridges (R&B) and National Highways (NH) wings of Kerala Public Works Department (Department) are responsible for the design,¹ construction and maintenance of all roads and bridges coming under the jurisdiction of the Department, except those coming under Kerala State Transport Project², irrespective of the source of fund. The Principal Secretary to Government heads the Department at the Government level. He is assisted by Chief Engineers (CE) with charge over separate wings for programme delivery. The Department has control over 33,593 km of roads (including bridges) consisting of 442 km of National Highways³, 4,342 km of State Highways and 27,470 km of Major District Roads.

Expenditure on road works incurred during the last three years is shown in **Table 3.1.1**.

Table 3.1.1: Expenditure on road works

(₹in crore)

Year	Revenue expenditure		Capital expenditure	
	Budget provision	Actual expenditure	Budget provision	Actual expenditure
2014-15	2,191.07	1,760.61	1,759.35	1,477.26
2015-16	3,018.03	2,010.30	2,773.15	2,675.24
2016-17	2,234.94	1,182.63	2,216.37	2,815.79

Source: Finance Accounts and figures of Accountant General (A&E)

3.1.2 Audit objectives and scope

The compliance audit covered the works awarded by the R&B and NH wings of the Department during the period 2014-15 to 2016-17, and sought to examine whether:

¹Design of roads and minor bridges only. Major design of bridges are done by Design, Research, Investigation and Quality Control Board headed by a Chief Engineer.

²Kerala State Road Transport project is a World Bank aided project under which certain State highways were upgraded or improved through separate wing under Public Works Department.

³Total length of National Highways(NH) 1,781 km less length of NH (1,339 km) under the jurisdiction of National Highways Authority of India.

- (a) the planning and estimation of the works were comprehensive and proper;
- (b) there was transparency in tendering/awarding of the works and that the canons of financial propriety were adhered to; and
- (c) the works were executed without time and cost overrun and their quality was ensured.

Audit scrutinised the records of the Department at the Government Secretariat, offices of the CEs of R&B and NH wings, Circle offices⁴ and 10 divisional offices⁵ and conducted joint physical verification of sites along with the Departmental officials at selected work sites/cases. The work files were selected adopting Stratified random sampling method. Entry and exit meetings were held with Government in June 2017 and February 2018 respectively. In the exit meeting, it was requested to furnish Government replies, which are still awaited. However, views of the Government as held in the exit meeting are incorporated in this Report.

3.1.3 Audit findings

Planning including estimation

3.1.3.1 Arranging of works without ensuring availability of land/proper investigation

In terms of Section 1402 of the Kerala Public Works Department Manual, Revised Edition, 2012, (Manual) and stipulations in Administrative Sanctions, bidding of works shall be resorted to only after getting possession of the required land free of hindrances. Further, every work shall be properly investigated and all relevant data collected and correlated before finalising the design and estimate for the work.

Audit observed that

- In the selected R&B circles (North, Central and South), eight works valuing ₹59.98 crore awarded to contractors could not be completed due to faulty design and land disputes/delay in acquisition of land despite spending ₹33.34 crore on the works (**Appendix 3.1.1**). This included ₹2.85 crore on a bridge across Thodupuzha river in Idukki, which remained unused due to lack of approach road, thus, rendering the entire amount unfruitful.

CE, R&B attributed the reasons for non-completion of the projects to change in survey numbers of land proposed for acquisition, issues related to conversion of wetland, protest of public/land owners etc. The reply is

⁴Circle offices are headed by Superintending Engineers (SEs) who report directly to the CEs concerned. The R&B and NH wings have three circle offices each.

⁵The Executive Engineers are in charge of Division offices, which come under SEs. The divisions inspected were Roads Divisions Alappuzha, Ernakulam, Muvattupuzha, Palakkad, Thrissur and Thiruvananthapuram and NH Divisions at Alappuzha, Kodungallur, Muvattupuzha and Thiruvananthapuram.

not acceptable as the Department should have ensured encumbrance-free land/proper design before awarding the work.

- In the selected circles, there were two more works⁶ valuing ₹3.61 crore, where the works awarded were not taken-up for want of encumbrance-free land and mandatory clearances from the Forest Department/Railways. In the exit meeting, the Department stated that the road work was awarded assuming that the land belonged to the Department, and in respect of the retaining wall, the work was awarded in anticipation of getting clearance from Railways. The reply is not acceptable as the Department failed to ensure the availability of land, which was a pre-requisite for awarding a work.

3.1.3.2 Arrangement of works without ensuring fund

In terms of Section 2003 of the Manual, works arranged should have budget provision. The Government accorded (October 2014) Administrative sanction (AS) for the work “Junction improvement and providing 1.5 metre (m) paved shoulder from Kazhakkottam to Eanchackkal” for rupees four crore without mentioning the source of fund (Head of account). But the CE, NH issued (9 December 2014) Technical Sanction (TS) inserting a head of account. Superintending Engineer (SE), NH, South Circle (SC) tendered the work (3 December 2014) and handed over the site (16 January 2015) to the contractor who completed (February 2015) the work. Department could not pay ₹3.93 crore to the contractor for want of allocation; but it was later released based on a Court order. Audit observed that insertion of a head of account by the CE without ensuring actual availability of fund led to the litigation, which was avoidable.

3.1.3.3 Arrangement of work during Defect Liability Period

The Government ordered (August 2013) that the Defect Liability Period (DLP) of roads renewed with Bituminous Macadam (BM) and Bituminous Concrete (BC) would be for 24 months and 12 months for 20 millimetre (mm) Chipping Carpet (CC). As per section 2602.4.2 of the Manual, a road once renewed with CC is to be taken up for renewal only after three years.

Audit observed that a renewal work at a cost of ₹1.84 crore was taken up during DLP (**Appendix 3.1.2**), which tantamount to extending of unintended benefit to the contractor by allowing him to escape from the liability of maintaining the road during the DLP.

CE, R&B accepted the audit observation and in the exit meeting, CE, NH reiterated that arrangement of work during DLP was irregular. However, further action on the same was not intimated to Audit till date (March 2018).

⁶Annual Plan 2014-15: Improvements to Cheppukulam -Moolekkadu road km 0/500 to 3/500. Road Safety NH 744 - construction of gabion wall with necessary road safety measures from km. 45/700 to km. 46/100.

3.1.3.4 Estimates inflated due to defective calculation of unit rates for items of work

According to Section 1601.1.2 of the Manual, proper care shall be bestowed on preparation of detailed estimate so that it reflects as faithfully as possible the cost of work as can be foreseen at that time.

Audit observed the following defects in the preparation of estimates due to errors in calculation of approved unit rates:

➤ **Exhibition of higher rate in the tender than the actual rate calculated**

Audit noticed that in one work⁷, the unit rate of an item included in the tender was higher than the rate calculated in the Rate Analysis, which enhanced the cost by ₹23.90 lakh. In the exit meeting, the SE, R&B South Circle accepted the audit observation and stated that with the introduction of PRICE software, the defects were rectified to a certain extent. The reply is not acceptable as such checks are required to be exercised meticulously in order to safeguard financial transparency, failing which, the government exchequer gets unreasonably affected and the contractor in turn gets unduly benefitted.

➤ **Arithmetical error in calculating unit rates**

Arithmetical errors in the calculation of unit rate of items in two works⁸ inflated the cost by ₹16.72 lakh. Audit noticed that CE, R&B incorrectly applied cost index in the rate analysis in one work and in the second work CE, NH reckoned provision of pontoon⁹ for construction of superstructure of bridge twice in the rate analysis. CE, R&B replied (September 2017) that arithmetical error amounting to ₹11.27 lakh was corrected based on Audit findings. However, Audit noticed that supplemental agreement (reducing the rate) was still not executed. In respect of the other case, CE, NH did not furnish any reply.

➤ **Excess provision of cement concrete in rate analysis**

According to the Standard Data Book (SDB) of Ministry of Road Transport and Highways (MoRTH), the rate for executing unit length of cement concrete pile¹⁰ for foundation is calculated by considering, among other things, the quantity of concrete required for executing one metre length of pile, hire charges of machinery, labour and materials for boring.

Audit observed the following errors in calculation of the cement concrete component for piles:

⁷Construction of Anjilimoottilkadavu Bridge at Kozhipalam across Pampa river in Pathanamthitta district.

⁸₹11.27 lakh in respect of construction of Valiyazheekal bridge across Kayamkulam lake connecting Kollam and Alappuzha district and ₹5.45 lakh in respect of construction of Calicut Bypass Phase II-reach II- from ch 0/000 to 5/000 of NH 17(New NH 66) in the state of Kerala.

⁹ A flat-bottomed boat, which aids construction in water.

¹⁰Pile is a type of foundation to transfer loads from a structure to a strong sub surface strata. It is generally cylindrical in shape.

- As per MoRTH SDB unit rate of 1.2 m diameter bored cast in-situ pile is calculated initially for nine meter and one meter diameter pile is calculated for 10 m, which are converted to one meter thereafter. As per the SDB, requirement of cement concrete for 1.2 m diameter pile (for nine meter) was 10.170 cubic meter (cum), but the Department adopted 11.869 cum and in respect of one meter diameter pile (for 10 meter) Department adopted 8.243 cum instead of 7.85 cum in MoRTH SDB. The unit rate of pile foundation for three bridge works¹¹ was calculated deviating from the SDB of MoRTH, consequent upon which, excess quantity of cement concrete for providing bored cast in-situ pile was considered in the rate analysis, resulting in enhancement of the estimate cost by ₹91.30 lakh. CE, NH replied that the rate would be reduced.
- In the same three bridge works, the unit rate for bored cast in-situ pile foundation in rock was calculated as 2.5 times the rate of executing the same item in soil. This increase was due to additional time required for boring through hard rock. Audit observed that the multiplication factor of 2.5 was applied not only on boring but also on the cost of cement concrete, the quantity of which was the same for both hard rock and soil. Consequently, the estimate was overstated by ₹33.20 lakh. CE, NH replied that they adopted the procedure adopted by CE, R&B. The reply is not acceptable as the CE, R&B calculated the rate for boring in rock considering the actual volume of cement concrete in rock portion without reckoning 2.5 times the cost of boring in soil as stated by CE, NH.

➤ **Excess labour resulted in inflated rates**

Sl. No. 58 of the SDB of the Department provides for extra labour @ 0.40 woman for each additional lift of 1.5m involved, per 10 cum of construction material conveyed.

Audit observed that in three works¹², the unit reckoned for extra labour was one cum, instead of 10 cum, resulting in cost escalation by ₹39.94 lakh. CE, R&B stated that Sl No.58 was meant for working with earth. Further the rate was provided considering actual site conditions and practical difficulties.

The reply is not acceptable as Sl No. 58 is applicable to all items including rubble. Further, the Department already included extra labour in the unit rate considering difficult areas. Hence, unit reckoned for extra labour violating SDB of the Department was irregular.

¹¹ ₹40.65 lakh in respect of construction of Calicut Bypass Phase II-reach II- from ch 0/000 to 5/000 of NH 17(New NH 66); ₹45.01 lakh in respect of DFIP-construction of flyover at Ramanattukara junction in NH 66 (old NH 17) – Calicut Bypass in the state of Kerala and ₹5.64 lakh in respect of DFIP-construction of flyover at Thodayad junction in Calicut by pass NH 66 (old NH 17).

¹² ₹8.11 lakh in respect of NABARD RIDF XX construction of Keezhmurikadavu bridge across Muvattupuzha River, ₹16.63 lakh in respect of construction of Murikallu bridge across Muvattupuzha River and ₹15.20 lakh in respect of Budget work 2015-16 construction of Parappuram Vallamkadavu bridge across Periyar River (all in Ernakulam District).

3.1.3.5 Violation of specifications/data of MoRTH

➤ Irregular inclusion of provision for cutting pile heads and conducting routine and initial pile load tests

In terms of Section 1119 of MoRTH specification, the contract unit rate for providing cast in-situ bored piles includes the cost of labour, materials, hire charges of equipments and all other incidentals involved in conducting routine and initial pile load tests. As such, the contract unit rate of piles is inclusive of full compensation for furnishing all labour, material, tools and equipments, and incidentals for cutting off of pile heads.

It was observed that in nine works, items such as pile load tests and cutting of concrete pile heads costing ₹2.59 crore (**Appendix 3.1.3**) were included as separate items in the Contract. CE, NH replied that as there was no separate provision for pile load test and chipping off of pile top in the rate analysis, the items were separately provided. CE, R&B replied that in one work the provision of pile load test was included accidentally. In other cases, the reasons were stated to be non-provision of conducting pile load test and chipping off of pile top in the rate analysis.

The reply is not acceptable as Section 1119 of MoRTH specification prohibits separate payment for pile load test and chipping off of pile top, which are treated as incidental items and are already included in the contract unit rates of piles. Thus, separate provision of pile load test and chipping off of pile top in addition to incidental charges in the rate analysis led to extending of undue benefit to the contractor.

➤ Calculation of unit rate of items of work deviating from MoRTH data

The Government ordered (April 2013) adoption of MoRTH specifications by all State Government Departments from 1 October 2013 onwards.

Audit noticed that the Department did not adopt the specifications for calculating unit rate of some items of work; instead it used its own method, which caused inflation in unit rates as discussed below:

- As per SDB of MoRTH, 1.04 labour is required for fixing 50 road studs. Contrary to the MoRTH stipulation, the Department provided four labour per 50 road studs resulting in excess cost of ₹8.74 lakh in eight works, which commenced on or after November 2014. Audit observed that out of this, one work was under NH wing, for which they were bound to adopt MoRTH SDB but instead adopted observed data¹³.

¹³Rate analysis prepared based on field observations for items of work, which are not available in SDB.

- As per SDB of MoRTH, certain percentage (maximum 55 *per cent*) of the cost of cement concrete, being the cost of staging¹⁴ and formwork¹⁵, is to be added to the cost of cement concrete, so as to arrive at the unit rate for providing the superstructure¹⁶ of a bridge. Audit noticed that in seven works (**Appendix 3.1.4**), the unit rate for providing superstructure of bridge also included the cost of additional staging and use of high-cost N Truss, instead of reckoning a certain percentage of the cost of cement concrete provided for the superstructure.

Audit observed that as per the Delhi Schedule of Rates (DSR), steel used in formwork can be reused 40 times, instead the unit rates were calculated by reckoning the re-usability of steel formwork as four to 18 times. Unit rates in these seven works ranged from ₹21,730 to ₹26,071/cum, whereas in bridge works conforming to SDB and DSR stipulations, the unit rate was less than ₹20,000/cum leading to a cost overrun of ₹10.66 crore. CE, NH and CE, R&B stated that a different method was adopted considering the actual requirement at site.

The replies are not acceptable as the rate analysis was available in MoRTH SDB for the same item of work. So the Department should have adopted the same irrespective of the site condition.

➤ **Inclusion of multiple/excess provisions for overhead charges in estimates**

In terms of the SDB of MoRTH, the unit rate of items also includes Overhead Charges (OH), which consist of provision for site accommodation, general site arrangement, mobilisation of resources, vehicle for supervision and an element of tax. In cases where MoRTH data are adopted, the OH applicable in road projects and bridges are as follows:

- the rate of OH applicable in road projects valued up to ₹50 crore is 10 *per cent* and for those above, it is eight *per cent*.
- the rate of OH admissible for bridges ranged between 20 *per cent* and 30 *per cent*.

The Government ordered (May 2010 and December 2010) that OH of five *per cent* would be applicable on estimates worked out on the basis of SDB of the Department to compensate the tax liability of the contractors.

Audit observed that additional provision for OH was provided in the work estimates of the following works even though OH at applicable rates was already included.

¹⁴The function of staging is to carry loads without appreciable deformation either before or during the placing of concrete.

¹⁵Formwork shall include all temporary or permanent forms required for forming the concrete of the shape, dimensions and surface finish, as directed, together with all props, staging, centering, scaffolding and temporary construction required for support. The concrete acquires exact shape of the mould in which it is placed.

¹⁶ Superstructure of bridges includes deck slab of bridges, girder, cross girder, etc.

- As per SDB of MoRTH, contractor's profit (CP) is included in the estimate. But while entrusting works to accredited agencies the estimate shall not include CP. In a work¹⁷, apart from the regular OH of 8 and 25 *per cent* (for both road and bridge works), additional provision of 10 *per cent* was included in the unit rates of items towards compensation for taxes payable by the contractor. As an element of such tax was part of OH, a separate provision for taxes amounting to ₹12.01 crore was irregular and not as per SDB of both MoRTH and the Department.

CE, NH replied that Local Self Government Department and other institutions were entrusting works directly to the conveners of beneficiary committees and similar agencies by providing for taxes and OH in the estimate without CP and the same procedure was followed in the instant work also. Reply is not acceptable as OH charges at applicable rates were already included in the rate analysis and hence, additional provision towards compensation for taxes and other OH charges is irregular. Further audit scrutiny in a Local Self Government Institution confirmed that they did not incorporate the dual application of OH charges as stated by CE, NH in his reply.

- It was also noticed that even though the items of work did not conform to the MoRTH specification, in 16 works¹⁸ OH at the rate of ten/twenty *per cent* was provided by R&B wing of the department instead of an eligible five *per cent*, which increased the cost by ₹6.52 lakh. CE, R&B replied that the PRICE software through which technical sanction was issued had no provision to alter the provision of 10 *per cent*. However, the Department did not take action to rectify the issue.
- Audit also observed that in two works¹⁹ OH of both five *per cent* prescribed by the Government, and 10 *per cent* prescribed by MoRTH were included in the unit rate of items of work. The dual application of OH increased the estimate cost of these works by ₹27.88 lakh. CE, R & B replied that both OH were allowed on MoRTH data citing the Government directions in May 2010 and December 2010. The reply is not acceptable as

¹⁷Construction of Calicut Bypass Phase II-reach II- from ch 0/000 to 5/000 of NH 17(New NH 66) in the state of Kerala.

¹⁸Agreement No.330/EE/2015-16 Dtd. 03/03/2016, No. 28/EE/2016-17 Dtd 17/06/2016, No. 29/EE/2016-17 Dtd 17/06/2016, No. 37/EE/2016-17 Dtd 17/06/2016, No. 40/EE/2016-17 Dtd 17/06/2016, No. 46/EE/2016-17 Dtd 17/06/2016, No. 48/EE/2016-17 Dtd 17/06/2016, No. 165/EE/2016-17 Dtd 24/03/2017 (8 Nos-Ernakulam Division), No. 67/EE/2016-17 Dtd 01/07/2016, No. 107/EE/2016-17 Dtd 02/12/2016, No. 147/EE/2016-17 Dtd 13/01/2017 (3 Nos-Thrissur Division), No. EE/PL/64/2016-17 Dtd 23/09/2016, No. EE/PL /66/2016-17 Dtd 30/09/2016, No. EE/PL/147/2016-17 Dtd 21/03/2016 and No. EE/PL/27/2016-17 Dtd 01/06/2016 (4 Nos-Palakkad Division), No.44/SECCA/2016-17 Dtd 17/05/2016 (Central Circle, Aluva).

¹⁹Improvements to Hill Highway from Koomanthodu to Aralam (22.80 km) II reach between km 64/620 to 71/690 (Vallithodu to Karikkottakkari) in Kannur district and Budget work 2011-12 – Improvements to MC road–Pathanapuram road–Sabarimala Bypass road (Mercy road–Chengamanadu road) ch 0/000 to 6/600 km.

the said Government directions allowed OH charge of five per cent on SDB of PWD only. Hence, dual application of OH had led to unintended benefit to the contractor.

- In a work²⁰ for providing deck slab of a bridge, apart from the 25 per cent OH already included in the unit rate, cost on sub-items for stay, food and vehicles were additionally added. Thus, inclusion of additional OH resulted in the boosting of cost by ₹16.50 lakh. CE, NH replied that special crew consisting of Engineers and technicians from United Kingdom would arrive for installation of stressing operation, the expenses of which, are to be met by the contractor. Hence the provisions of stay, food and vehicles were additionally added apart from 25 per cent OH. The reply is not acceptable as 25 per cent OH already provided would cover all such expenses, and hence, additional provision for such expenses in the rate analysis is irregular.

3.1.3.6 Method adopted for earthwork excavation led to undue benefit to contractors

According to the SDB of MoRTH, the unit rate for excavation of soil including rock is worked out adopting mainly three methods viz, manual excavation, excavation using dozer and excavation using hydraulic excavator.

Audit observed that unit rate for excavation using manual method was up to four times costlier than mechanical methods of excavation. As per MoRTH SDB, manual means of excavation are meant for areas inaccessible to machines and for small jobs.

Estimation using incorrect method of excavation could provide undue benefit to the contractor as observed in the following instances:

- In a work,²¹ the Department calculated the unit rate for excavation of soil using manual means. However, the specification of the item mentioned in the agreement was excavation using mechanical means. This gave an undue benefit of ₹88.61 lakh²² to the contractor as he executed the work by mechanical means whereas the rates were for manual method, which were much higher. CE, R&B, the technical sanction authority, replied that since the field engineers found the usage of manual means necessary, the technical sanction authority also considered it to be genuine. However, in the agreement schedule, the specification for earthwork indicated the use of mechanical means. Reply is not acceptable as the measurement book, work bills and work slip revealed that the work was executed using mechanical means, which resulted in avoidable extra cost.

²⁰Construction of Valiyazheekal bridge across Kayamkulam lake connecting Kollam and Alappuzha districts.

²¹Providing traffic safety measures between Km. 67/000 to 97/070 of CVG road.

²²Quantity of earth work excavation (60278.206 cum) multiplied by the difference in rate of excavation as per manual means and rate of excavation as per hydraulic means.

- Audit also observed that in respect of one work²³ where excavation of soil was to be executed by mechanical means, it was done manually, thereby inflating the cost by ₹71.60 lakh for a quantity of 78,680 cum. CE, R&B stated that based on the representation submitted to the PWD Minister, it was ordered that utmost care should be taken while using heavy machines as expensive houses with gardens were situated on either side on the entire road. Hence, the land owners agreed to give land free of cost, on the condition that only manual means are used for earth work excavation. To verify the facts, a Joint Physical Verification (JPV) was conducted with the departmental officials. It was observed that the road was widened by taking land from both sides. In most of the cases, there was no boundary wall or houses nearby and instances of excavation using mechanical means were clearly visible at many locations. Hence, the provision of manual means for entire length of road led to extra expenditure to government, which was avoidable.
- In one work,²⁴ the original provision for earthwork excavation was using hydraulic excavator. During excavation, hard rock was stated to have been detected, which was treated as an extra item, and therefore manual excavation was provided. This inflated the cost of work by ₹60.19 lakh. CE, R&B replied that it was not possible to dismantle the hard rock with hydraulic excavator and blasting was not possible as the area was highly populated and so manual chipping was adopted. A JPV conducted at the site to verify the facts revealed that the detected material was hard laterite, which was excavated using mechanical means only and not manual means. Hence, the reply of the CE was not justifiable.

Irregularities in tender process

3.1.4.1 Non-compliance to MoRTH guidelines on fixing of completion period

A bidder in a tender should have sufficient bid capacity. Period of completion of the work tendered, annual turnover and work in hand are the factors affecting bid capacity. As per timelines issued (August 2013) by MoRTH, the time prescribed for completing a work under ‘Improvement of Riding Quality Programme’ (IRQP) is six days per kilometre subject to a maximum of six months.

Audit observed that the SE, NH South Circle, Thiruvananthapuram, tendered three works²⁵ each with a minimum length of 20 km (approximately) with a total value of ₹57.99 crore. As against MoRTH specification of four months, the time

²³Improvements to Hill highway from Koomanthodu to Aaralam (22.80 km) 2nd reach between 64/620 to 71/690 (Vallithodu to Karikkottukari) in Kannur district.

²⁴Improvements including BM and BC to Neruvambram - Payyattuchal - Chemberi road km 0/000 to 7/850 km in Kannur district.

²⁵IRQP (Non plan) from ch.462/000 to 482/000 of NH 47 (New NH 66) in the State of Kerala; IRQP (Non plan) from ch 0/000 (Kollam high school junction) to 23/900 (Kadapuzha bridge) of NH 220 (New NH 183) in the state of Kerala and IRQP from ch.482/000 to 520/400 of NH 47 (New NH 66) in the State of Kerala.

of completion (ToC) fixed for each work was less than that prescribed by MoRTH. Scrutiny of the bids by MoRTH revealed that the reduction of ToC to three months provided insufficient time to contractors, which affected their bid capacity adversely. As such, re-tender of the works was ordered by MoRTH. Due to this, taking up of the works was delayed by three to five months and cost increased by ₹10.10 crore.

CE, NH replied that the SE, NH South Circle fixed the ToC as three months in order to ensure the completion of work before the forthcoming monsoon. Audit noticed that the action of the Department violating the MoRTH guidelines led to scrapping of the tender process, and in the process of retendering, one monsoon season elapsed, which caused further damage to the roads requiring extra work with more quantity of Bituminous Macadam, thus, resulting in cost escalation by ₹10.10 crore.

3.1.4.2 Waiving of tender calls in violation of delegated powers

In terms of Appendix 200B-2 of the Manual, the Executive Engineer (EE), SE and CE are empowered to waive tender calls of the value of up to ₹3 lakh, ₹10 lakh and ₹25 lakh respectively.

Audit observed that EE, Roads Division, Ernakulam, arranged six works, each valued at ₹25 lakh approximately, waiving tender calls, which were ratified by the SE, R&B Central Circle even though such waivers could be given only by the CE. It was further observed that all the works were awarded to a single contractor or to firms controlled by the contractor himself.

SE, R&B Central circle replied that the SE sanctioned the limited tender treating it as a normal tender. The reply is not acceptable as waiving of tender calls of works valuing ₹25 lakh was in violation of the delegated powers as per the extant manual provision.

3.1.4.3 Non-finalisation of tender within firm period

As per the Manual, the firm period of a tender is two months. Delay in finalisation of tenders before expiry of the firm period, at times, leads to backing out of the lowest bidder. Consequently, retendering or the second lowest bidder is considered.

Audit noticed that in eight instances, non-finalisation of tender process within the firm period led to arrangement of works through the second lowest bidder or retendering, which is at higher rates resulting in excess cost of ₹21.19 crore. **(Appendix 3.1.5)**

In the exit meeting, the departmental officials opined that these works required pre-qualification and two months period was insufficient for completing all the formalities. Audit observed that the firm period fixed in the pre revised manual was four months but when the period was reduced to two months, a system was not adopted to speed up the process. Further, there was undue delay in finalisation of tender and rearrangement, which led to the cost escalation.

3.1.4.4 Excess liability due to rejection of single bid at estimate rate

According to instructions issued (August 2012) by the Government, single bids at estimate rate or below could be accepted at the first instance. SE, R&B, Central Circle, Aluva tendered (February 2014) a work²⁶ against which a single tender at 9.20 *per cent* below estimate amount of ₹9.57 crore was received from M/s Kerala State Construction Corporation Limited (KSCC). The SE recommended (March 2014) the bid for Government approval. The Government returned (April 2014) the proposal directing retransmission after re-tender without citing any reason. On re-tender (July 2014), again a single tender was received which was from KSCC, but the rate quoted this time was 24.50 *per cent* above estimate. Government accepted the tender at 23.23 *per cent* above estimate and the SE awarded (March 2015) the work to KSCC. The Government decision to reject the initial single bid without recording any justification to do so and subsequently awarding the work to the same firm, that too at 23.23 *per cent* above the estimate rate resulted in an avoidable cost escalation by ₹2.04 crore.

Irregularities in the award /entrustment of works

3.1.5.1 Entrustment of five works valued at ₹809.93 crore to accredited agency violating Government guidelines

The Central Vigilance Commission (CVC) reiterates (July 2007) that tendering process or public auction is a basic requirement for the award of contract by any Government agency as any other method especially award of contract on nomination basis would amount to a breach of Article 14 of the Constitution of India. Further, as per the Kerala Financial Code while giving a work on contract the general principles governing invitation to tender are to be followed.

The Government (Finance) issued (July 2014, August 2015) guidelines²⁷ for selection of accredited agencies for execution of public works and enlisted M/s Uralungal Labour Contract Cooperative Society Limited (M/s ULCCS) as one of the accredited agencies.

Audit noticed that in violation of the CVC guidelines and the Government's Financial Code, the Department did not exercise due diligence in selection of the accredited agency through tendering and entrusted (20 February 2016) five works amounting to ₹809.93 crore to M/s ULCCS at estimate rate. Furthermore, as per the guidelines for selection of accredited agencies, the maximum value of a single work that could be entrusted to M/s ULCCS was ₹25 crore and the maximum quantity of work in hand at a time that could be held by the society was ₹250 crore, but it was noticed that even the smallest of the works entrusted was worth ₹51.42 crore and the maximum quantity of work in hand was ₹809.93 crore, thus violating the guidelines issued by the Government.

²⁶NABARD RIDF XIX: Improvements to Kodungallur –Athani Airport Road (KM 0/000 to 16/900) Part I in Thrissur District.

²⁷Para (4) of Annexure II of GO (P) No.311/14/Fin dated 30/07/2014 & Annexure to GO(P) No. 339/2015/Fin dated 07/08/2015.

In the exit meeting, the Special Secretary to the Government in PWD stated that the entrustment was based on a Cabinet decision in which the guidelines of the Finance Department were not considered. Audit observed that the Committee on Public Accounts disapproved²⁸ the practice of nominating an agency to entrust a work. It further reiterated that the Department should resort to more transparent tendering procedure for awarding any work. Further, the Honourable Supreme Court of India emphasized²⁹ that the award of Government contract should be through public auction/public tender. This would ensure transparency, economy and efficiency in government procurement to promote healthy competition among the tenderers, to provide for fair and equitable treatment of all tenderers and to eliminate irregularities, interference and corrupt practices by the authorities concerned. As the Department did not adhere to the guidelines issued by the CVC, Government and the Supreme Court's directions on awarding the contract, an inquiry needs to be initiated by Government to fix responsibility.

3.1.5.2 Issues relating to Security Deposits for works

In terms of Section 2009.7 of the Manual read with the Government's (Finance) orders³⁰ (September 2015), the selected bidder shall produce a Security Deposit (SD) equal to five *per cent* of the contract amount for executing contracts, which is to remain valid till the expiry of DLP of the work. Prior to this, the Government in a circular (March 2003)³¹ permitted contractors to adjust the amounts due to them on account of completed works as SD of new contracts awarded to them. The various types of irregularities noticed regarding SD are discussed below:

➤ Pledging part bills of incomplete works

The Department permitted contractors to pledge part bills of two incomplete works (**Appendix 3.1.6**) as SD for seven newly awarded works, of which the bill of an incomplete work was pledged as SD of six contracts of the same contractor.

In respect of one out of the two incomplete works, CE, R&B replied that as per the recommendation of the EE, Roads Division, Ernakulam, second and part bill of a work amounting to ₹2.13 crore was pledged as the amount was sufficient for the security deposit of ₹1.29 crore. Reply of the CE is not acceptable as the circular permits only pledging of pending bills of completed works. In respect of second work, no reply was furnished.

➤ Defect liability period not covered by security deposit

The EE, Roads Division, Thrissur, arranged (May 2016) a work³² for providing retro-reflective sign boards/object hazard marker for which DLP was 36 months, i.e. up to 28 May 2019. However, Audit noticed that the SD submitted by the

²⁸Committee on Public Accounts (2014-2016) - 113th Report presented to the State legislature on 18 February 2016.

²⁹Judgement arising out of SLP (civil) No. 10174 of 2006.

³⁰GO(P) No.104/2014/Fin dated 14/03/2014, GO(P) No. 3/15/Fin dated 05/01/2015 and GO(P) No. 429/15/Fin dated 28/09/2015.

³¹Circular No.4583/H3/2003 dated 07/03/2003.

³²Providing road safety measures to various junctions in Thrissur-Kuttipuram road.

contractor was valid up to 03 March 2017 only. SE, R&B, Central circle replied that instruction was given to the contractor to furnish the SD for 36 months.

Audit observed that the actions of the Department provided undue benefit to the contractors and violated Government directions.

3.1.5.3 Non-revoking of Bank Guarantee

Tender conditions stipulate that the contractor is to remit Bank guarantee (BG) at the rate of 10 *per cent* of the contract amount at the time of executing the contract, so as to ensure performance of the work during the period of contract.

Audit noticed that in two instances³³, the agreement authority obtained BG amounting to ₹2.16 crore at the time of executing agreements. As the contractors did not complete the works in time, the SEs concerned extended the ToC but failed to ensure renewal of the BG for the extended periods. The SEs terminated the works at the risk and cost of the contractors as they did not complete the works within the extended ToC. The balance works were rearranged at higher rates. As the BG was not renewed, the Department lost the opportunity to recover the risk and cost from the original contractors to the extent of the BG.

In respect of one work, SE, R&B, North circle stated that BG was not renewed due to oversight.

In respect of the other work CE, R&B replied that BG expired on 30 June 2013, and the Department approached the Bank for withholding BG on 9 July 2014. He further stated that the Honourable High court passed a stay order (28 May 2015) against realisation of the amount from the contractor. The reply is not acceptable as the Department failed to take action to ensure the validity during the extended period of contract and to realise BG in time.

In the exit meeting, the Department stated that there was a lacuna in the system and that the finance wing of the Department was to ensure validity of the BG for the required period.

Irregularities/deficiencies in execution of works

3.1.6.1 Preparation of defective estimates leading to revision of estimates

The Manual stipulates that proper care shall be bestowed on the preparation of a detailed estimate so that it reflects, as faithfully as possible, the cost of work as can be foreseen at that time.

Audit noticed that, estimates of 63 works were revised post award, citing changes in the quantity/scope of work as discussed in the following paragraphs.

³³NABARD RIDF XV – Development and improvements to Peruva-Piravom-Peruvannamuzhy-Valampur-Valayamchirangara – Cheenikuzhi road Km. 0/000 to 30/030 including reconstruction of Vilappil Bridge (R&B Central Circle), Improvements to carriageway of Mudappallur-Mangalam dam road by providing BM & BC to Ch. 0/000 to 9/432 in Palakkad District (R&B North Circle).

➤ **Revision of estimates compromising on traffic safety and road safety**

In terms of the Manual, drainage is the most important aspect for proper upkeep of roads, as it strengthens the pavements and increases their life by reducing the moisture present in and below the pavement. Further, all road works must be properly provided with signs to warn road users about possible hazards.

It was noticed that initially, there were provisions for road safety and traffic safety items in the original estimate of the works, but during execution, the Department reduced the provisions for crash barriers, delineators, sign boards culverts, retaining wall etc. which compromised traffic safety/road safety in the revised estimate of 10 works (**Appendix 3.1.7**).

CE, R&B attributed different reasons for different works such as lack of proper original estimation leading to exclusion of certain items on execution, executing the work within the contract amount, limiting the expenditure within sanctioned cost etc.

The reply is not acceptable as compromising traffic safety and road safety would adversely affect the road users.

➤ **Erroneous calculation of rate of extra item**

In one work³⁴ involving construction of cast in-situ cement concrete drains under NH, North Circle, Kozhikode, the contractor quoted the rate for cement concrete and reinforcement separately. The rate quoted for reinforcement was ₹50,000 per MT. Later, on the plea of avoiding difficulties to public during construction and for enabling speedy completion, the Department substituted the item of cast-in-situ cement concrete drain with pre-cast drain for 629.38 cum, as an extra item. The item was approved for execution at estimate rates of ₹17,967 per cum at a total cost of ₹1.13 crore, reckoning the cost of reinforcement as ₹60,004 per MT.

In addition to the above, the Department also made provisions in excess of those specified in the MoRTH SDB for cement concrete, which consisted of cement, labour and use of machinery.

On this being pointed out (August 2017), the SE cancelled (August 2017) the supplemental agreement executed for the extra item and stated that the defects would be rectified and new supplemental agreement executed.

In the exit meeting EE, NH division, Kannur stated that the rate was reduced and that finalisation of the rate by higher authorities was under process.

➤ **Change in items of work causing additional financial burden to Government**

Audit detected instances wherein the items of work already included in the tender were altered/substituted/excluded during execution, leading to additional financial burden to the Government, as discussed below:

³⁴CRF-15-16 Improvement to Chelarimukku – Kolacherimukku - Nayattupara road in Kannur district ch 0/000 to 18/500 km.

In terms of MoRTH data, constructing the superstructure of a bridge on the piers at site is cheaper than casting the same on land and then launching it on the piers. The agreement of a bridge work³⁵ stipulated launching of the superstructure after it was cast on land. But during execution, the work was changed to casting of superstructure on the piers at site. Audit observed that even though the change in method should have reduced the cost, the cost of work actually increased by ₹85.35 lakh. This was due to adoption of a method different from MoRTH data for arriving at the unit rate for construction of superstructure, such as incorporation of hire charges of pontoon, excess provision for incidental items, etc.

CE, R&B replied that due to the narrow width of the approach road and a lot of sharp curves and bends, it was difficult to pre-cast and launch girder and slab. Also land for casting was not available. Hence, it was approved to carry out cast in-situ girder using N-truss. The data was based on observed data, which was on the lower side.

Audit observed that the following factors led to cost escalation on the extra item:

- While the Department adopted OH charges of 20 *per cent* prescribed in MoRTH SDB for rate analysis of the extra item, they did not adopt the MoRTH data as such to arrive at the rate.
- They did not even adopt observed data used in other bridge works. Instead, usage of N-truss was limited to four, whereas in other works, the maximum usage was up to 18 times.

Considering the Department's observed data in other bridge works, the maximum rate for construction of superstructure was ₹26,071 per cum whereas the Department considered ₹44,454 per cum for cost of the entire superstructure disregarding the already agreed lower rate of cross girder which is part of the superstructure. Hence, the reply of CE is not acceptable and the action of CE to grant a higher rate compared to other works led to avoidable cost overrun of ₹ 4.07 crore³⁶.

➤ **Sanctioning of ancillary works as extra items**

In terms of MoRTH specification, the rate for construction of pile is inclusive of the cost for conducting pile load test. SE, R&B, Central Circle Aluva awarded a work³⁷ to a contractor for driving down test pile and conducting pile load test. Audit observed that after executing the agreement, the CE, R&B accorded separate sanction (April 2016) for conducting pile load test as an extra item costing ₹ nine lakh. The action of the CE, R&B was tantamount to extension of undue benefit to the contractor, vitiating the tender system.

³⁵Construction of Nanicherikadavu Bridge across Valapatanam River.

³⁶₹44,454 per cum less ₹26,071 per cum multiplied by the quantity of 2,212 cum equals to ₹4,06,63,196.

³⁷Construction of Perandoor - Vaduthala bridge across Perandoor Canal in Ernakulam district- Driving down test pile and conducting pile load test.

SE, R & B, Central Circle stated that there was lump sum provision for conducting pile load tests in the technical sanction but was not included in the tender. He stated that approved schedule had provision for casting of pile alone and hence revised estimate was submitted and sanctioned.

The reply is not acceptable as the nomenclature of the work itself specifies conducting of pile load tests. Hence, its inclusion as an extra item without mentioning in the tender is an undue favour to the contractor, as he is required to do the same without extra payment.

➤ **Irregular provision of incidental items of work**

As per contract conditions, the rates quoted by the contractor shall be inclusive of incidental items of work such as shoring, formation of ring bund, bailing out of water etc. Further, the contractor shall make all arrangements for inspection of works, free of charge.

Audit observed that, while revising the estimate of two works³⁸, the Department made separate provisions for incidental items such as cost of footbridge for supervision in one work and cost of bailing out of water and formation of ring bund in the other work at a total cost of ₹35.28 lakh, which was a violation of the contract conditions.

In respect of Ayamkadavu Bridge CE, R&B replied that as the height of the bridge from the river to the bottom of the girder was between 20 and 24 m, it was necessary to provide the supervising officers with a strong and safe foot bridge to inspect the work. The cost of the foot bridge is more than the incidental charges included in the rate of concrete. Hence, additional provision was given for supervision and inspection of piers and superstructure in the estimate. The reply is not acceptable as the contractor had to provide the facilities for supervision of site for his own technical staff at his own cost, and provision of the extra item for supervision at Departmental cost is an undue benefit to the contractor.

➤ **Excess quantity of road studs provided on a road**

As per Indian Road Congress (IRC) guidelines 35-2015, the minimum space to be provided between two road studs is six meters. Audit noticed that during execution of a work³⁹, road studs were placed at intervals of two to three meters instead of six meters. Excess execution of studs in violation of the IRC specification resulted in extra cost of ₹43.96 lakh.

Audit noticed that there was a complaint from public regarding excess number of studs creating a dazzling effect at night which could adversely affect traffic safety.

In the exit meeting CE, NH stated that while doing the next reach of the road the IRC specification would be adopted.

³⁸MLA – LAC- ADF – widening and improvements to Mannirampady –Thekkepuram road Ch. 0/000 to 1/180 (Agreement No. 125/SESC/13-14 dated 30/10/2013) and Construction of bridge at Ayamkadavu across Vavadukkam River on Perladukkam-Ayampara-Periya road.

³⁹Widening of 6/4 lane from Karamana ch 570/200 to Kaliyikkavila 599/000 of NH 47.

3.1.6.2 Undue benefits extended to contractors

➤ Excess provision made for pontoon which is an incidental item for bridge works

According to general practice, for construction of bored cast in-situ pile foundation of bridges, where formation of islands using earth is found to be uneconomic or technically unfeasible, pontoons can be provided. Audit observed that while the practice of allowing either island or pontoon is followed correctly in R&B Central Circle, it was not followed in R&B North Circle.

In the construction of a bridge work⁴⁰ under Roads Division, Kannur the original provision was to construct islands at a cost of ₹45.23 lakh and connecting service roads between islands at a cost of ₹10.47 lakh. But the Department substituted the item of service road with pontoon at a cost of ₹49.98 lakh citing that filling up of the river for forming a service road was not practicable. The Department's statement was not acceptable as usage of island made of earth, as per original provision, was economically more viable than pontoon. Hence, use of pontoon in place of connecting service road at such higher cost is not acceptable.

In the exit meeting Departmental officials from the Central region viz SE, R&B Central circle, Aluva and EE, Roads Division, Ernakulam stated that if formation of island was possible, pontoon was not necessary and *vice versa*. CE, NH opined that all divisions should take a uniform stand in this regard to reduce expenditure.

➤ Insufficient provision for defect liability period in contracts

The Government issued an order (April 2013) making the specifications of MoRTH mandatory for Roads and Bridges works in the State from October 2013. So in all roads and bridges works undertaken in the State, the DLP of the contractor is to be specified in the agreement according to MoRTH specifications. The DLP is defined by MoRTH as : "Three years as per specifications of MoRTH in respect of road works executed on NHs using Central Road Fund, if they are provided with bituminous thickness of 40 millimetres (mm) or more".

The Security Deposit is to be retained till the date of expiry of DLP.

Audit noticed that the Department did not provide sufficient DLP in agreements executed for eight road works⁴¹. It was observed that in one of these eight works on an NH, the contractor had to execute two layers of bitumen viz, bituminous macadam and bituminous concrete, which had a minimum thickness of 80 mm as per the contract. In accordance with the extant orders of Government on adoption of specifications of MoRTH, the required DLP in this case was three years but the Department provided DLP of only one year.

⁴⁰Construction of Kottakeel Pattuvam Kadavu Bridge in Kannur District.

⁴¹IRQP 2013-14 from km. 569/000 to 593/500 of NH 47 in the State of Kerala, Agreement Nos. EE/PL/56/2015-16 dated 04/03/2016, EE/PL/55/2015-16 dated 04/03/2016, EE/PL/52/16-17 dated 16/06/2016, EE/PL/51/16-17 dated 16/06/2016, EE/PL/43/16-17 dated 14/06/2016, EE/PL/44/16-17 dated 14/06/2016 and No. EE/PL/66/16-17 dated 30/09/2016.

CE, NH replied that in respect of the aforementioned NH work, DLP for one year was provided as mentioned in the technical note of the work and as per MoRTH circular in April 2012. In respect of the other seven works, CE, R&B accepted the observation and stated that it was a mistake while executing the agreement.

The fact, however, remains that the Government issued the order in April 2013 stating that MoRTH specifications were to be adopted henceforth, but the Department did not follow the specifications and allowed the contractor to avail DLP of only one year. Audit observed that the omission resulted in undue benefit to the contractors by exempting them from the liability of maintaining the road for the required period.

➤ **Granting of exemption from payment of royalty and resultant undue benefit to contractor**

In terms of Schedule-I of the Kerala Minor Minerals Concession Rules, 2015 (KMMC Rules), royalty of ₹40 per cum is payable for quarrying ordinary earth. According to contract conditions all taxes are to be borne by the Contractor.

The Government entrusted a work⁴² to M/s ULCCS, and exempted⁴³ (March 2016) them from paying royalty for the earth supplied by them. Audit noticed that the unit rate for filling earth was inclusive of cost of royalty at the rate of ₹45.27 per cum⁴⁴. Hence, the exemption granted by the Government resulted in undue benefit of ₹1.73 crore⁴⁵ to the contractor.

In the exit meeting CE, NH confirmed that provision of royalty as per DSR with cost index was included in the rate analysis. Hence, the contractor got the compensation for royalty and exemption from payment of royalty to the Government, which resulted in extending double benefit to the contractor.

➤ **Removal of earth to contractor's premises without paying royalty**

In terms of rule 106 of the KMMC Rules, 2015, royalty is payable on minor minerals removed from work sites.

Audit noticed that in a road work,⁴⁶ 44,965.67 cum of earth was removed from work site to the contractor's premises on the plea that the earth was not suitable for use in the work. Audit noticed that the Department did not collect royalty amounting to ₹17.99 lakh from the contractor before it was removed. After this was pointed out, the EE replied that the amount would be deducted from the final bill of the contractor.

⁴²Construction of Calicut Bypass – II Phase – II Reach- from 0/000 to 5/000 of NH 17.

⁴³Government issued an order dated 01/03/2016 vide. GO (MS) No. 43/2016/IND, wherein exemption of royalty was accorded to ULCCS.

⁴⁴Royalty @ ₹30 per cum plus cost index of 27 per cent on royalty amounting to ₹8.10 per cum plus overhead charges of eight per cent amounting to ₹3.05 plus tax and other overhead charges amounting to ₹4.12 totalling ₹45.27 per cum.

⁴⁵Royalty at the rate of ₹40 per cum for a quantity of 4,32,400 cum. equals to ₹1,72,96,000.

⁴⁶Widening of 6/4 lane from Karamana ch 570/200 to Kaliyikkavila 599/000 of NH 47.

➤ **Benefit extended to contractor in excess of the work executed**

The specification given by the Department for installing W/Thrie -metal beam crash barriers in two works⁴⁷ stipulated that metal beams were to be fixed to vertical posts anchored in soil using cement concrete⁴⁸ at intervals of two meters, centre to centre.

The unit rate for installing the crash barriers, including cement concrete, was calculated in rate analysis for a length of 4.5 m and each unit consisted of three vertical posts. JPV revealed that vertical posts of crash barriers were being provided at two meter intervals over a continuous length, without break. Hence, while a crash barrier for a continuous length of 18 m consisted of 12 vertical posts as per the unit rate reckoned by the Department, actual requirement was only 10. The excess provision of vertical posts is illustrated in the diagrams shown below. Thus, for every 18 m length, the contractor stood to receive payment for cement concrete for 12 posts even though only 10 posts were actually anchored by him. This resulted in undue benefit of ₹92.01 lakh⁴⁹ to the contractor.

Diagram showing excess provision of vertical posts

Figure A: Length of 4.5 m crash barrier (as per rate analysis)



Figure B: Requirement of vertical posts for 18 m long crash barrier as per rate analysis

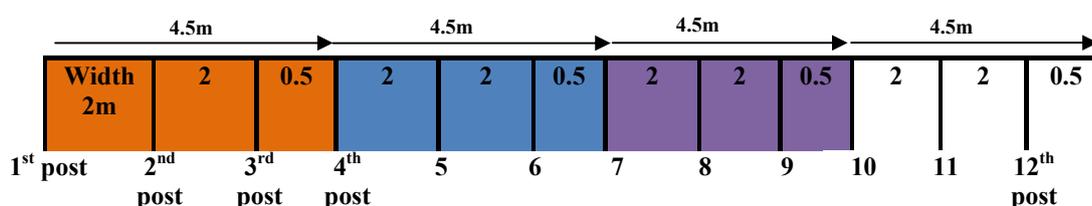
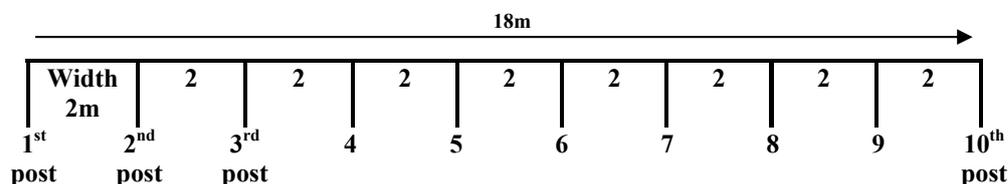


Figure C: Requirement of vertical posts for 18 m long crash barrier on actual execution



⁴⁷CRF work 2013-14 improvements to Danapady – Karthikapally – Muthukulam- Pullukulangara – Kayamkulam NH to NH, Providing traffic safety measures between Km. 67/000 to 97/070 of CVG road.

⁴⁸As per clause 811.3 of MoRTH specification for road and bridge works, fifth revision issued in April 2013 vertical posts can be fixed in cement concrete.

⁴⁹Requirement of cement concrete for excess number of vertical posts alone was considered.

➤ **Understating of out-turn resulting in excess payment**

According to SDB of MoRTH, out-turn of boring for 1.2 m diameter pile foundation is nine metres per day and for a one metre diameter pile, the out-turn is 10 m per day.

Audit noticed that in a bridge work⁵⁰ in Ernakulam district, the out-turn reckoned in the estimate for providing bored cast in-situ pile for foundation was only 1.4 m per day for 1.2 m diameter pile and 2.5 m per day for one meter diameter pile. Verification of measurement books and log book of boring revealed that the progress of boring on actual execution was even higher than the MoRTH data. Since MoRTH data was not adopted, lower out-turn reckoned in rate analysis led to an avoidable excess cost of ₹1.73 crore.

CE, R&B replied that they adopted data based on the rates arrived for similar other works where the soil strata is similar. Further, MoRTH SDB was adopted after issuing technical sanction of this work. It was also stated that the boring operations were carried out continuously on a 24 hour schedule without any interruption and were not deviated from the out-turn provided in the rate analysis.

The reply is not acceptable as MoRTH SDB was already adopted for other items in this work also. Further, pile driving register revealed an out-turn of 39.30 m in one day in respect of one meter diameter pile instead of 7.5 m⁵¹ per day. As per the measurement book, 1.2 m diameter pile having a length of 74 m was measured within eight days from the date of commencement of work whereas the out-turn adopted by the Department was 4.2 m⁵² per day.

This revealed a much higher out-turn for boring of pile than adopted by the Department for estimation.

Thus, adoption of different method deviating from MoRTH SDB resulted in undue benefit to the contractor.

➤ **Favouritism shown by departmental officials to a contractor violating contract condition**

As per contract conditions, arrangement of extra items⁵³ in an ongoing work requires inviting of quotations from the contractor who executes the work concerned. While inviting quotations, the rates calculated by the Department for the items of work being confidential are not to be disclosed to the contractor.

The SE NH North Circle, Kozhikode arranged a work⁵⁴ in February 2016. The rates quoted (26 May 2016) by the contractor⁵⁵ for 16 extra items in this work

⁵⁰Construction of Kannangattu – Willington Island Bridge across Kumbalam Kayal.

⁵¹Considering three shifts per day i.e. 2.5 m per shift multiplied by three shifts equals to 7.5 m per day.

⁵²Considering three shifts per day i.e.1.4 m per shift multiplied by three shifts equals to 4.2 m per day.

⁵³Items of work, which were not included in the original agreement.

⁵⁴Road safety estimate – Providing traffic safety measures between km 15/000 to 57/000 of Calicut – Kollagal road in NH 766 (old NH 212) in the state of Kerala (Agreement No. 22/2015-16/SE/NH/KKD dated 29/02/2016).

were found to be higher than those calculated by the Department. The SE requested (26 May 2016) the contractor for reduction of rates and he obliged (27 May 2016). The original as well as reduced rates were recorded⁵⁶ in the Distribution Register (Inward Register) maintained in the office of the SE. The Department subsequently detected some errors in the calculation of departmental rates for extra items, which resulted in upward revision of the rates.

Scrutiny of the relevant records by Audit revealed that the contractor submitted another set of identical quotation documents after the corrected upward calculation by the Department, which was inserted in the file record with the same inward numbers as of the previous quotation. The first negotiated quote of the contractor conformed to the pre-corrected rates of the Department while the second quote conformed to the revised rates. Accordingly, supplemental agreement was executed (September 2016) by the contractor based on the revised rates.

The additional financial commitment by reckoning the second set of documents containing the revised rates came to ₹16.05 lakh, of which ₹0.65 lakh was already paid (March 2017) to the contractor.

On this being pointed out, the SE stated that (August 2017) he directed the contractor to reduce the rates in the supplemental agreement on the basis of the audit observations, and that the contractor expressed willingness to execute extra item No.11 on the earlier offered rate (₹1,435.40 per cum) instead of the rate agreed later (₹2,747 per cum), which would result in reduction in the value of the extra items by ₹13.44 lakh and also execute a new supplemental agreement accordingly.

It is, therefore, evident that the records were manipulated by substituting the quotation originally submitted by the contractor with another set matching the upward revised rates of the Department and assigning the same inward numbers, resulting in extending undue benefit to the Contractor.

3.1.6.3 Lapses in monitoring and supervision of works

In terms of the Manual, the Assistant Engineer (AE) shall be responsible for proper execution of all works in his Section in general and for ensuring the execution of works as per approved plans, in particular.

Audit noticed that in the following instances, the field officers failed to ensure that the contractors complied with the agreed specifications/plans during execution of works:

⁵⁵M/s K Ravindran, Kozhikode.

⁵⁶As serial numbers 922 dated 26/05/2016 and 923 dated 27/05/2016 respectively.

➤ **Non-use of specified material in road works**

Bituminous emulsion based construction is very efficient in avoiding the wearing of ingredients of the mix. The items of work for providing prime coat and tack coat⁵⁷ for road works stipulates use of bitumen emulsion.

It was observed that in six works⁵⁸ arranged by the EE, Roads Division, Palakkad, against the agreed specification of bitumen emulsion for executing prime coat and tack coat, the contractor used ordinary bitumen (VG 30). The field officers did not ensure compliance with the agreed specification, which could affect the durability of the road adversely.

In the exit meeting, the concerned EE stated that VG 30 was used in lieu of bitumen emulsion due to non-availability of the material at departmental stores.

Thus, non-usage of the approved material poses risk of damage to the life of roads.

➤ **Inferior quality of work due to non-adherence to agreed specifications**

As per the Manual, every work has to be properly supervised to ensure that it is carried out in accordance with the required specifications.



- In four completed works having provision for W/Thrie-beam metal crash barriers, adequate quantity of cement concrete was not provided for fixing the vertical posts as required by the specifications as detailed in **Table 3.1.2**, which was confirmed after excavation around the vertical posts in the presence of Departmental officers. This indicated failure in supervision by Departmental authorities.

⁵⁷Prime coat and tack coat are thin bituminous liquid layer to provide bonding between existing pavement and new layer pavement.

⁵⁸Agreement Nos.: EE/PL/29/16-17 dated 03/06/2016, EE/PL/28/16-17 dated 03/06/2016, EE/PL/15/16-17 dated 29/04/2016, EE/PL/16/16-17 dated 29/04/2016, EE/PL/52/16-17 dated 16/06/2016, and EE/PL/51/16-17 dated 16/06/2016.

Table 3.1.2: Quantity of cement concrete not provided as per specifications

SI No.	Name of work in which JPV conducted	Size of cement concrete foundation of vertical post of W/ Thrie metal beam crash barrier (length x breadth x depth) in cm	
		Required	Observed during JPV
1	CRF 2013-14 improvements of Daanapady-Karthikappally-Muthukulam-Pullukulangara-Kayamkulam (NH to NH) road.	45 x 45 x 120 (with a volume of 0.243 cum)	Excavation conducted at two locations -At one location of vertical post the top layer of cement concrete foundation was of oval shape with a depth of up to 58 cm and volume of 0.148 cum and in the second post cement concrete was provided up to 60 cm with a volume of 0.140 cum.
2	Providing traffic safety measures between km 67/000 to 97/070 of CVG road	60 x 60 x 120	Excavation conducted at two locations. At both the locations top dimension was the same as that of specification and at a depth of 38 cm, the perimeter was 212 cm and 211 cm instead of 240 cm.
3	CRF 2014-15 Improvements to Koothattukulam-Mulanthuruthy road (Koothattukulam-Edayar-Piravam -Vettikkal-Mulanthuruthy).	45 x 45 x 125	Excavation conducted around three vertical posts. At one post though the top dimension was 45 x 52 cement concrete was not found after a depth of 50cm. In second and third locations, though top dimension was 45 x 45, cement concrete was not found after a depth of 30 cm.
4	Improvements to 12 roads leading to games village and karyavattam stadium	45 x 45 x 120	Excavation conducted at two locations. At first location, the top dimension was of irregular shape with average dimension of 55 x 25 cm but cement concrete was not found after a depth of 43cm. In the second location, excavation was done up to a depth of 60 cm, it was found that top perimeter was 170 cm, middle having 168cm and bottom 135 cm.

Source: Joint Physical Verification Reports and Departmental records.

- In another work⁵⁹, the samples analysed by the quality control wing of the Department on a JPV of the site showed the content of bitumen in the bituminous layers to be less than the agreed specifications.

In the exit meeting, CE, NH while agreeing to lack of supervision by the field officers stated that recovery from those responsible would be effected.

3.1.7 Conclusion

- Planning and estimation were done without conducting proper investigation and ensuring availability of fund and land.
- Specification of work items in the estimates were not in accordance with those prescribed in SDB/specifications of MoRTH.
- The tendering process followed by the Department contained irregularities such as inadequate provision for time of completion of works, violation of financial powers delegated and delay in awarding of works.

⁵⁹Improvements to Edappally-Muvattupuzha road from km. 8/000 to 11/020 (Kuzhivelipady to Pukkattupady).

- Works were awarded violating the guidelines issued by the Finance Department and also violating the Constitutional provisions.
- Preparation of defective estimates without proper analysis of the requirements led to unnecessary revision of estimates resulting in extension of undue benefit to contractors and consequent additional financial burden to the Government.

The matter was referred (January 2018) to Government and their reply is awaited (March 2018).

3.2 Functioning of the Kerala Road Fund Board

3.2.1 Introduction

The Kerala Road Fund Board (KRFB), a statutory body was established (February 2002) by Government of Kerala (Government) pursuant to the Kerala Road Fund Act, 2001 (the Act). The Act provides for the establishment of a Fund for investments in transport facility projects in the State and to constitute a Board for administration of the said Fund and to monitor and supervise the activities financed from the Fund. The Act prescribed proceeds from various sources to be credited to the Fund. The Secretary to Government, Public Works Department (PWD) is the Member Secretary (MS) and administrative head of the KRFB. There is an executive committee (EC) for the Board and the Chief Executive Officer (CEO), appointed on contract basis, is the head of office controlling technical and ministerial functions of the Board. The organisational structure of the Board and the Executive Committee is given in **Table 3.2.1**.

Table 3.2.1: Organisational structure of the Board and the Executive Committee

	Board	Executive Committee
Chairman	Chief Minister	Minister for works
Vice Chairman	Minister for works	Secretary to Government/PWD
Ex-officio Members	Minister for finance	Secretary to Government/Finance
	Minister for transport	
	Secretary to Government/PWD (Member Secretary)	Secretary to Government /Law
	Secretary to Government /Law	
	Chief Engineer/Roads and Bridges	
Nominated Members	Three persons nominated by Government among the heads of financial institutions engaged in the business of infrastructure, scheduled banks or technical or engineering personnel working in national level institutions.	Two members nominated by the Board from among the nominated members of the Board

Source: Kerala Road Fund Act

3.2.2 Audit objectives and scope

The objectives of audit were to ascertain whether:

- the Kerala Road Fund was established and properly administered by the Board in compliance with the provisions of the Act;
- transparent procedures were adopted in selection of project proposals and Concessionaires for Public Private Partnership (PPP) projects, and the projects were implemented observing canons of financial propriety; and

- (c) supervision and monitoring of the projects by KRFB were in compliance with the provisions of the Act.

As the first project undertaken (March 2004) by KRFB, viz. Thiruvananthapuram City Roads Improvement Project (TCRIP) was still continuing, the activities of the Board from March 2004 were covered in audit. The only other PPP project, Kozhikode City Roads Improvement Project (KCRIP) was commenced in 2015 of which phase-IA was nearing completion.

Audit Findings

3.2.3 Poor achievement of objectives

Section 6(2) of the Act prescribed various sources of funds to be credited to the Road Fund which included:

- all moneys received from the Central Road Fund established under the Central Road Fund Act, 2000;
- 10 *per cent* of the Motor Vehicle Tax (MVT) collected as per provisions of the Kerala Motor Vehicles Taxation Act, 1976;
- all fees, fines and other amount collected by the Government as per the provisions of the Kerala Highway Protection Act, 1999; and
- all amounts standing to the credit of the Bridges Fund established under Section 12 of the Kerala Tolls Act, 1976;

KRFB received no fund in compliance with the above provisions except the share of MVT, which was also far below the prescribed share as per the Act. The total amount of MVT collected by the State during the period 2000-01 to 2015-16 was ₹16,456.62 crore out of which ₹1,645.65 crore was to be released to KRFB. The Government released only ₹895.23 crore (up to June 2017). The Government was yet to reply regarding the reason for the shortfall in crediting the prescribed share of MVT to KRFB.

Section 4 of the Act authorised the Board to formulate criteria for financing transport facility projects, but the Board did not formulate any such criteria. The CEO stated that financing of projects was based on the decision of the Government from time to time.

KRFB undertook only two City Road Improvement Projects—TCRIP and KCRIP improving 64.318 km of road during the last 15 years. Other than this, there were seven City Road Improvement Projects (CRIPs) proposed under KRFB, the present position of which is shown in **Table 3.2.2** :

Table 3.2.2: Present position of CRIPs

Name of city	DPR ⁶⁰ submitted to government in	Present position (January 2018)
Alappuzha (phase-I)	January 2017	Administrative sanction (AS) obtained (May 2017), tendering in process
Alappuzha (phase-II)		Final DPR under preparation
Kannur	November 2013	AS obtained (August 2017)
Kollam	March 2017	Final DPR approved and AS awaited
Kottayam	November 2013	DPR approval awaited
Malappuram	November 2014	DPR approval awaited.
Thrissur		Final DPR under Scrutiny

Source: Records of KRFB

The gross total expenditure incurred by KRFB during the 15 year period ending 2016-17 comes to ₹803.56 crore as detailed in **Table 3.2.3**:

Table 3.2.3: Expenditure details of KRFB

Amount paid to M/s TRDCL ⁶¹ towards annuity for TCRIP	₹181.40 cr.
Amount paid to M/s TRDCL towards arbitration award ⁶²	₹124.95 cr.
Expenses for other projects including preparation of DPRs	₹173.07 cr.
Administrative expenses	₹ 11.80 cr.
Funds provided to PWD/other agencies for implementation of works under SPEEID Kerala Programme	₹312.34 cr.
Gross total expenditure	₹ 803.56 cr.

Source: Accounts of KRFB

The DPR of Kannur CRIP submitted in 2013 was approved only in 2017 and that of Kottayam (2013) and Malappuram (2014) are not yet approved. The CEO claimed (October 2017) that the primary objectives of KRFB were achieved by implementing seven CRIPs besides funding a few projects of other wings of PWD by spending ₹312.34 crore for Sustainable and Planned Efforts for Effective Infrastructure Development (SPEEID) Kerala Programme. But, the fact remains that only two CRIPs were undertaken during the last 15 years. In respect of SPEEID, the role of KRFB was only funding without involvement in monitoring and supervision of the activities so funded.

Thus, the achievement of KRFB in formulating and implementing projects for improving the transport facilities in the State was poor.

3.2.4 Injudicious application of funds

3.2.4.1 Lending of ₹53.69 crore outside the purview of prescribed functions/activities

The Act and Rules do not provide for lending from the fund except assistance in the form of loans secured by borrower's assets. KRFB advanced an amount of ₹53.69 crore (**Appendix 3.2.1**) to Roads and Bridges Development Corporation

⁶⁰Detailed Project Report.

⁶¹Thiruvananthapuram Road Development Company Ltd.

⁶²This aspect was commented in para 3.4.6 of C&AG's Audit Report (Civil) for the year ended 31 March 2011 (Report No.2 Government of Kerala).

Kerala Ltd (RBDCKL), a PSU, during the years 2007 and 2008, in different spells with varying rates of interest as low as 6 *per cent* per annum. KRFB lent the amount for meeting the working capital requirements⁶³ of RBDCKL which did not repay any amount towards principal or interest till date (August 2017). The EC sanctioned the loan during the period when the Board did not meet for four and half years from 17 May 2007 to 08 November 2011 and the decision of the EC was ratified (09 November 2011) by the Board. Lending of money was outside the purview of the prescribed functions/activities of KRFB and not in conformity with the provisions of the Act and Rules.

The total amount due from RBDCKL including interest of ₹33.69 crore accrued up to 31 August 2017 worked out to ₹87.38 crore (**Appendix 3.2.1**). CEO stated (January 2018) that the matter was taken up with RBDCKL and the Government for settling the outstanding amount. The Government had already directed (September 2016) RBDCKL to repay the amount of loan with interest stating that KRFB did not have substantial income of its own for lending.

3.2.4.2 Undue favour to contractors by way of mobilisation advance

As per the Government (Finance Department) orders⁶⁴, no mobilisation advance (MA) would be given to agencies which are not executing works directly. The Government, accorded⁶⁵ administrative sanction to ten projects under SPEEID Kerala Programme to be funded through KRFB. As recommended by KRFB, the Government (PWD) sanctioned MA to the implementing agency for two works as shown in **Table 3.2.4**:

Table 3.2.4: Details of mobilisation advance

Particulars	Improvements and Heavy maintenance to Ramapuram- Nalambalam Darsanam road	Upgradation of Kanjikuzhy-Vettathukavala-Karukachal road
Project cost	₹67.00 cr.	₹67.26 cr.
Implementing agency	KSCC ⁶⁶ Ltd	KSCC Ltd
Name of contractor	M/s EKK&Co	Sri. Sony Mathew
MA released	₹10.15 cr.	₹9.07 cr.
Date of release of MA	17 January 2015	16 January 2015

Source: Records of KRFB and KSCC

The CEO stated (September 2017) that the Government sanctioned the advances to the implementing agencies for onward transmission to the contractors. But, Kerala State Construction Corporation Ltd. (KSCC), in their tender notification clearly mentioned that no MA would be allowed. KRFB, while recommending the MA and PWD while sanctioning it, did not reckon the ineligibility of the contractors for advance with reference to the tender conditions. The CEO stated (January 2018) that such instances would be avoided in future.

⁶³For enabling the company to meet the expenditure related to works already undertaken by them: to pay interest on bonds already issued by the company; for redeeming the bonds; for repaying the bridge loan taken from Bank and for paying the overdue liabilities to HUDCO.

⁶⁴Para 12 in Annexure II of the GO (P) No.311/14/Fin dated 30/07/2014.

⁶⁵G.O.(MS) No.18/2014/PWD dated 22/02/2014.

⁶⁶Kerala State Construction Corporation Ltd.

3.2.4.3 Irregular expenditure for publishing magazine

None of the provisions of the Act and Rules provide scope for spending from the Fund for any publication on behalf of the administrative department. The EC in its 17th meeting (March 2012) decided to provide funds for publishing an in-house journal for PWD. KRFB incurred ₹23.025 lakh during the period from 2012 to 2015 for publishing the magazine 'Rajaveedhi' through a private press. The CEO stated that in order to highlight the activities and achievements of KRFB and other organisations under PWD an exclusive journal was necessary. Spending on publishing of magazine on behalf of the PWD was beyond the scope of functions of KRFB and hence, irregular. The CEO assured that steps would be taken for observing financial propriety in future.

3.2.4.4 Expenditure of ₹0.90 lakh for the purchase of a painting

KRFB spent (October 2014) ₹0.90 lakh for the purchase of a painting by the renowned artist Shri B.D. Dethan, which was kept in the store room of KRFB. The CEO stated that the painting was purchased under orders of the then Member Secretary, Shri.T.O. Sooraj to furnish his office at the Government Secretariat. It was returned to KRFB on his relief from the post of Secretary, PWD and kept in the cellar safely. The Act or Rules do not provide for incurring of such expenditure by the Board and the action also violated the provisions of the Kerala Financial Code, which stipulates that purchase of portraits for public buildings requires sanction from the Government. Thus, the utilisation of ₹0.90 lakh from the Kerala Road Fund for furnishing the office of the Secretary, PWD at the Government Secretariat was irregular. The CEO stated (January 2018) that steps would be taken for valuation and disposal of the painting.

3.2.5 Irregularities in administrative matters

3.2.5.1 Irregular exercise/delegation of financial powers

The Board resolved (March 2003) to fix the monetary limit delegated to the EC as ₹10 lakh. The Member Secretary (MS) ordered⁶⁷ (August 2010) that (i) administrative sanction for original works up to ₹3 lakh would be issued by Chief Finance Officer (CFO); (ii) up to ₹5 lakh by the Chief Operating Officer (COO); and (iii) Cheque operations of above ₹5 lakh up to ₹50 lakh for which approval of MS has been obtained would be carried out by the CFO and COO jointly. This order was further modified⁶⁸ to the effect that the financial powers delegated to all other officers were withdrawn and fully vested with the COO. Accordingly, cheque drawals of up to ₹50 lakh were being done solely by the CEO (COO was re-designated as CEO in November 2011). The CEO stated that the Board meeting held on 05 March 2003 authorised the MS to delegate his financial powers to any person/persons with the approval of the EC. But as the financial powers delegated to EC by the Board was ₹10 lakh only, that exercised by the MS above ₹10 lakh and subsequent delegation of the same to the COO was beyond the competency of the MS. The CEO stated that he was not aware of the

⁶⁷vide order No.1803/A3/KRFB/2010/Estt dated 20/08/2010.

⁶⁸vide order No.1803/A3/KRFB/2010/Estt dated 23/11/2010.

matter till it was pointed out by Audit and would place it before the Board for regularisation.

3.2.5.2 Irregular continuation of CEO without approval by Government

The EC in its meeting held on 03 December 2009 decided to appoint a COO on contract basis and appointed Shri Harikesh PC to the post and re-designated (November 2011) it as CEO. As decided by the EC (May 2013) the MS extended the term of the CEO up to June 2016. The Government ratified the action in February 2015. Though the Board sanctioned further extension for three years, government sanction for the same was not obtained. The incumbent was continuing in office - from July 2016 onwards without government approval. This was in contravention to the government order (November 2013) which directs that prior permission of the Government was required for recruitment of personnel to administrative/financial/legal posts of Public Sector Undertakings and Autonomous Bodies. The CEO stated that based on the audit observation, Government was addressed (January 2018) to issue necessary orders sanctioning the extension.

3.2.6 Irregularities in implementation of PPP Project-TCRIP

TCRIP was implemented for improvement of 42.067 km of city roads in 17 corridors. The project was arranged under BOT mode and the Concessionaire of the project was TRDCL. The concession agreement was executed on 16 March 2004 between KRFB, State PWD and the Concessionaire. As per the agreement, the Concessionaire shall construct the project facilities within a period of 32 months and on completion, operate and maintain the project facilities as per project requirements for 15 years. The amount of half-yearly annuity payable to the Concessionaire was fixed at ₹17.749 crore. Due to various reasons, the project could not be completed as per the agreed date of completion. It was mutually agreed to complete the work in a phased manner and pay the annuity proportionately. The project was carried out in four phases and Commercial Operation Dates (COD) were declared with effect from January 2008, February 2012, February 2015 and May 2016 respectively.

3.2.6.1 Non-compliance to Operation & Maintenance requirements

As per Article 5.5 of the Concession Agreement, the Concessionaire shall be responsible to operate and maintain the project facilities in accordance with the Operation & Maintenance (O&M) requirements. On scrutiny of periodical reports of the Independent Engineer (IE), Audit observed that the project facilities were not maintained as per the agreement conditions and O&M requirements. KRFB did not take proper action to repair and maintain the project facilities.

As per Clause 3.1.A(c) of Schedule-I of the Concession Agreement, the road roughness value shall be measured at least twice a year with a properly calibrated Bump Integrator (BI)⁶⁹ device and the Concessionaire shall ensure that at no point during the operation period the roughness of the road surface shall fall below the

⁶⁹BI –A device for quantitative integrated evaluation of surface irregularities on a digital counter.

prescribed acceptable roughness value. As per the BI tests conducted in December 2016 and June 2017 under the supervision of the IE, most⁷⁰ of the corridors did not fall within the acceptable value. The CEO replied (September 2017) that these results differed from those produced by the Concessionaire and therefore KRFB would measure the road roughness through a third party. This was beyond the scope of the concession agreement and it undermined the role of IE. The CEO later stated (January 2018) that the BI tests conducted by the third party confirmed the evaluation by the IE based on which the Concessionaire was directed for rectification.

As per Appendix I-1 of the O&M Requirements in the concession agreement, timelines ranging from 24 hours to one month were fixed for each type of rectification work. As per Article 5.5(b), in the case of failure to meet O&M requirements, KRFB may cause to repair at the risk and cost of the Concessionaire and the Concessionaire shall be liable to reimburse one and a half times the cost to KRFB. Audit observed that the Concessionaire did not rectify the defects pointed out in monthly/half yearly reports of the IE in time, as evident from subsequent monthly/half-yearly inspection reports. During the joint site verification conducted (July and August 2017) by the Audit team along with the Site Engineer/Deputy Manager of KRFB, it was observed (six photographs are given as **Appendix 3.2.2**) that restoration/rectification works in respect of cutting on road, paved footpath, etc. were not carried out by the Concessionaire at various points along 16 corridors (out of 17). The CEO stated (January 2018) that there were practical difficulties such as frequent road cuttings, delay in completion of works by utility agencies, high technology involved etc. in carrying out immediate restoration works and informed that notice was issued to the Concessionaire for remedial measures and in case of non-compliance, the work would be done at the risk and cost of the Concessionaire.

It is apparent from the above that the reports on the non-compliance of O&M requirements furnished by the IE in December 2016 to June 2017, many of which were confirmed in joint verification by Audit, were not acted upon, and penal provision as per Article 5.5 (b) not invoked (January 2018).

3.2.6.2 Failure in engagement of independent Project Engineer

As per Article 1.1 of the Concession Agreement, Project Engineer (PE) means “a reputed person being a firm, company or a body corporate appointed in accordance with Article 4, for supervision and monitoring of compliance by the Concessionaire as per the project requirements, more particularly to undertake, perform and carryout the duties, responsibilities, services and activities set forth in Schedule-L”. The role of PE *inter alia* includes,

- independent review, monitoring, and approval of activities associated with the Design, Construction, O&M of project facilities to ensure compliance by the Concessionaire with the DPR/project requirements; and

⁷⁰12 out of 17 (December 2016) and 14 out of 17 (June 2017).

- report to the parties on the various aspects of the project based on inspections, site visits and tests.

As per Article 4.1 of the Concession Agreement, ‘for the appointment of PE, the Board shall forward a list consisting of names with profile in brief of up to five persons who are willing to act as PE for the project. The Concessionaire shall select one person out of the list forwarded by KRFB together with its consent for appointment, and KRFB shall appoint within 15 days, such person as PE’.

But without following this procedure, KRFB posted Engineers from PWD as PE treating them as employees of the KRFB. Later KRFB appointed M/s Egis (India) Consulting Engineers Pvt. Ltd. (October 2012 to February 2016) and M/s Satra Infrastructure Management Services Pvt. Ltd., Secunderabad (September 2016 onwards) as Independent Engineers (IE). But the procedure prescribed under Article 4.1 was not followed in these appointments also.

The CEO stated that KRFB engaged the IEs for assisting in the monitoring of O&M activities of TCRIP. This was not true as the provisional certificate in respect of Phase III was issued by M/s Egis (India) Consulting Engineers Pvt. Ltd. in the capacity of ‘PE’ as envisaged in Article 5.4. The CEO admitted (January 2018) that the procedure prescribed as per Article 4.1 was not followed strictly for appointment of PE/IE, but it did not affect their performance as prescribed in the concession agreement. This was contrary to their earlier statement (September 2017) that the IE was posted to assist the PE. In effect, this loophole enabled the Concessionaire to discard the observations of the IE. The CEO assured that based on the audit observation, steps would be initiated for appointing an IE for TCRIP.

3.2.6.3 Excess expenditure of ₹10.74 crore due to exorbitant rates allowed as differential cost for substituting material for pavement of foot path

The approved DPR of TCRIP as well as the agreement provide for construction and maintenance of footpath paved with 18mm cobble stones laid over 150mm thick sub grade on 18 mm cement mortar wherever necessary. Based on a proposal, the EC meeting held on 25 August 2008 approved in principle substitution of the cobble stones with Polymer coated Interlocking Blocks (PCIB) and directed PE to prepare a detailed note showing cost implication. As per the agenda notes of the EC meeting held on 31 December 2008, the differential cost worked out based on observed data and market rates was ₹211.36/m² whereas that demanded by TRDCL was ₹304/m², which was excess by 43 *per cent*.

The EC resolved (31 December 2008) that the rates would be negotiated and fixed by the Chief Engineer (CE), the then head of office, and additional commitment would be reported to the Committee. But TRDCL demanded (19 February 2009) enhanced rate of ₹1,398.80/m², which was accepted by the CE who directed (02 April 2009) the Concessionaire to proceed with the work. The Concessionaire was allowed to carry out the work without the consent of the EC. Audit observed that the EC held on 31 December 2008 directed the CE to negotiate with TRDCL for reducing the differential cost from ₹304/m² but the CE accepted the rate of ₹1,398.80/m². The EC, which met on 03 December 2009 approved the rate and

ratified the action in having proceeded with the work. An analysis of the approved rate revealed that the rate was exorbitant as evident from the following.

- (a) Cost of laying the PCIB originally proposed (December 2008) by TRDCL was ₹711/m², but it was enhanced to ₹1,705/m² (excess 139.80 per cent).
- (b) An additional amount of ₹250/m² was added presumptively towards the cost of outer kerbs.

Hike in price of materials, need for purchase from outside the State and cost of establishment and overheads etc. were the reasons adduced for enhancement. This was not tenable as the differential rate demanded earlier by TRDCL itself was in excess of the then prevailing market rate.

The total amount paid (up to May 2016) towards differential cost was ₹13.73 crore (**Appendix 3.2.3**) and a claim of ₹97.25 lakh⁷¹ was pending payment. The excess expenditure incurred by KRFB on account of the executed quantity worked out to ₹10.74 crore⁷².

The CEO replied (September 2017) that as per the concession agreement, change of scope as agreeable to both the parties was admissible, which was approved by the EC. It was further stated (January 2018) that change in specification was made not to favour the Concessionaire. Audit observation was not regarding the change of scope/specification, but on the fact that, while sanctioning the change, KRFB allowed differential cost amounting to ₹13.73 crore, which was far in excess of the rates originally demanded by the Concessionaire, which happened due to want of diligence on the part of the KRFB authorities.

3.2.6.4 Unwarranted payment of ₹79.50 lakh for engaging traffic wardens during construction

Clause 3.1(ii) of Schedule-H of the Concession Agreement says that the Concessionaire should ensure construction with minimal inconvenience to traffic using the existing road and providing detours required. As per Article 5.8(k), the Concessionaire shall, at its own cost, make payments to the Police Department or any government body, if required, for provision of such services as are not provided in the normal course or are available only on payment. The Board shall assist the Concessionaire in obtaining police assistance against payment of prescribed charges (Article 6.2.c). No provisions in the Act/Rules enable the Board to expend for a service for which the Concessionaire was responsible. But, KRFB incurred an expenditure of ₹79.50 lakh (**Appendix 3.2.4**), during the period from 2009 to 2015 for providing traffic wardens to regulate traffic at various project sites of TCRIP. As the agreement contains clear provisions entrusting the responsibility of traffic management during implementation period, with the Concessionaire, expenditure incurred by KRFB on this account was irregular and an undue favour to the Concessionaire.

⁷¹For a quantity of 6,952.41 m².

⁷²(₹1,398.80-₹304) x 98,138.79 m² excluding VAT.

The CEO stated (January 2018) that the traffic wardens were engaged to regulate traffic at various locations in areas adjacent to project corridors where traffic congestion was observed due to works carried out for TCRIP. As the expenditure required for regulation of traffic in connection with the work was to be borne by the Concessionaire, shouldering of the same by KRFB was unwarranted.

3.2.6.5 Irregular calculation of proportionate annuity resulting in undue gain to the Concessionaire on account of interest ₹1.53 crore

The EC resolved (April 2012) to calculate the proportionate annuity for phase-II based on the quantum of work completed and the proposal was submitted to the government. This action was ratified (June 2012) by the Board. Accordingly, the proportionate annuity was fixed at ₹6.018 crore. But, in the next meeting (October 2012) EC decided to release ₹6.59 crore based on the length of the road completed. Details are tabulated in **Table 3.2.5** below:

Table 3.2.5: Details of calculated proportionate annuity

Proportionate annuity based on quantum of work completed		Proportionate annuity based on length of road completed	
Estimated project cost	₹105.60 crore	Total length of road considered	42.402 km
Cost of work completed in phase-II	₹35.81 crore	Length of road completed in phase-II	15.739 km
Percentage of completion	33.91	Percentage of completion	37.12
Proportionate annuity (17.749* x 33.91/100)	₹6.018 crore	Proportionate annuity (17.749 x 37.12/100)	₹6.59 crore

* Total half yearly annuity. Source: Records of KRFB

Proportionate annuity paid was in excess by ₹0.572 crore (₹6.590 crore - ₹6.018 crore). Considering ₹0.572 crore was paid in advance, undue gain to the Concessionaire on account of interest for the period from November 2012 to May 2017 worked out to ₹1.53 crore (**Appendix 3.2.5**)

The CEO stated that payment for phase-I was made based on the length of the road completed and this method was followed in subsequent phase also. The reply is not acceptable since the part annuity in respect of phase-I was fixed as one-third of the total annuity based on mutually agreed terms and not based on the length of the road completed.

3.2.6.6 Payment of annuity in advance resulting in undue gain to the Concessionaire ₹2.45 crore

As per Article 8.3(f) of the Concession Agreement, the Board's obligation to pay annuity shall arise subject to and only upon occurrence of Commercial Operations Date (COD). Article 1.1 defines COD, as the commercial operations date of the project, which shall be the date on which the PE issued the Provisional Certificate (PC) or the Completion Certificate. PC shall have appended a list of outstanding

items (punch list) signed jointly by the PE and the Concessionaire, which shall be completed within 90 days of the date of issue of the PC.

The PC with punch list for phase-II was issued in September 2012 based on which the commencement of annuity was due only in March 2013. In the PC it was stated that substantial completion was achieved in February 2012 itself and KRFB fixed half-yearly schedule for payment of annuity commencing from August 2012⁷³. This resulted in payment of annuity in advance ranging from three to six months in subsequent instalments. The undue financial gain to the Concessionaire worked out to ₹2.45 crore (**Appendix 3.2.6**).

The CEO stated that the delay on the part of KRFB in issuing the PC cannot be treated as a counter claim in denying the right of the Concessionaire to claim annuity from six months of completion of works and opening the road to traffic. However, had the works been completed in February 2012 itself, there would not have been appended a punch list with the PC issued in September 2012. Hence the reply was not tenable.

3.2.6.7 Undue benefit to Concessionaire on account of extra length of road claimed as constructed

Total length of the road completed and COD issued in four phases was 42.385 km as against 42.069 km as per DPR, showing an extra length of 0.316 km. While calculating the amount due to the Concessionaire on account of the extra length of road constructed, the total length was reckoned as 42.676 km with a length of 0.291 km which was not covered in the length of road for which CODs were issued. This resulted in undue benefit to the Concessionaire to the tune of ₹1.164 crore at the rate of ₹4 crore per km⁷⁴. CEO stated that the matter would be examined and recovery made.

3.2.6.8 Exorbitant rates for restoration works

Restoration work is meant for restoring project facilities to their original position consequent on cutting by utility agencies/public. As per Article 3.2(d) of the concession agreement, restoration works shall be carried out by the Concessionaire and the amounts collected from utility agencies/public as restoration charges would be reimbursed. The rates for restoration charges proposed by TRDCL and approved in the 11th meeting of the EC when compared with the rates prevailing in State PWD based on IRC/MoRTH⁷⁵ specifications, were as shown in **Table 3.2.6**:

⁷³First instalment was paid in November 2012.

⁷⁴As per the technical audit report cost per km worked out was ₹4 crore.

⁷⁵IRC-Indian Roads Congress. MoRTH-Ministry of Road Transport and Highways.

Table 3.2.6: Comparison of rates with that of State PWD

Restoration charges realised by KRFB from 01 April 2008 onwards (₹per m ²)		Prevailing rates of restoration in PWD (NH) from 2012 onwards (₹per m ²)	
Completed carriageway	7562.30	BT Surface	3854.00
Uncompleted carriageway	5504.72		
Unpaved footpath	1713.00	Berm	264.00
		shoulder	946.00

Source: Records of KRFB and government circulars

As per Schedule-G of the Agreement, the pavement was to be designed as per IRC/MoRTH specifications, and only if the codes and standards applicable were silent on any aspect, alternate standards proposed by the Concessionaire could be adopted. Disregarding this, the Concessionaire put forth its own methodology for restoration works by including excessive quantities, costlier materials, unnecessary items etc., which was accepted by KRFB. The rates were boosted up by including unnecessary provisions like plain cement concrete below flexible pavement, trenching in excessive depths, costlier river sand in place of sand for filling, excavation and filling with river sand under paved footpath generally constructed over drains etc. The irrational measure resulted in fixing exorbitant rates for restoration works entailing financial burden to the utility agencies/public and bestowing undue benefit to the Concessionaire.

The justifications given by TRDCL were urgency of works, excessive cost due to lesser quantities and need for safety arrangements. Though the concession agreement stipulates prompt restoration of the project facilities, the inspection reports of the IE and the notices issued by KRFB revealed that TRDCL did not attend to the restoration works in time. Joint site verification conducted (July 2017) by the Audit team also revealed that restoration works in 20 locations along various corridors reported by the IE during the period November 2016 to May 2017 were still lying unattended. The CEO stated (January 2018) that the surface could not be restored to its original condition since proper compaction could not be achieved for small cuttings resulting in settlement of carriageway and so the Concessionaire had to undertake several restoration works at its cost. This indicates that the restoration works carried out by the Concessionaire were sub-standard, which cannot be adduced as a reason for excessive rates for restoration.

3.2.7 Conclusion

- Out of the several sources of fund specified in the Act, only the share from MVT was provided, that too partially.
- KRFB deployed its funds for purposes, which were not included in its objective.
- The execution of the PPP project was without ensuring financial propriety.
- KRFB failed in ensuring timely restoration of project facilities.

