

**Report of the
Comptroller and Auditor General of India
on
Toll Operations of
National Highways Authority of India
in Southern India**



SUPREME AUDIT INSTITUTION OF INDIA
लोकहितार्थ सत्यनिष्ठा
Dedicated to Truth in Public Interest

Union Government (Commercial)
Ministry of Road Transport and Highways
No. 7 of 2023
(Compliance Audit)

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Laid on the table of Lok Sabha and Rajya Sabha on.....

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Preface

This Report has been prepared for submission to the Government under the provisions of Section 19-A of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971.

This Report of the Comptroller and Auditor General of India contains the results of compliance audit of "Toll Operations of National Highways Authority of India in Southern India".

Audit covered the period from April 2017 to March 2021, and the Audit findings have been subsequently updated based on National Highways Authority of India/Ministry's reply (July 2021) to the draft report.

The Audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

Executive Summary

Executive Summary

About this audit

National Highways Authority of India (NHAI) was entrusted with the responsibility of development, maintenance, management and matters related to National Highways. NHAI developed National Highways (NHs) under different modes of execution viz., Built, Operate and Transfer (BOT-Toll); Built, Operate and Transfer (BOT-Annuity); Engineering, Procurement and Construction (EPC) and Hybrid Annuity Mode (HAM).

Audit on Toll operations was conducted with respect to toll collection, maintenance of National Highways and availability of amenities on National Highways. Audit randomly selected 41 Toll Plazas (Public Funded: 20 and BOT(Toll): 21) covering 37 NH stretches in five Southern States of India namely Tamil Nadu, Karnataka, Andhra Pradesh, Telangana and Kerala. National Highways of 0.27 lakh km (19.85 *per cent*) were spread out in the Southern States out of 1.36 lakh km (March 2021) of NHs built across India. The Southern States contributed ₹28,523.88 crore (28.75 *per cent*) of the toll revenue earned by NHAI and its Concessionaires during the period from 2017-18 to 2020-21.

A summary of significant audit findings is given below:

Toll Collection

- Due to non-implementation of NH Fee Amendment Rules 2013 dated 16 December 2013 with respect to upgradation of existing four lane highways, NHAI continued to collect user fee in three toll plazas (namely Nathavalasa, Chalageri, Hebbalu) during delayed period of construction though the amended rule stated that no user fee shall be levied for the delayed period. The road users continued to pay user fee during the delayed period of the projects. This resulted in collection of user fee of ₹124.18 crore during the period May 2020 to March 2021 in violation of the amended toll fee rules. Further, NHAI delayed reduction in user fee to 75 *per cent* of fee applicable in case of Paranur toll plaza and in case of Madpam toll plaza annually revised the user fee despite the stipulation of no revision of user fee during upgradation as per the amended Fee Rules. NHAI collected user fee of ₹7.87 crore from road users on the two toll plazas from August 2018 to March 2021. Thus toll collection in these five toll plazas led to undue burden of ₹132.05 crore on road users.

(Para 3.1.1)

- NH Fee Second Amendment Rules 2011 dated 12 October 2011 stated that NHAI shall collect user fee for use of permanent bridges constructed after 11 September 1956. Further, NH Fee Amendment Rules 2014 dated 16 January 2014 stipulated that the rate of fee for use of standalone structure having length of more than 60 meters shall be calculated by converting its length into the factor of 10. Audit observed that under Paranur Public Funded Toll Plaza, a bridge (with length of 630 meters on Left Hand Side) was constructed in 1954 and user fee was being

collected for this Left Hand Side bridge by converting the length into equivalent length of 6.30 km. However, as the bridge was constructed prior to 1956, the user fee was not to be levied. Thus, NHAI collected excess toll fee of ₹22.10 crore from road users during 2017-2018 to 2020-2021.

(Para 3.1.2)

- Audit observed that there was delay in implementation of the amendment in NH Fee Rules, 2008 with respect to charging of user fee for elevated bridges/structures of more than 60 meters length by converting its length with multiple of 10 on Madurai-Kanyakumari stretch of NH 44 in Tamil Nadu. This resulted in short collection of user fee amounting to ₹16.68 crore.

(Para 3.1.3)

- Sub-rule 2 of Rule (3) of NH Fee Rules, 2008 provided that collection of fee shall commence within 45 days from the date of completion of the section of national highway, permanent bridge, bypass or tunnel, as the case may be, constructed through a public funded project. Audit observed delays in toll collection as per the time limits prescribed by NH Fee Rules, 2008 in four stretches of public funded projects which led to loss of revenue to NHAI amounting to ₹64.60 crore.

(Para 3.2.1)

- NHAI lost revenue of ₹133.36 crore due to lack of provision for revenue sharing in Concession Agreements for two sections of NH 44 in Tamil Nadu constructed by NHAI and handed over to BOT Concessionaires for toll collection.

(Para 3.3)

- MoRTH announced (March 2014) a scheme for deferment of premium payments for stressed road projects of the BOT(Toll) Concessionaires who were paying premium to NHAI from the toll revenue earned. As per the scheme, BOT(Toll) Concessionaires were required to provide appropriate Bank/Corporate Guarantee to the extent of maximum difference between premium payable as per contracted agreement and proposed under the revised payment schedule to adequately protect the interest of NHAI/Government. However, Audit observed that NHAI failed to collect negative grant/premium and interest thereon amounting to ₹295.78 crore from a Concessionaire. Also, NHAI waived off Corporate Guarantee for an amount of ₹1,073.55 crore in respect of a Concessionaire and did not collect Bank Guarantee for an amount of ₹43.93 crore and premium payable with interest on deferred premium totalling ₹18.29 crore as on March 2021 from another Concessionaire.

(Paras 3.4.1, 3.4.2 and 3.4.3)

Audit recommendations:

- ***Ministry may ensure that amendments to NH Fee Rules are adhered by NHAI in implementation of the user fee rates thereby ensuring that undue burden to***

road users is avoided and NHAI/Concessionaires are not allowed to violate the NH Fee Rules in case of delays in completion of projects.

- *MoRTH/NHAI may ensure that Toll Plazas are constructed in time and toll collection commences within 45 days from date of completion of project.*
- *Suitable clauses for revenue sharing by BOT Concessionaires may be included in the bid documents while awarding the contracts for operation and maintenance of national highways stretches built by NHAI.*
- *NHAI may ensure to protect the financial interest of the Government by obtaining appropriate Bank/Corporate Guarantees as per the terms and conditions of the deferment scheme or the conditions attached to the sanction letter.*
- *In Escrow Agreements, NHAI may ensure the priority in payment of NHAI dues over the Concessionaire and lender bank. NHAI may consider two separate independent banks as an Escrow banker/agent and as a lender bank.*
- *Ministry may review the circumstances leading to non-obtaining of Bank /Corporate Guarantees, fix responsibility and take appropriate action in these cases.*

Maintenance of National Highways

- Audit observed that there was delay in completion of overlay works in case of seven stretches for which delay ranged from 2 to 76 months. In case of three stretches, the overlay works were yet to be taken up (March 2021) even after lapse of 3 to 69 months from the due date of completion of overlay. NHAI also failed to recover ₹391.27 crore from nine BOT(Toll) Concessionaires as damages for not taking up overlay, delay in completion of overlay and ₹53.84 crore as risk and cost damages from one Operation and Maintenance Concessionaire.

(Para 4.1)

- NHAI failed to award Annual Maintenance Contracts in a time bound manner in respect of five Public Funded stretches. BOT(Toll) Concessionaires failed to conduct regular maintenance works in four stretches. NHAI also failed to recover an amount of ₹174.63 crore from these four BOT(Toll) Concessionaires for non-maintenance of the stretches.

(Paras 4.3.1 and 4.3.2)

- Audit observed that 37.95 *per cent* (74 out of 195 black spots) of long term rectifications were pending (March 2021) with respect to the black spots identified for the period 2011-14. Similarly, long term rectifications and short term rectifications were not carried out (March 2021) for 60.11 *per cent* (886 out of 1,474 black spots) and 17.70 *per cent* (319 out of 1,802 black spots) of the blackspots identified for the period 2015-18.

(Para 4.4)

- Road Survey using Network Survey Vehicle was not conducted in respect of six stretches. Further, it was also observed that overlay works were not taken up (March 2021) despite the poor condition of the NHs in four stretches where road survey using Network Survey Vehicle was conducted.

(Para 4.8)

Audit recommendations:

- *NHAI should ensure timely completion of major/periodical maintenance works of the NHs as per the Concession Agreements to ensure smooth riding quality to the road users. NHAI may create a mechanism to periodically report to the NHAI's Board of Members about delays in taking up maintenance work by the Concessionaires.*
- *NHAI may ensure timely appointment of Annual Maintenance Contractors for Public Funded Projects and also ensure that the Concessionaires are carrying out the routine maintenance of NHs as per the respective Concession Agreements in case of BOT stretches.*
- *NHAI may ensure that all the identified black spots are rectified at the earliest.*
- *NHAI may ensure that regular road survey using Network Survey Vehicles are conducted as per the Ministry's guidelines and the deficiencies noticed are rectified at the earliest to maintain the quality of NHs.*

Availability of Facilities and Amenities to Road Users

- MoRTH directed (August 2016) NHAI to provide toilets under Swachh Bharat Mission on both sides of all Toll Plazas. These toilets were to be properly maintained and made available round the clock. However, Audit observed that out of 41 Toll Plazas, toilets were not constructed in five Toll Plazas and were constructed only on one side in 13 Toll Plazas. In three Toll Plazas, toilets were constructed but were found non-operational.

(Para 5.1)

- NHAI decided (November 2017) to develop facility of Highway Nest Mini on both sides of Toll Plazas to facilitate the road users. Highway Nest Mini was to have essential facilities i.e. toilets, water ATM, packaged food and hot and cold beverages. These facilities were to be operationalised at all Toll Plazas by March 2018. However, Audit observed that out of 41 Toll Plazas, Highway Nest Mini were not constructed in 11 Toll Plazas and constructed only on Right Hand Side of NH in one Toll Plaza and were not operationalised after construction in case of six Toll Plazas.

(Para 5.2)

- MoRTH emphasised the need for landscaping and plantation of trees along the NHs for reducing the adverse effects of air and noise pollution, soil erosion and to provide shade. Landscaping and plantation of trees along the NHs had to be done

as per the provisions of Green Highways (Plantation, Transplantation, Beautification and Maintenance) Policy - 2015 and Indian Roads Congress Special Publication: 21-2009 - Guidelines on landscaping and tree plantation. Audit observed that on the total project length of 8,814 km under five Regional Offices, the shortfall in avenue and median plantations was 65.63 *per cent* and 34.65 *per cent* respectively from the set target plantation (March 2021).

(Para 5.3)

- NHAI issued guidelines on strengthening the Incident Management Services (Policy Guidelines No. 12.19 dated 20 March 2018) which *inter alia* included uniform specifications for Ambulance and Patrol vehicles to strengthen and standardise the operations of Incident Management Services available on NHs. Inspection of sample vehicles and review by Audit revealed that Incident Management Services vehicles at 14 Toll Plazas (Six Public Funded and eight BOT(Toll) Toll Plazas) were not upgraded in line with NHAI Policy. The vehicles were old, overused and condemnable; the ambulance was of smaller dimension against norms and envisaged equipment in Patrol Vehicles were not available.

(Para 5.4)

Audit recommendations:

- ***NHAI needs to ensure that the benefits of Swachh Bharat Mission toilets are made available to road users by speeding up the processes of land acquisition, construction, award of contracts and continuous supervision of their maintenance.***
- ***NHAI needs to ensure that the facilities of Highway Nest Mini are made available to road users by speeding up the process of land acquisition, construction, award of contracts and making them operational.***
- ***NHAI may ensure that the Incident Management Services vehicles are upgraded/strengthened as per its policy guidelines.***

CHAPTER I
INTRODUCTION

Chapter I

Introduction

1.1 Role of National Highways Authority of India

National Highways Authority of India (NHAI) was constituted by the Government of India (GoI) as per the National Highways Authority of India Act, 1988 under the administrative control of the Ministry of Road Transport and Highways (MoRTH/Ministry) and it became operational in February 1995. It was entrusted with the responsibility of development, maintenance, management and matters related to National Highways (NHs). The vision of NHAI is to provide and maintain the NHs network at global standards in the most cost effective manner and which, in turn, would promote economy and quality of life of the people and meet user's expectations. The NHAI's mission is to develop, maintain and manage NHs vested in it by the Government, regulate and control the plying of vehicles on the NHs and to develop and provide consultancy and construction services and carry on research activities on development, maintenance and management of NHs. The National Highways Act, 1956 was amended in 1997, to empower GoI to levy tolls on the road users for using the NHs built from public or private funds or a mix of both.

1.2 Organisational Setup of NHAI

NHAI is headed by a Chairman, with Headquarters at New Delhi, which implements the projects through Regional Offices¹ spread across the country. Regional Offices are headed by Regional Officers who supervise Project Implementation Units attached to them. Project Implementation Units are headed by Project Directors who implement the projects, operate and maintain the completed stretches in their jurisdiction as per the Concession Agreements, guidelines and instructions of MoRTH.

1.3 Components of project cost

Toll operations on NHs were carried out by NHAI by using various models viz.,

- Build, Operate and Transfer (BOT) – Toll: Wherein construction, maintenance and toll collections were done by Concessionaire. The toll is collected and retained during the concession period by Concessionaire. Premium/negative grant² is paid by the Concessionaire to NHAI based on the bidding. However, wherever the project is not viable, NHAI pays Viability Gap Funding upto maximum of 40 *per cent* of total project cost which is determined at the time of bidding. In some of BOT(Toll) contracts, the toll revenue is shared with NHAI as per the revenue sharing clause in the concession agreement. After the concession period is over, the NH stretch is handed over to NHAI.

¹ 24 Regional Offices across country including six Regional Offices at Chennai, Madurai, Thiruvanthapuram, Bengaluru, Vijayawada and Hyderabad in Southern India (March 2021).

² A grant is an offer amount to contractors (Concessionaires) for projects which will not be able to recover their investments in a reasonable timeframe. However, a negative grant/premium is a bid amount offered to be paid to NHAI by a bidder (contractor) to win a contract it finds potentially lucrative.

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- Engineering, Procurement and Construction (EPC) model wherein construction, maintenance and toll collections were done by NHAI itself; also known as Public Funded Projects.
- Build, Operate and Transfer (BOT) - Annuity: Wherein construction and maintenance were done by Concessionaire. Toll collection was done by NHAI and pre-determined Annuity payments were made to the Concessionaire by NHAI.
- Hybrid Annuity Mode (HAM) wherein both NHAI and private sector share the project cost in the ratio of 40:60. Toll was collected by NHAI and Annuity and Operation & Maintenance payments were made to the Concessionaire by NHAI.

CHAPTER II
MANDATE, AUDIT SCOPE AND
METHODOLOGY

Chapter II

Mandate, Audit Scope and Methodology

The Compliance Audit Report has been prepared under the provisions of Section 13 of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. The Audit has been carried out in line with the Regulations on Audit and Accounts (Amendments), 2020 of the Comptroller and Auditor General of India.

2.1 Scope of Audit and Sampling

Audit was conducted in five Southern States of the country namely Tamil Nadu, Karnataka, Andhra Pradesh, Telangana and Kerala. The Southern States were selected for conducting audit on geographical area basis. Audit of toll operations of NHAI was conducted with respect to toll collection, maintenance of National Highways and availability of amenities on National Highways. Audit did not, however, cover the tendering and execution of construction works of National Highways including Toll Plazas.

National Highways of 0.27 lakh km (19.85 *per cent*) were spread out in the Southern States out of 1.36 lakh km (March 2021) of NHs built across India. The Southern States contributed ₹28,523.88 crore (28.75 *per cent*) of the toll revenue earned by NHAI and its Concessionaires during the period from 2017-18 to 2020-21 (**Annexure-I**).

There were six Regional Offices, 35 Project Implementation Units covering 154 Toll Plazas operating in these States (September 2020). Out of these 154 Toll Plazas, Audit randomly selected 41 Toll Plazas³ having 21 Build, Operate and Transfer (Toll) Toll Plazas, 20 Public Funded Toll Plazas which included six Build, Operate and Transfer (Annuity) Toll Plazas and four Hybrid Annuity Mode Toll Plazas for review of toll operations. There were 37 stretches (18 Public Funded stretches and 19 BOT stretches) under 41 selected Toll Plazas.

The field audit was conducted from October 2020 to January 2021 with further updation during December 2021 and January 2022 covering the period 2017-18 to 2020-21. Audit examined the records maintained at Regional Offices/Project Implementation Units of NHAI, Independent Engineers' Offices and the Toll Plazas⁴.

2.2 Audit Objectives

The Audit Objectives were to assess whether:

- i) the system of toll collection and its remittance was as per applicable mandates, internal systems and procedures of NHAI.
- ii) the maintenance of NHs was done as per the mandated terms and the systems/procedures of NHAI were robust to ensure the compliance of the same.

³ Under jurisdiction of 23 Project Implementation Units in six Regional Offices.

⁴ Audit findings on maintenance of national highways covered the entire stretch including Toll Plazas on the stretch even though not included in selected 41 Toll Plazas.

- iii) mandatory facilities and amenities were available (24x7) to the road users as per the terms and conditions of the agreements and NHAI had established systems and procedures to ensure the same.

2.3 Audit Criteria

The Audit Criteria includes:

- i) National Highways Act, 1956, National Highways Authority of India Act, 1988 and the National Highways (Rate of Fee) Rules, 1997 (NH (RoF) Rules, 1997).
- ii) National Highways Fee (Determination of Rates and Collection) Rules, 2008 (NH Fee Rules, 2008) and amendments thereof.
- iii) Manuals and Guidelines, Notifications, Circulars of MoRTH, NHAI and Indian Road Congress.
- iv) Concession Agreements, Operation and Maintenance Agreements, User Fee Collection Agreements, Agreements with Independent Engineer/Authority Engineer, System Integrators etc.

2.4 Audit Methodology

An Entry Meeting was held with NHAI on 18 September 2020 wherein the Audit objectives, criteria, scope etc., were explained to the Auditee and cooperation for the conduct of Audit was solicited. Thereafter, examination of records of NHAI was taken up at Regional Offices and Project Implementation Units. The Draft Audit Report was issued to the Management on 10 March 2021 and Exit Meeting was conducted on 26 March 2021. The Draft Audit Report was issued to the Administrative Ministry on 1 April 2021. NHAI/Ministry furnished its reply in July 2021.

2.5 Acknowledgment

Audit acknowledges the cooperation extended by the NHAI for timely completion of audit.

CHAPTER III
TOLL COLLECTION

Chapter III Toll Collection

MoRTH implements NH projects and capital cost of construction, operations and maintenance expenses of NHs are recovered from the road users by levying toll (User Fee) by NHAI and its Concessionaires. The toll fee is fixed, levied, revised and regulated under the provisions of NH (RoF) Rules, 1997 and NH Fee Rules, 2008 and subsequent amendments there to.

Audit observed non-compliance of rules and statutory guidelines in collection of toll fee by NHAI and/or its Concessionaires in toll operations of Toll Plazas. These issues are discussed below.

3.1 Incorrect application of amendments of National Highways Fee (Determination of Rates and Collection) Rules, 2008

Audit observed incorrect application of amendments in NH Fee Rules, 2008 in contravention to the MoRTH notifications in eight Toll Plazas⁵ out of sampled 41 Toll Plazas. Further details of these cases are provided in sub-paras 3.1.1 to 3.1.4. A case of non-recovery of maintenance cost from a Concessionaire is covered in sub-para 3.1.5.

3.1.1 Delay/non-reduction of toll fee to 75 per cent on NHs being upgraded and collection of toll fee after scheduled completion date in cases of delay in the NHs upgradation

MoRTH notified (16 December 2013) amendments in NH Fee Rules, 2008 and as per the notification, *inter alia*, a new sub-rule (9) of rule (4) of NH Fee Rules, 2008, the rate of fee shall be 75 per cent of the fee applicable without any annual revision while upgrading the four lane highway to six lane highway till completion of the project. No user fee shall be levied for the delayed period between the dates of scheduled completion and actual completion of the project and provisional completion of the project shall not be treated as completion of the project. Audit observed that NHAI failed to implement the above amendment in respect of five Toll Plazas as discussed below.

a) In respect of three Hybrid Annuity Mode Toll Plazas (wherein user fee is collected by NHAI) as detailed in Table 1, NHAI did not stop collection of user fee despite non-completion of the highways upgradation projects on the scheduled completion dates. The projects were still under execution (March 2021). This resulted in collection of user fee of ₹124.18 crore during the period May 2020 to March 2021 in violation of the amended toll fee rules (**Annexure-II A and II B**).

⁵ *Public Funded: Nathavalsala, Chalageri, Hebbalu, Paranur, Madapam and Kappalur; BOT (Toll): Bollapalli and Tanguturu.*

Table 1: Collection of user fee from road users despite delayed completion of upgradation of highways

Sl. No.	Name of the Toll Plaza and stretch	Scheduled completion date	Toll collection Period	Toll Amount (₹ in crore)
1.	Nathavalasa Toll Plaza Ranastalam to Anandhapuram stretch of NH 16 in Andhra Pradesh	13 May 2020	May 2020 to March 2021	48.23
2.	Chalageri Toll Plaza Davangere to Haveri stretch of NH 48 in Karnataka	24 July 2020	July 2020 to March 2021	40.26
3.	Hebbalu Toll Plaza Doddasiddavanahalli to Hadadi stretch of NH 48 in Karnataka	24 June 2020	June 2020 to March 2021	35.69
				124.18

In respect of Nathavalasa Hybrid Annuity Mode Toll Plaza, NHAI/Ministry stated (July 2021) that fee was increased to 100 *per cent* from 24 September 2020 after issuing Provisional Certificate of Commercial Operation Date as against the scheduled completion date of 13 May 2020.

The reply is not acceptable as the amended rule clearly stated that the provisional completion of the project shall not be treated as completion of the project. Hence, Provisional Commercial Operation Date should not be treated as completion of the project and no toll fee should have been levied⁶ for delayed period between scheduled and actual completion date.

NHAI/Ministry replied (July 2021) that in Chalageri and Hebbalu Toll Plazas, the delay in completion of work was not attributable to the Concessionaire/NHAI and, therefore, extension of scheduled completion date was given till December 2020 and January 2021 respectively and entire work was likely to be completed by September 2021.

The reply of NHAI/Ministry was not acceptable as the provisions of the amended rule {sub-rule (9) of rule (4) of NH Fee Rules, 2008} did not provide any relaxation for delayed period of completion of the road project and stated that no toll fee shall be levied for delayed period between scheduled and actual completion date.

b) In respect of Paranur Public Funded Toll Plaza (wherein user fee is collected by NHAI) on Tambaram to Tindivanam stretch of NH 32 in Tamil Nadu, expansion of existing four lane to eight lane in two sections commenced in July 2018 (Section I - Irumbilyur to Vandalur, 2.3 km) and in March 2019 (Section II - Vandalur to Guduvanchery, 5.3 km). Section I was completed in March 2020 and work was in progress (March 2021) in Section II. NHAI did not reduce the toll fee to 75 *per cent* in

⁶ NHAI levied user fee for the delayed period (from scheduled completion date to actual completion date). As per the NH Fee Rules, user fee was not chargeable during the delayed period.

respect of these sections resulting in excess collection of toll amounting to ₹6.54 crore from August 2018 to March 2021 (**Annexure-II C**). However, subsequent to the audit observation, toll was reduced to 75 per cent w.e.f. April 2021 in respect of Section II.

NHAI/Ministry (July 2021) replied that during the annual revision of rates w.e.f. April 2021 to March 2022, the user fee had been reduced to 75 per cent for Section II. Thus, subsequent to the audit observation, toll was reduced to 75 per cent w.e.f. April 2021 in respect of Section II.

Further, in respect of Madapam Hybrid Annuity Mode Toll Plaza on Nandigama to Srikakulam stretch of NH 16 in Andhra Pradesh, a project was taken up for six lane upgradation and NHAI reduced the user fee to 75 per cent from commencement of work in January 2019. However, NHAI revised the user fee in April 2019 despite the stipulation of not to revise the user fee during upgradation to six laning. The project was still under construction (March 2021). As a result, excess toll of ₹1.33 crore was collected by NHAI from April 2019 to March 2021 (**Annexure-II D**). However, subsequent to the audit observation, toll was reduced to 75 per cent w.e.f. April 2021.

Thus, due to non-implementation of amended toll fee rules during upgradation of existing four lane highways, NHAI collected user fee of ₹132.05 crore from road users (**Annexure-II A to II D**) leading to undue burden on road users.

3.1.2 Excess toll collection due to incorrect inclusion of old Palar Bridge (Left Hand Side carriageway i.e. towards Tindivanam) in toll rate calculation

MoRTH notified (October 2011) an amendment to National Highways Fee (Determination of Rates and Collection) Rules, 2008 stating that toll fee for use of permanent bridges constructed after 11 September 1956 shall be applicable. Further, MoRTH notified (January 2014) an amendment in the NH Fee Rules, 2008 stating that the rate of fee for use of standalone structure as well as structure forming part of linear highway/expressway having length of more than 60 meters shall be calculated by converting its length into the factor of 10.

Audit noticed that on Tambaram-Tindivanam stretch (52.17 km) of NH 32 in Tamil Nadu (Paranur Public Funded Toll Plaza, wherein user fee is collected by NHAI) there were two separate 630 meters long bridges (Left and Right Hand Sides) constructed across Palar River and they were 50 metres apart from each other. The bridge towards Tindivanam (Left Hand Side) was constructed in 1954. The toll fee was not applicable for the use of this bridge under NH Fee Rules, 2008.

Figure 1: Palar Bridge (Separate Left and Right Hand Side bridges)



Audit observed that toll was collected for this Left Hand Side bridge towards Tindivanam by converting the length into equivalent length of 6.30 km w.e.f. 1 April 2014. This resulted in excess toll collection of ₹22.10 crore⁷ from road users during 2017-2018 to 2020-2021.

Based on the audit observation, NHAI/Ministry (July 2021) stated that the length of one side of Palar Bridge constructed in 1954 has been excluded from toll fee calculation for Paranur Toll Fee Plaza with effect from 1 April 2021.

Recommendation No. 1

Ministry may ensure that amendments to NH Fee Rules are adhered by NHAI in implementation of the user fee rates thereby ensuring that undue burden to road users is avoided and NHAI/Concessionaires are not allowed to violate the NH Fee Rules in case of delays in completion of projects.

3.1.3 Short collection of toll due to non-implementation of NH fee amendment rules for charging toll fee by NHAI for bridges on NH 44 in Tamil Nadu

NH Fee Rules, 2008 provided fixed slab rates of fee for different categories of vehicles for use of permanent bridge, bypass or tunnel constructed with the capital cost incurred for construction exceeding ₹10 crore. Later, MoRTH notified (January 2014) an amendment in the NH Fee Rules, 2008 that the rate of fee for use of standalone structure as well as structure forming part of linear highway/expressway having length of more than 60 meters shall be calculated by converting its length into the factor of 10.

a) The above amended rule to convert the structure length in kilometers with a multiplying factor of 10 was not implemented in respect of elevated bridges/structures on NH 44 in Tamil Nadu. Toll fee was not revised considering the length of the bridges to 10 times the normal rates of road stretch till May 2018 since amendment in the rules in case of 11 major structures⁸ (Bridges more than 60 meters) falling under Kappalur Public Funded Toll Plaza and three other Public Funded Toll Plazas on Madurai-Kanyakumari stretch of NH 44 in Tamil Nadu. This resulted in short collection of toll revenue of ₹12.33 crore by NHAI during the period from April 2017 to May 2018 (Annexure-III A).

⁷ Excess collection for one Section of Palar Bridge: $\{(Toll\ collected\ during\ 2017-2018\ to\ 2020-2021 \div Total\ length\ in\ km\ of\ the\ stretch\ for\ which\ toll\ collected) \times (Total\ length\ in\ km\ of\ Palar\ Bridge\ included\ in\ the\ toll\ calculation\ by\ converting\ its\ length\ into\ the\ factor\ of\ 10)\} \div 2 \{(\text{₹}366.05\ crore \div 52.17\ km) \times (0.630\ km \times 10)\} \div 2 = \text{₹}22.10\ crore$

⁸ Structures (Bridges) under Kappalur Public Funded Toll Plaza at (1) Chainage 2.698 to 3.102 (0.405 km) and (2) Chainage 50.964 to 51.066 (0.101 km); under Etturvattam Public Funded Toll Plaza at (3) Chainage 69.914 to 70.080 (0.167 km), (4) Chainage 76.160 to 76.240 (0.079 km) and (5) Chainage 78.668 to 78.904 (0.236 km); under Salaipudhur Public Funded Toll Plaza at (6) Chainage 127.390 to 127.510 (0.120 km), (7) Chainage 129.564 to 129.784 (0.220 km), (8) Chainage 131.123 to 131.213 (0.090 km), (9) Chainage 138.915 to 139.111 (0.197 km) and (10) Chainage 153.140 to 153.360 (0.220 km) and under Nanguneri Public Funded Toll Plaza (11) Chainage 196.850 to 196.950 (0.100 km) totalling 1.935 km

NHAI/Ministry (July 2021) accepted that for Madurai-Kanyakumari stretch there was delay in including the structures and the same were included in the user fee notification w.e.f. 18 May 2018.

The reply confirmed that there was delay in inclusion of the structures in toll rates.

b) Besides the above 11 major structures, a major bridge at km 33.150 (having length of 61.60 meters) under Kappalur Toll Plaza was considered as normal road length and normal toll rates were charged instead of considering the multiplying factor of 10 times to the actual length applicable to structures beyond 60 meters till October 2020. The short collected toll revenue by NHAI was calculated as ₹1.63 crore from April 2017 to October 2020 (**Annexure-III B**). In another instance, a Rail Over Bridge at km 0.590 on the same stretch with a length of 131 meters and approach road to the Rail Over Bridge were constructed in October 2012 and October 2017 respectively. Toll collection considering Rail Over Bridge commenced from April 2018. However, while implementing the toll collection from April 2018, normal rates were applied instead of applying multiplication factor of 10 times applicable to structures beyond 60 meters. Due to incorrect application of toll rates, the short collected toll revenue by NHAI was calculated as ₹2.72 crore from April 2018 to October 2020 (**Annexure-III B**).

NHAI/Ministry stated (July 2021) that additional structures (Major bridge at km 33.150 and Rail Over Bridge at km 0.590) on Kappalur Toll Plaza, which were excluded earlier were included in Toll-Operate-Transfer agreement for the stretch which was taken over by Toll-Operate-Transfer Concessionaire w.e.f. 19 October 2020.

The reply confirmed that NHAI incurred loss due to delay in adding structures in toll calculation till conversion of the stretch from Public Funded to Toll-Operate-Transfer mode.

3.1.4 Non-collection of applicable higher fee for overloaded vehicles

Rule 10 of NH Fee Rules, 2008 stipulated that vehicle which was loaded in excess of the permissible load shall be liable to pay fee at such rate applicable to the next higher category of vehicle. The above principal rule was amended (December 2013) and the amended rule stipulated that driver/owner of the overloaded vehicle is liable to pay fee equal to 10 times of the fee applicable to such category of vehicle. NHAI directed (May 2014) that the above amended rule was applicable to all the Concession Agreements irrespective of their date of execution. NHAI policy circular further stated (August 2017) that the penalty amount being collected from overloaded vehicles may be regulated as per provisions of respective Concession Agreement i.e., if the Concession Agreement provides for collecting next higher category rate for an overloaded vehicle, the difference of fee (10 times of applicable fee of vehicle category minus rate of next higher vehicle category) shall be remitted to NHAI and where the amended fee rule is part of Concession Agreement, such amount may be retained by the Concessionaires.

The above amended rule was further amended (September 2018) and prescribed the fee for the overloaded vehicles according to the percentage of overloading as detailed in Table 2:

Table 2: Fee rate to be levied on overloaded vehicles

Percentage of excess load over maximum permissible gross vehicular weight	Multiplying factor to base rate of fee	Toll Fee for Overloaded Vehicle
0 to 20	Two	Fees applicable for such category of (mechanical vehicle) X (Multiplying factor)
>20 to 40	Four	
>40 to 60	Six	
>60 to 80	Eight	
>80 and above	Ten	

In order to implement the above penalties, In-motion Weigh Bridge and Static Weigh Bridge were required to be installed and integrated into the Toll Management Software.

a) In respect of 20 Public Funded Toll Plazas selected in audit, the installation and integration of In-motion Weigh Bridges and Static Weigh Bridges work was assigned to Indian Highways Management Company Limited⁹ (IHMCL) by NHAI. IHMCL, in turn, appointed System Integrators for installation and integration of the Weigh Bridges. Interestingly, NHAI agreement with IHMCL did not have any penalty clause although IHMCL agreements with System Integrators had penalty clause for delay in installation and integration of the Weigh Bridges.

On joint inspection of Audit team with NHAI officials during the course of audit (October 2020 to January 2021), it was observed that Weigh Bridges were not installed in 11 Toll Plazas¹⁰. In remaining nine Toll Plazas¹¹, In-motion Weigh Bridge/Static Weigh Bridge were installed but either not integrated to Toll Management Software or not in working condition. Thus, applicable fee for overloaded vehicles was not charged in these Public Funded Toll Plazas.



⁹ Joint Venture company formed by NHAI and its Concessionaires & financial institutions

¹⁰ Paranur, Athur, Lembalakudi, Kumbalam, Rolmamda, Gamjal, Manoharabad, KN Hundy, Kannolli, Harval and Pottipadu

¹¹ Kappalur, Hebbalu, Chalageri, Madapam, Nathavalasa, Vempadu, Unguturu, Eethakota, Krishnavaram

b) In-motion Weigh Bridge/Static Weigh Bridge were installed in all 21 BOT(Toll) Toll Plazas selected in audit but were not integrated with Toll Management Software in all the Toll Plazas. On joint inspection of Audit team with NHAI officials during the course of audit (October 2020 to January 2021) the following deficiencies were observed:

- The Concessionaires were not collecting applicable fee from overloaded vehicles in 13 Toll Plazas¹².
- In Kamkole Toll Plaza and Panthangi Toll Plaza, Concessionaires collected only the rate applicable to next higher category of vehicle instead of charging the rate by applying multiplying factor as per the percentage of excess load carried by vehicles.
- It was also noticed in respect of two BOT(Toll) Toll Plazas namely Bollapalli Toll Plaza and Tanguturu Toll Plaza (Date of Concession Agreement: July 2010), the Concessionaires collected fee from overloaded vehicles amounting to ₹4.47 crore (Bollapalli Toll Plaza : ₹3.42 crore and Tanguturu Toll Plaza: ₹1.05 crore)¹³ during the period from 2017-18 to 2020-21. However, the Concessionaires retained the same without remitting the penalty (differential fee) to NHAI in violation of the NHAI instructions of August 2017.

NHAI/Ministry (July 2021) stated that there were various bottlenecks to implement the guidelines in toto. The bottlenecks to fully implement the guidelines/rule position for imposing the applicable penalties and recovery will be resolved by NHAI with cooperation of the respective State Governments. NHAI/Ministry further replied that supplementary agreements need to be entered with the Concessionaires for collection of overload penalty as per latest guidelines to avoid legal complications. Regarding non-remittance of penalties recovered by the Concessionaire, it was stated that recovery is being pursued and if permitted this would be adjusted against future payment of grant (Viability Gap Funding) payable to the Concessionaires.

NHAI/Ministry reply indicated the lack of preparedness and delay by NHAI in implementation of provisions for levy of fee for overloaded vehicles as per the amended fee rules.

Recommendation No. 2

NHAI may ensure that In-motion Weigh Bridges and Static Weigh Bridges are installed and integrated to Toll Management Software and correct fee is collected for the overloaded vehicles. NHAI may issue detailed Standard Operating Procedure for implementation of amended rules by signing supplementary agreements for collection and remittance of overload penalty to NHAI.

¹² Velanchettiyur, Kaniyur, Morattandi, Kodai Road, Paliyekkara, Gaddurur, Neelamangala, Gaddur, Sadahalli, Shirur, Keesara, Venkatachalam and Sullurpet

¹³ Bollapalli Toll Plaza-2017-18: ₹1.40 crore, 2018-19: ₹1.53 crore, 2019-20: ₹0.25 crore, 2020-21: ₹0.24 crore and Tanguturu Toll Plaza-2017-18: ₹0.25 crore, 2018-19: ₹0.41 crore, 2019-20: ₹0.10 crore, 2020-21: ₹0.29 crore

3.1.5 Non-recovery of saved maintenance cost from the Concessionaire

The highway stretch from Thrissur to Edapally (NH 544 in Kerala) has two sections namely Thrissur–Angamaly (Section-1) and Angamaly to Edapally (Section-2). Section-1 and Section-2 were two lane and four lane highways respectively. Section-2 was built, operated and maintained by Public Works Department (PWD) of Government of Kerala (GoK) and subsequently handed (April 2002) over to NHAI. NHAI decided to convert Section-1 as four lane and construct four improvements¹⁴ in Section-2. The contract for the work was awarded (March 2006) to M/s Guruvayur Infrastructure Private Limited (GIPL) at a cost of ₹312.54 crore on BOT basis¹⁵ for a period of 20 years (up to June 2028) under NH (RoF) Rules, 1997. Provisional Completion Certificate was issued on 4 December 2011 and toll collection commenced from 9 February 2012.

Audit noted that part of the stretch from Aluva to Edapally (11.3 km) on Section-2 was handed over (April 2013) to Kochi Metro Rail Ltd (KMRL) for construction of the metro rail infrastructure in Kochi city. This part of the highway stretch was maintained by KMRL (from April 2013 to April 2019) at its own cost. The Concessionaire collected the toll fee from road users for the entire highway stretch even though the maintenance cost for the handed over part of the stretch was borne by KMRL. It was noted that NHAI raised a claim of ₹7.21 crore on the Concessionaire towards reduction of scope (February 2020) as the periodical renewal work was done by KMRL and not by the Concessionaire. The amount was not yet recovered from the Concessionaire (July 2021).

NHAI/Ministry (July 2021) stated that demand letter was issued to the Concessionaire for recovery of equivalent amount of their proportionate savings due to non-required maintenance of the stretch handed over to KMRL. NHAI/Ministry further replied that this would be treated as negative change of scope and recovery was being pursued.

NHAI/Ministry's reply is not tenable because NHAI did not provide/inform about any further correspondence by NHAI after February 2020 for claiming the amount from the Concessionaire (July 2021).

3.2 Loss of revenue due to delay in toll commencement

Audit findings on loss of revenue due to delay in toll collection on account of various reasons are discussed in sub-para 3.2.1 and 3.2.2.

3.2.1 Loss of revenue due to delay in toll collection

Sub-rule 2 of Rule (3) of NH Fee Rules, 2008 provided that collection of fee shall commence within 45 days from the date of completion of the section of national highway, permanent bridge, bypass or tunnel as the case may be, constructed through a public funded project.

¹⁴ (i) Development of Cochin Airport Junction (km 324.245 to km 324.716) (ii) 6-lane fly over at Aluva Junction (km 330.450 to km 331.305) (iii) Construction of approaches to ROB at km 320.090 (iv) Curve improvement before Marthandavarma Bridge (Aluva)

¹⁵ Design, Construction, Development, Finance, Operation and Maintenance

Audit observed the delay in toll collection as per the time limits prescribed by NH Fee Rules, 2008 in four stretches of public funded projects which led to loss of revenue to NHAI amounting to ₹64.60 crore (**Annexure-IV A and IV B**) as summarised in Table 3.

Table 3: Loss of revenue to NHAI due to delay in toll commencement

Sl. No.	Name of the stretch and Toll Plaza	Reasons for delay	Period of revenue loss	Revenue loss (₹ in crore)
1.	Pollachi-Coimbatore (NH 209 in Tamil Nadu) Provisional Commercial Operation Date: 9 August 2019	Toll Plaza was not constructed due to public agitation and non-cooperation from State Government.	August 2019 to March 2021	48.66
2.	KN Hundy Toll Plaza Kerala Border to Kollegala (NH 766 in Karnataka) Provisional Commercial Operation Date: January 2017	Provisional Commercial Operation Date intimated to NHAI was June 2017 however there was delay in finalisation of location of Toll Plaza and issue of fee notification. Toll collection commenced from December 2019.	June 2017 to November 2019	7.85
3.	Thiruvallam Toll Plaza Kazhakootam to Mukkola (NH 66 in Kerala) Provisional Commercial Operation Date: January 2020	Delay in construction of Toll Plaza. (March 2021) Construction completed in August 2021 and toll collection commenced from October 2021.	January 2020 to March 2021	7.14
4.	Lembalakudi Toll Plaza Trichy-Karaikudi (NH 36 in Tamil Nadu)	Delay in inclusion of additional completed stretch of 2.054 km for toll collection.	April 2017 to March 2019	0.95
			Total	64.60

NHAI/Ministry (July 2021) replied that the toll collection in Pollachi-Coimbatore stretch could not be commenced due to resistance from the local public for tolling the stretch and non-cooperation from State Government to resolve the law and order issues.

In respect of Kerala Border to Kollegala section, NHAI/Ministry (July 2021) accepted that there was delay in toll commencement due to delay in issue of fee notification and finalisation of location of Toll Plaza. It further stated that as a portion of the stretch measuring one km was low lying area and gets submerged due to release of water from Kabini Dam, nearly two kilometers of four lane work has not been completed and stretch at Varuna Tank Bund was affected due to heavy rain after Provisional Commercial Operation Date. Commencement of toll collection could be done only after making these stretches traffic worthy.

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The reply of NHAI/Ministry in respect of Kerala Border to Kollegala section is not acceptable in view of the fact that NHAI could have identified the stretches which were not traffic worthy and excluded the same from toll collection by revising the toll fee rate calculation. The reply has also to be viewed against the fact that MoRTH intimated (June 2016) NHAI to commence collection of toll upon issue of Provisional Commercial Operation Date.

Regarding the delay in completion of Toll Plaza in Kazhakootam-Mukkola stretch, NHAI/Ministry (July 2021) replied that land for setting up toll plaza was not available. Bids were also invited for installation of temporary toll plaza three times but proposal was abandoned as no eligible bidder quoted for the installation.

The reply of NHAI/Ministry is not tenable because as per MoRTH's Standard Operating Procedure for toll notification dated 7 March 2019, construction of user fee plaza with all supporting infrastructure should be completed 60 days before Commercial Operation Date of project. However, the same was not adhered to and thus NHAI delayed its commencement of toll collection. The reply substantiated the fact that NHAI failed to plan and acquire land required for construction of Toll Plaza within prescribed time limit.

NHAI/Ministry (July 2021) stated that the Concession Agreement of Trichy-Karaikudi stretch was terminated (May 2019) on account of non-performance by the Concessionaire as the work was not done at desired progress, nor did it complete the balance work (20 km out of total stretch of 106 km). However, before termination of the Concession Agreement in May 2019, some of the balance stretch was completed (February 2017). Independent Engineer conducted various tests (visual inspection test and pavement composition test) and submitted the test report in January 2019. The additional stretch was included for toll collection from 1 April 2019.

The reply is not acceptable because the additional stretch of 2.054 km, though completed in February 2017, was tested by Independent Engineer only in December 2018 i.e. after 21 months of completion of the part of the balance uncompleted stretch. Independent Engineer submitted the test report in January 2019 and the additional stretch was included by NHAI for toll collection in April 2019.

Thus, delay in toll collection as per the time limits prescribed by NH Fee Rules, 2008 led to loss of revenue of ₹64.60 crore to NHAI which could have been avoided.

Recommendation No. 3

MoRTH/NHAI may ensure that Toll Plazas are constructed in time and toll collection commences within 45 days from date of completion of project.

Recommendation No. 4

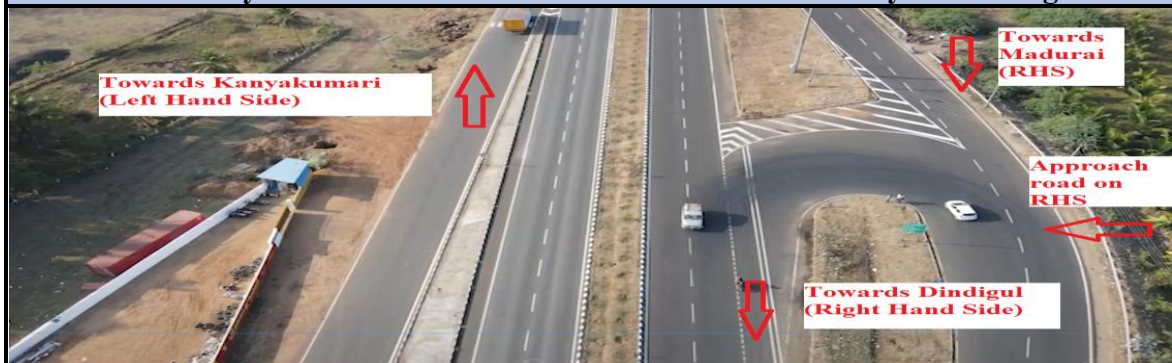
State Support Agreements regarding ensuring maintenance of law and order, availability of land, access to project site for operations and provision of applicable permits etc., may be signed before venturing into any project. NHAI may issue Standard Operating Procedure for entering into State Support Agreements to get the support of the State Governments in toll collection.

3.2.2 Loss of revenue due to delay in completion of approach road

The work of expansion from two lane to four lane of the national highway (NH 44) section from km 0.000 to km 52.300 under Kappalur Toll Plaza on Madurai-Kanyakumari stretch was completed in August 2009 under Engineering, Procurement and Construction (EPC) mode. At km 0.590 on Right Hand Side (RHS¹⁶) of the NH stretch, construction of a new Railway Over Bridge was completed by M/s IRCON International Limited under Engineering, Procurement and Construction (EPC) mode in October 2012.

The toll collection for the four lane stretch was started in September 2012 for 50.857 km only. However, NHA failed to include work of construction of approach road for the NH stretch and new Railway Over Bridge on RHS while awarding the contract for construction of the new Railway Over Bridge on RHS. As a result, the remaining stretch of 1.443 km (from km 0.000 to km 1.443) could not be included for toll collection. The oversight was corrected after nearly five years through fresh contract (May 2017) and work was completed in October 2017 as depicted in figure 4.

Figure 4 : Approach road on Right Hand Side (Built subsequently in 2017) on Madurai to Kanyakumari stretch to access NH and new Railway over Bridge



Further, work of re-grading and strengthening of the existing old Railway Over Bridge on LHS¹⁷ was also not planned and, therefore, not completed along with the construction work of the new Railway Over Bridge on RHS. This work as depicted in figure 5 was also got completed in October 2017 along with the approach road on RHS through the same fresh contract as mentioned above.

Figure 5: Railway Over Bridges (LHS and RHS) on Madurai to Kanyakumari stretch



¹⁶ Right Hand Side means NH stretch from Kanyakumari to Madurai

¹⁷ Left Hand Side means NH stretch from Madurai to Kanyakumari

Hence, both the Railway Over Bridges on RHS and LHS remained without the approach road and re-grading and strengthening respectively for about five years (from October 2012 to October 2017). Subsequently, after those works were completed, the length of 1.443 km (from km 0.000 to km 1.443) of the NH stretch was included for toll collection from April 2018.

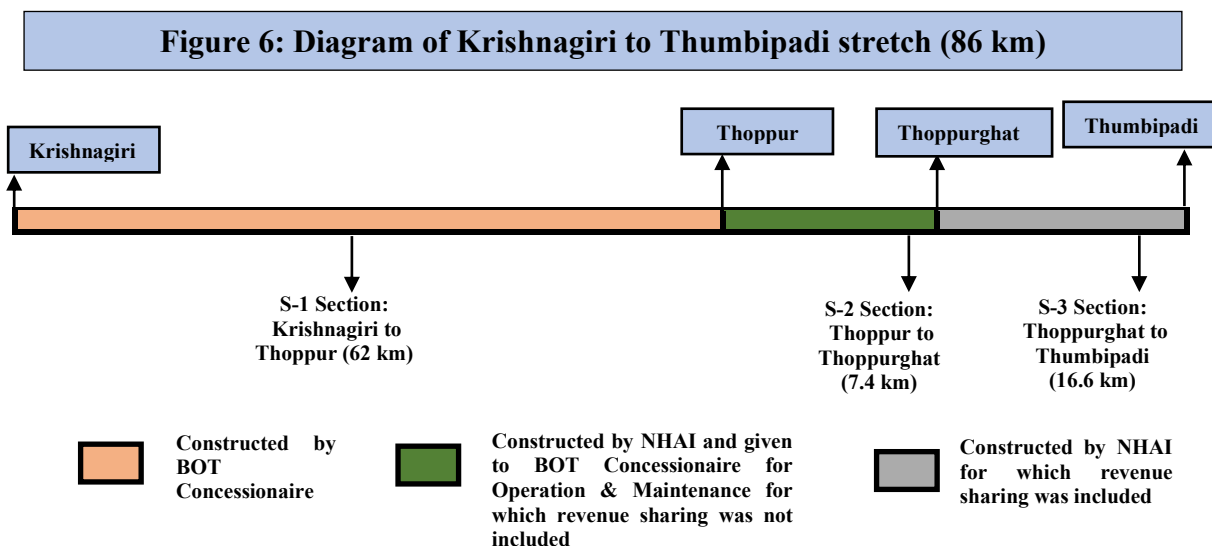
Thus, faulty planning and delay of NHAI to complete the work of approach road (on RHS) and re-grading & strengthening of ROB (LHS) resulted in loss of revenue of ₹3.52 crore¹⁸ from April 2013 to March 2018.

NHAI/Ministry did not reply to the audit observation.

Therefore, NHAI suffered a total revenue loss of ₹68.12 crore due to delayed commencement of toll operations immediately after completion of the projects in these five stretches.

3.3 Loss due to lack of provision for revenue sharing in Concession Agreement for Section of NH constructed by NHAI and handed over to BOT Concessionaire for toll collection

NHAI entered into a Concession Agreement (January 2006) with M/s L&T Krishnagiri Thoppur Toll Road Private Limited (M/s L&T KTTR) for four laning of S-1 Section from Krishnagiri to Thoppur (62 km) of Krishnagiri to Thumbipadi stretch (86 km)¹⁹ of NH 44 in Tamil Nadu on BOT basis as depicted in figure 6 below. The scope of the Concession Agreement also included improvement and Operation and Maintenance of four laned S-2 Section (Thoppur to Thoppurghat - 7.4 km) of the stretch already constructed²⁰ (April 2002) by NHAI.



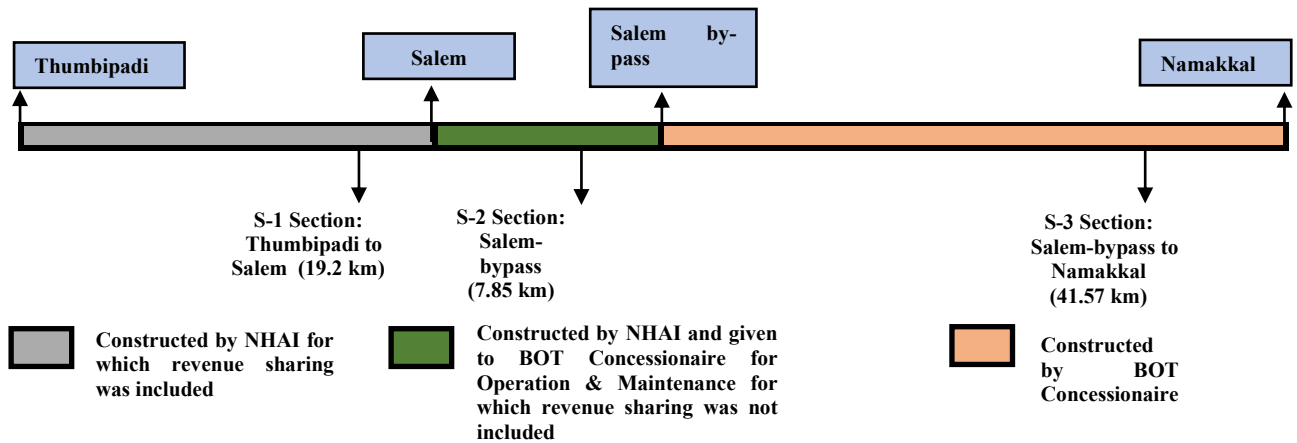
¹⁸ Loss of Revenue: $\{(Toll\ collected\ during\ 2013-14\ to\ 2017-18 \div Total\ length\ in\ km\ of\ the\ stretch\ for\ which\ toll\ collected)\} \times Length\ affected\ due\ to\ delay\ in\ construction\ of\ approach\ road$
 $\{(\text{₹}124.25\ crore \div 50.857\ km) \times 1.443\ km = \text{₹}3.52\ crore$

¹⁹ 86 km of NH stretch between Krishnagiri to Thumbipadi (Palayam TP):- (S-1: 62 km from Krishnagiri to Thoppur, S-2: 7.4 km from Thoppur to Thoppurghat, S-3: 16.6 km Thoppurghat to Thumbipadi

²⁰ Constructed by NHAI under Engineering, Procurement and Construction Contract with M/s PT Sumber Mitra Jaya, Indonesia and M/s SRC Projects Private Limited

Similarly, NHAI also entered into a Concession Agreement (February 2006) with M/s MVR Infrastructure and Tollways Private Limited (M/s MVR) for four laning of S-3 Section from Salem-bypass to Namakkal (41.575 km) of Thumbipadi to Namakkal stretch (68.625 km)²¹ of NH 44 in Tamil Nadu on BOT basis as depicted in figure 7 below. The scope of the Concession Agreement also included improvement and Operation and Maintenance of four lane S-2 Section (Salem-bypass - 7.85 km) of the stretch already constructed²² (January 2003) by NHAI.

Figure 7: Diagram of Thumbipadi to Namakkal stretch (68.625 km)



After construction i.e., four laning (February 2009 and August 2009) of respective S-1 (62 km) and S-3 (41.575 km) sections, M/s L&T KTTR and M/s MVR commenced (February 2009 and August 2009) toll collection (Palayam Toll Plaza and Omallur Toll Plaza) for the already constructed four lane S-2 Sections and newly constructed four lane S-1 and S-3 Sections respectively of the two NH stretches.

The Concession Agreements also had the provision that the Concessionaires shall pay additional proportional revenue per year for additional highway handed over to the Concessionaires for Operation and Maintenance for the remaining concession period.

Later on, for Operation and Maintenance of the two entire stretches, NHAI also handed over remaining S-3 Section²³ from Thoppurghat to Thumbipadi (16.6 km) to M/s L&T KTTR and S-1 Section²⁴ from Thumbipadi to Salem (19.2 km) to M/s MVR in July 2010 and June 2010 respectively. Accordingly, M/s L&T KTTR and M/s MVR were paying 83.80 per cent and 80.43 per cent of the proportional toll revenue per year to NHAI respectively since handing over of the additional sections by NHAI.

²¹ 68.625 km of NH stretch between Thumbipadi to Namakkal (Omallur TP):-(S-1: 19.2 km from Thumbipadi to Salem, S-2: 7.85 km Salem-bypass section, S-3: 41.575 km from Salem-bypass to Namakkal

²² Constructed by NHAI under Engineering, Procurement and Construction Contract with M/s PT Sumber Mitra Jaya, Indonesia and M/s SRC Projects Private Limited

²³ Constructed by NHAI under Engineering, Procurement and Construction Contract with M/s JSR Construction Pvt Ltd

²⁴ Constructed by NHAI under Engineering, Procurement and Construction Contract with M/s Bhageeratha Engineering Ltd, Kochi

Audit observed that NHAI did not include the S-2 Sections (constructed by NHAI) of both the stretches for revenue share as was done by NHAI for S-3 Section (Thoppurghat to Thumbipadi) and S-1 Section (Thumbipadi to Salem) of the Krishnagiri to Thumbipadi stretch and Thumbipadi to Namakkal stretch respectively. As the respective Concession Agreements (January 2006 and February 2006) were silent about revenue sharing of the respective S-2 Sections, M/s L&T KTTR and M/s MVR did not share the revenue collected since February 2009 and August 2009 respectively for respective S-2 Sections but paid negative grant (premium) quoted by them.

Thus, non-provision of revenue sharing clause for S-2 Sections led to loss of revenue of ₹78.88 crore (July 2010 to March 2021) and ₹54.48 crore (June 2010 to March 2021) to NHAI for Krishnagiri to Thumbipadi stretch and Thumbipadi to Namakkal stretch respectively as shown in Table 4.

Table 4: Loss of revenue due to lack of provision for revenue sharing in the Concession Agreements

(₹ in crore)					
Total Negative Grant Received by NHAI from Concessionaire (A)	Total revenue earned (Toll collected) on the stretch (all 3 Sections) (B)	Average Negative Grant per km	Negative Grant for S-2 Section	Share of NHAI in revenue for S-2 if there would have been revenue sharing clause included in the Agreements	Loss of revenue (F)= (E-D)
Krishnagiri to Thumbipadi stretch					
		for S-1 and S-2 (C) = A/69.40 km	(D) = C*7.40 km	(E) = (B/86 km)*0.8380*7.40 km	
360.59	1627.90	5.20	38.48	117.36	78.88
Thumbipadi to Namakkal stretch					
		for S-2 and S-3 (C) = A/49.425 km	(D) = C*7.85 km	(E)= (B/68.625 km)*0.8043*7.85 km	
126.30	810.26	2.56	20.09	74.57	54.48

NHAI/Ministry replied (July 2021) that the Concessionaires quoted negative grant (premium) for construction and Operation and Maintenance of new four laned sections on BOT basis along with improvement and Operation and Maintenance required for already four laned sections.

The reply was not tenable in view of the fact that average NHAI revenue share (i.e., Krishnagiri to Thumbipadi stretch: ₹15.86 crore per km and Thumbipadi to Namakkal stretch: ₹9.50 crore per km) in sections where revenue sharing clause was included was higher than the average negative grant (i.e. Krishnagiri to Thumbipadi stretch: ₹5.20 crore per km and Thumbipadi to Namakkal stretch: ₹2.56 crore per km) paid by the Concessionaires for non-revenue sharing sections. On proportionate basis,

negative grant of ₹58.57 crore (Krishnagiri to Thumbipadi stretch: ₹38.48 crore + Thumbipadi to Namakkal stretch: ₹20.09 crore) was related to S-2 Sections. NHAI could have received an amount of ₹191.93 crore (₹117.36 crore + ₹74.57 crore) as revenue share had the revenue sharing clause similar to revenue sharing for S-3 Section of Krishnagiri to Thumbipadi stretch and S-1 Section of Thumbipadi to Namakkal stretch @ 83.80 per cent and 80.43 per cent for S-2 Section of these two stretches respectively been included in the Concession Agreements.

Thus, non-inclusion of revenue sharing clause in the Concession Agreements resulted in revenue loss of ₹133.36 crore.

Recommendation No. 5

Suitable clauses for revenue sharing by BOT Concessionaires may be included in the bid documents while awarding the contracts for operation and maintenance of national highways stretches built by NHAI.

3.4 Deferment of premium/negative grant

In case of BOT(Toll) projects, the Request for Proposal/bidding documents contains clause to quote either viability gap funding (payable by NHAI) or premium/negative grant (payable to NHAI) during construction/concession period based on the revenue potential/traffic growth of the stretch offered for development by private bidders. The terms and conditions of premium or viability gap funding, are defined in bid document itself. Thus, based on the potential revenue and growth of traffic, the bidders will bid accordingly.

Wherever there was higher revenue potential in BOT(Toll) stretches, the bidders offered payments to NHAI in the form of premium as per the competitive bids submitted during the selection of the bidders.

MoRTH announced (March 2014) a scheme for deferment of premium payments for stressed road projects of the BOT(Toll) Concessionaires who were paying premium to NHAI from the toll revenue earned. The deferment scheme stipulated that the Concessionaire would be required to provide additional comfort by way of appropriate Bank/Corporate Guarantee to the extent of maximum difference between premium payable as per contracted agreement and proposed under the revised payment schedule to adequately protect the interest of NHAI/Government.

An Escrow Agreement signed among NHAI, Escrow Agent, Concessionaire and Lender's representative defines the detailed responsibilities for deposits and withdrawals from the Escrow Account for any project. It provides that the Escrow Agent shall maintain the Escrow Account in accordance with the terms of the Escrow Agreement. As per the agreement, the Concessionaire and NHAI shall deposit all its receivables for the project in the Escrow Account. Further, Escrow Agreement provides the priority order of withdrawals from the Escrow Account by the Escrow Agent.

Audit findings on the NHAI's failure to recover amount of premium/negative grant from Concessionaires and protect the interest of NHAI/Government are discussed in sub-para 3.4.1 to 3.4.3.

3.4.1 Non-recovery of revised premium and interest on deferred premium from BOT Concessionaire

M/s JSR Mulbagal Tollways Private Limited (BOT Toll Concessionaire) was awarded (March 2012) the project for four laning of Mulbagal to Andhra Pradesh/Karnataka border section of NH 75 in Karnataka and signed a Concession Agreement in May 2012 (Gaddurur Toll Plaza). The project achieved commercial operation date on 9 June 2015 and Concessionaire started collection of user fee. The Concession Agreement provided for payment of premium of ₹5.67 crore in the initial year which was to be increased by five *per cent* of immediately preceding year in the subsequent years. Accordingly, for the first year 2015-16 (June 2015 to March 2016) the Concessionaire was required to pay a premium of ₹4.73 crore. However, the Concessionaire submitted (6 November 2015) a request to sanction the deferment of premium as per the scheme announced by MoRTH in March 2014. NHAI sanctioned (6 May 2016) the deferment scheme to the Concessionaire for the period 2015-16 to 2024-25. As per the sanctioned deferment scheme, out of total premium payable of ₹70.38 crore till the year 2024-25, an amount of ₹43.93 crore was deferred.

However, in violation of the deferment conditions, NHAI did not ask the Concessionaire to provide Bank/Corporate Guarantee for total deferred premium of ₹43.93 crore for the period 2015-16 to 2024-25. Thus, NHAI failed to ensure that the Concessionaire complied with terms and conditions of scheme guidelines.

The details of deferment scheme and amount remitted by the Concessionaire are given in Table 5.

Table 5: Details of deferment premium and amount remitted by the Concessionaire (₹ in crore)

Year	Original Premium	Premium payable as per deferment scheme	Amount actually remitted	Amount pending to be received
2015-16	4.73	0	0	0
2016-17	5.95	0	0	0
2017-18	6.25	0	0	0
2018-19	6.56	1.53	0.25	1.28
2019-20	6.89	0	0	0
2020-21	7.24	4.96	0	4.96
Sub Total	37.62	6.49	0.25	6.24
2021-22 to 2024-25 (Not yet due)	32.76	19.96	Not yet due	Not yet due

Revised premium of ₹6.24 crore for year 2018-19 (₹1.28 crore) and 2020-21 (₹4.96 crore) was payable by the Concessionaire. Further, the deferred premium amount carried an interest rate equal to two *per cent* above the bank rate per annum to be paid every year till deferred premium is repaid or recovered.

Interest was payable on the difference between the original premium and revised premium i.e. deferred premium. As on 31 March 2021, interest @ 8.75 per cent on deferred premium amount of ₹31.13 crore (₹37.62 crore - ₹6.49 crore) for the period from June 2015 to March 2021 worked out to ₹11.58 crore. Further, as Concessionaire failed to timely remit the revised premium of ₹6.24 crore (₹1.28 crore + ₹4.96 crore), hence, interest of ₹0.47 crore was payable on this delay in remittance of revised premium.

Therefore, NHAI also failed to recover revised premium of ₹6.24 crore and interest of ₹12.05 crore on deferred premium as shown in Table 6. The same could not be recovered due to the priority of debt service above the premium dues to NHAI in the waterfall mechanism²⁵ prescribed in the Escrow Agreement.

Table 6: Amount of recoverable revised premium, interest and penalty (March 2021)

(₹ in crore)			
Revised premium yet to be recovered	Interest @8.75 per cent on deferred premium (₹31.13 crore)	Penal interest on delay in remittance of revised premium	Total
6.24	11.58	0.47	18.29

NHAI/Ministry (July 2021) replied that Escrow Banker was requested to appropriate premium due and recovery is still pending. NHAI is following for the recoveries as per the provisions of the Concession Agreement and final recovery position will be intimated to Audit in due course of time.

Reply is to be viewed in light of the fact that NHAI granted deferment without securing of Bank/Corporate Guarantee by the Concessionaire in violation of the conditions of the deferment scheme.

3.4.2 Non-recovery of negative grant and interest thereon from BOT Concessionaire

A Concessionaire viz. M/s Guruvayoor Infrastructure Private Limited had to pay negative grant of ₹215 crore to NHAI in six installments as per Clause 23.1 of the Concession Agreement of Thrissur-Angamaly-Edappally Section (Paliyekkara Toll Plaza) of NH 544 in the State of Kerala. First installment of ₹15 crore was paid in December 2006 and remaining five installments of ₹40 crore each were due on 22 September of each year from 2014 to 2018. M/s Guruvayoor Infrastructure Private Limited requested (September 2014) deferment of payment of negative grant as the revenue collection was not sufficient. Based on the request of the Concessionaire, NHAI granted (December 2014) deferment of all five premium installments by 21 months subject to payment of interest on deferred amount at bank rate plus two per cent wherein it was required that Supplementary Agreement had to be entered for complying with the deferment scheme. However, no Supplementary Agreement was executed (March 2021) in this regard.

²⁵ *The waterfall mechanism defines that the Escrow Banker shall withdraw and appropriate amounts from the Escrow Account in the order prescribed in the Escrow Agreement during the concession period describing the withdrawals from the Escrow Account.*

Subsequently, M/s Guruvayoor Infrastructure Private Limited requested (July 2016 and August 2019) NHAI to keep the demand of Negative Grant in abeyance till the release of receivable due from Government of Kerala (GoK) and Kerala State Road Transport Corporation against the claims raised by M/s Guruvayoor Infrastructure Private Limited for reimbursement of free pass issued to the local people as per the Government of Kerala order and non-payment of user fee by Kerala State Road Transport Corporation respectively. Further, Concessionaire also initiated Arbitration procedure in March 2019 filing various claims against which NHAI also filed counter-claims in the arbitration including non-payment of negative grant dues. The first meeting of Arbitration Tribunal was held in August 2019 and proceedings were still on (March 2021).

NHAI, Regional Office Kerala recommended to NHAI Headquarters (October 2019) that the pending recovery from the Concessionaire should not be linked with the amount receivable from GoK and the M/s Guruvayoor Infrastructure Private Limited had to deposit the same along with interest, failing which it had to be recovered from the Escrow Account. Accordingly, Project Implementation Unit Palakkad directed (August 2020 and March 2021) the Escrow Banker (IDFC Bank Limited) to release negative grant and interest as due from the Concessionaire to NHAI which was yet to be received despite having the Escrow Agreement in which the negative grant due to NHAI had priority over the debt service payments. NHAI requested (April 2021) the Concessionaire to deposit ₹295.78 crore (₹200 crore as negative grant and ₹95.78 crore as interest upto 31 March 2021) but the same was not paid.

Thus, NHAI failed to enforce its rights to recover the dues from the Concessionaire and Escrow Account as there was no Bank Guarantee/Corporate Guarantee from the Concessionaire though it was required as per the terms and conditions of the deferment scheme. Therefore, NHAI could not protect its financial interest.

NHAI/Ministry replied (July 2021) that the matter was referred to Conciliation Committee of Independent Experts at NHAI Headquarters. NHAI was making efforts to recover the pending amount with interest as per the relevant contractual clauses of the Concession Agreement and recovery position will be intimated to Audit.

The reply is to be viewed in light of NHAI's failures to recover the dues and to protect its financial interest knowing the precarious financial conditions of the Concessionaire as it did not obtain Bank Guarantee/Corporate Guarantee which was required under the terms and conditions of the deferment scheme.

In conclusion, NHAI could not effectively implement the deferment scheme in the above cases and failed to enforce contractual clauses of Concession Agreements and Escrow Agreements to ensure that the payments due to NHAI do not remain unpaid by Concessionaires and/or Escrow bankers. NHAI failed to recover a total amount of ₹314.07 crore from the above two Concessionaires.

3.4.3 Lack of Corporate Guarantee to protect the financial interest of NHAI in payment of deferred premium and interest thereon by a Concessionaire

National highway stretch from Maharashtra-Karnataka border to Sangareddy (Kamkole Toll Plaza) of NH 65 in the state of Karnataka and Andhra Pradesh was augmented to four lane highway under a Concession Agreement signed (February 2012) by M/s L&T Deccan Tollways Limited (Concessionaire) with NHAI. The concession period as per the Concession Agreement was from 2014-15 (appointment date) to 2038-39 (25 years). The Concessionaire commenced toll collection from October 2017 after obtaining Provisional Commercial Operation Date. The Concession Agreement provided payment of premium fee of ₹80.01 crore for the first year (Year 2017-18) with an increase by five *per cent* for each subsequent year as compared to the immediately preceding year.

However, NHAI sanctioned (October 2019) premium deferment based on the applications (September 2016 and February 2019) of the Concessionaire. An amount of ₹1,073.55 crore was deferred, out of total premium of ₹1,233.51 crore, which was payable from 2017-18 to 2028-29.

Further, as per the conditions of premium deferment sanction letter, the Concessionaire was required to pay interest at two *per cent* above the bank rate on the deferred premium and to submit a Corporate Guarantee for deferred premium. The sanction letter also stated that the Concessionaire shall repay the entire deferred premium and interest thereon no later than one year prior to the expiry of the concession period and in the event that any sum remains due at any time during such period of one year, NHAI shall be entitled to terminate the agreement forthwith.

Audit observed that the Concessionaire did not provide Bank/Corporate Guarantee for total deferred premium of ₹1,073.55 crore for the period 2017-2018 to 2028-2029.

NHAI/Ministry stated (July 2021) that the claims by Concessionaire including deferment of premium have been referred (January 2020) to Conciliation Committee of Independent Experts

The reply of NHAI is not acceptable because Conciliation Committee of Independent Experts recommended (19 March 2021) waiver of providing Corporate Guarantee by the Concessionaire. Therefore, in this case, NHAI failed to ensure that the pre-condition attached to the sanction letter regarding obtaining the Corporate Guarantee was not waived off by the Conciliation Committee of Independent Experts. The waiving of Corporate Guarantee was also not in line with the Ministry's Premium Deferment Scheme. NHAI was left with no security to protect its financial interest in case the Concessionaire defaults in payment of deferred premium along with interest one year prior (Year 2037-38) to the expiry of concession period (Year 2038-39). The concession period will end in the year 2038-39.

Thus, NHAI failed to protect its financial interest to ensure payment of deferred premium of ₹1,073.55 crore and interest thereon by the Concessionaire.

Recommendation No. 6

NHAI may ensure to protect the financial interest of the Government by obtaining appropriate Bank/Corporate Guarantee as per the terms and conditions of the deferment scheme or the conditions attached to the sanction letter.

Recommendation No. 7

In Escrow Agreements, NHAI may ensure the priority in payment of NHAI dues over the Concessionaire and lender bank. NHAI may consider two separate independent banks as an Escrow banker/agent and as a lender bank.

Recommendation No. 8

Ministry may review the circumstances leading to non-obtaining of Bank/Corporate Guarantees, fix responsibility and take appropriate action in these cases.

3.5 Non-Recovery of expenditure towards Independent Engineers from Concessionaires

Concession Agreements entered with BOT Concessionaires stipulate appointment of an Independent Engineer (i.e. Engineer to oversee the construction of the project and operation and maintenance activities) by NHAI. The Concession Agreements further provide that the Concessionaire are to reimburse 50 per cent of the remuneration payable to Independent Engineer and other cost and expenses (i.e. office expenditure and transport cost) to NHAI within 15 days of receiving a statement of expenditure from NHAI. However, the amount towards 50 per cent share of Independent Engineer's remuneration amounting to ₹13.50 crore was not paid by the Concessionaires over the years in five Toll Plazas as per details given in Table 7.

Table 7: Details of Independent Engineer's remuneration (50 per cent share) not paid by Concessionaires

Sl No.	Name of Toll Plaza	Name of the Concessionaire	Applicable period	Amount Pending (₹ in crore)
1.	Gaddurur (NH 75 in Karnataka)	JSR Mulbagal Tollways Pvt. Ltd.	May 2014 to March 2021	6.63
2.	Neelamangala (NH 48 in Karnataka)	Navayuga Bangalore Tollway Ltd.	October 2015 to February 2021	5.32
3.	Sadahalli (NH 44 in Karnataka)	Athaang Devanahalli Tollway Pvt Ltd.	August 2020 to March 2021	0.49
4.	Morattandi (NH 32 in Tamil Nadu)	Pondicherry Tindivanam Tollways Ltd.	November 2020 to March 2021	0.08
5.	Paliyekkara (NH 544 in Kerala)	Guruvayoor Infrastructure Pvt. Ltd.	May 2006 to March 2021	0.98*
			Total	13.50

* ₹8.23 crore has been paid out of total principal amount of ₹9.21 crore as on March 2021

NHAI/Ministry (July 2021) stated that the Concessionaire (Pondicherry Tindivanam Tollways Ltd.) had filed a petition against the recovery proceedings by NHAI from the Escrow Account in the High Court of Delhi which was pending. NHAI did not offer remarks for other Concessionaires/Toll Plazas.

The reply substantiated the fact that NHAI failed to take appropriate action for recovery of its dues from the Concessionaires for a prolonged period despite the Escrow Account mechanism prescribed in the Concession Agreements whereby NHAI could raise claims with Escrow bankers to recover these dues payable to NHAI by the Concessionaires.

3.6 Database management and IT enabled controls in toll operations

BOT operators/Concessionaires have their own software for toll data collection. At Toll Plazas of Public Funded Projects, User Fee Collection Agents collect tolls using Toll Management Software provided by System Integrators appointed by the NHAI/Indian Highways Management Company Limited²⁶. The details of vehicles, toll charged and other connected details were captured in the Toll Management Software by User Fee Collection Agents. NHAI entrusted implementation of Toll Management Software to Indian Highways Management Company Limited. In turn, System Integrators²⁷ were appointed either directly by NHAI or through Indian Highways Management Company Limited for Public Funded Toll Plazas as NHAI did not maintain a centralised Toll Management Software mechanism.

In the absence of centralised database, the toll data requested by Audit was not readily available at NHAI or Indian Highways Management Company Limited. However, NHAI arranged to provide the data through the System Integrators and the same was used for data analysis by Audit. Toll data of 36 Toll Plazas²⁸ (out of 41 selected Toll Plazas) was provided to Audit. Toll data of 32 Toll Plazas²⁹ (18 BOT Toll Plazas and 14 Public Funded Toll Plazas) was analysed and following weaknesses were observed from the data analysis.

3.6.1 Inconsistency in data of Toll Revenue and Vehicles as per Monthly Progress Report and data captured in Toll Management Software

The User Fee Collection Agents prepare a Monthly Progress Report of vehicles handled and the revenue collected at the end of every month and submits the same to NHAI for Public Funded Toll Plazas. Irrespective of the actual toll collected by User Fee Collection Agents at Public Funded Toll Plazas, NHAI had right to receive pre-determined amount as per the agreement entered with User Fee Collection Agents.

Audit checked the Toll Management Software data with the Monthly Progress Report in respect of 14 Public Funded Toll Plazas³⁰ for the period as noted in the Table 8. It was observed that the revenue (toll fee) reported in the Monthly Progress Report and Toll

²⁶ *Joint Venture company formed by NHAI and its Concessionaires & financial institutions*

²⁷ *For implementation of Hybrid Electronic Toll Collection system at Toll Plazas on National Highways*

²⁸ *Data not provided for five Public Funded Toll Plazas (Hebbalu, Chalageri, Kannolli, Madapam, Manoharabad)*

²⁹ *Data analysis could not be made for Morattandi (BOT), Krishnagiri (BOT), Paliyekkara (BOT) & Kumbalam (Public Funded) Toll Plazas because the database did not contain Electronic Toll Collection revenue details.*

³⁰ *Out of 15 Public Funded Toll Plazas for which data was available, the database furnished in respect of Kumbalam Public Funded Toll Plaza did not have data on revenue earned from Electronic Toll Collection transactions, hence not compared*

Management Software data was not matching in case of following four Public Funded Toll Plazas.

Table 8: Under-reported toll revenue and tolled vehicles data in Monthly Progress Report

Sl No.	Name of Toll Plaza	Under-reported		Period
		Toll fee (₹ in crore)	Number of vehicles	
1.	Athur Toll Plaza	18.06	42,62,004	August 2019 to June 2020
2.	Kappalur Toll Plaza	3.65	8,90,489	January 2020 to June 2020
3.	Lembalakudi Toll Plaza	-	1,81,255	January 2020 to June 2020
4.	Rolmamda Toll Plaza	1.26	71,319	January 2020 to March 2020

Thus, NHAI did not check the correctness of Monthly Progress Report submitted by the collection agents of Public Funded Toll Plazas by reconciling with Toll Management Software data. The reconciliation was essential to ensure correctness of Monthly Progress Report submitted by the User Fee Collection Agents and to enable accuracy in arriving Annual Potential Collection in future for user fee collection contracts.

NHAI/Ministry (July 2021) stated that actions have been initiated to reconcile the Monthly Progress Report data with Toll Management Software database.

Reply of NHAI needs to be viewed in light of the fact that actual toll collection is an indicator of revenue potential and under reporting of toll collection figures by User Fee Collection Agents would impact the assessment of the revenue potential of the NH stretch/Toll Plaza for future agreements.

3.6.2 Lack of Centralised Data Centre and periodical data migration mechanism for Toll Management Software database management

The agreements entered by Indian Highways Management Company Limited with System Integrators for implementation of Toll Management Software provided for data backup and restoration to ensure data safety and to avoid data loss. However, there was no mechanism for periodical migration of data from System Integrators. Further, the agreement with System Integrators did not provide clause to claim the ownership of data. The data remained with the System Integrators and was not transferred to NHAI after expiry of the contract. In case of change of System Integrator, there was no provision to migrate the legacy data to the incoming System Integrator. Moreover, neither NHAI nor Indian Highways Management Company Limited had a data center (March 2021).

The transaction history of data requested by Audit was not made available either by NHAI or by Indian Highways Management Company Limited due to lack of a mechanism for periodical migration of data from System Integrators and non-availability of a centralised data centre for toll collection data of Toll Management Software.

NHAI/Ministry (July 2021) stated that to consolidate the data ‘Toll Monitoring & Control Center’ project has been initiated for maintaining and storing consolidated toll collection details at NHAI Headquarters level through integration of all tolling software deployed at all NH toll plazas.

Thus, the fact remains that the present Database Management System needs further improvements.

Recommendation No. 9

NHAI may devise a uniform software for toll collection for all toll plazas and centralised integration of database of the Toll Management Software to ensure real time data availability about toll collection at NHAI Headquarters and all its Regional Offices and Project Implementation Units. All necessary provisions for ownership of data, its back up, security, migration and restoration of data may be ensured in the agreements with System Integrators also.

3.6.3 High number of exemptions and violations at Public Funded Toll Plazas

Exempted vehicles are the vehicles exempted from payment of toll under the provisions of NH (RoF) Rules 1997 or NH Fee Rules, 2008. Violating vehicles are vehicles those do not pay toll due to forceful entry, citing other reasons etc. Review of data of 10 Toll Plazas as given in Table 9 revealed that the percentage of exempted category/violating vehicles passing through the Public Funded Toll Plazas was high. Percentage of exempted category/violating vehicles was in the range of 18.32 per cent (Lembalakudi Toll Plaza) to 53.27 per cent (Paranur Toll Plaza) when compared to BOT Toll Plazas which was in the range of 6.06 per cent (Kodai Road Toll Plaza) to 12.60 per cent (Sengurichi Toll Plaza) only.

Table 9: Data of Exemptions and Violations in Toll Plazas

Sl. No.	Name of the Toll Plaza	Period of data	Number of Vehicles (A)	Number of Vehicles under Exemptions and Violations Categories (B)	Percentage of Exemptions and Violations (C=B/A*100)
Public Funded Toll Plazas					
1.	Paranur	August 2019	1,17,08,438	62,37,152	53.27
2.	Athur	to June 2020	88,92,868	32,39,836	36.43
3.	Kappalur	January 2020	40,81,941	10,23,879	25.08
4.	Lembalakudi	to September 2020	14,02,325	2,56,864	18.32
BOT(Toll) Toll Plazas					
5.	Sengurichi	January 2020 to September 2020	49,77,901	6,27,429	12.60
6.	Kaniyur		47,14,180	5,24,258	11.12
7.	Velanchettiyur		13,15,009	93,746	7.13
8.	Palayam		41,76,839	2,89,490	6.93
9.	Vaiguntham		41,86,098	2,82,878	6.76
10.	Kodai Road		39,25,713	2,37,968	6.06

It is pertinent to note that while granting exemption, the toll plaza operators neither collected any proof of exemption nor recorded it. Under the circumstances, the correctness of exemption reported has been evaluated by comparing with other toll plazas.

NHAI/Ministry (July 2021) stated that toll collection at Public Funded Toll Plazas was done at the sole risk and cost of the User Fee Collection Agents and that there was no loss to Government exchequer as the payment made by User Fee Collection Agents to NHAI was fixed as per the agreement. It further stated that toll collection agencies/Concessionaires have been advised to follow the NH Fee Rules/contract conditions while exempting the vehicles.

The reply is not tenable as the full toll collection as per NH Fee Rules is an indicator of revenue potential and under collection of toll by User Fee Collection Agents/Concessionaires would impact the assessment of the revenue potential of the stretch for future agreements. Moreover, non-levy of user fee from vast majority of road users prolong the capital cost recovery period of the road stretch.

Recommendation No. 10

NHAI may ensure that exemptions are provided to road users as per the NH (RoF) Rules, 1997/ NH Fee Rules, 2008 and prescribed user fee is collected from road users/violators who are not exempted from payment of user fee.

3.7 Corrective actions/measures taken based on audit observations and intimated to Audit by NHAI/Ministry reply (July 2021)

- NHAI reduced the toll rates to 75 *per cent* w.e.f. 1 April 2021 for the Tambaram-Tindivanam stretch of NH 32 in Tamil Nadu (Paranur Toll Plaza) where the work of upgradation from four to eight lane was in progress. Audit had commented on non-reduction of toll rates as per amendment (December 2013) in NH Fee Rules, 2008.

(Para 3.1.1)

- NHAI roll backed (April 2021) the annual revisions made in toll rates from April 2019 for Nandigama-Srikakulam stretch of NH 16 in Andhra Pradesh (Madapam Toll Plaza). Audit had commented on wrong annual revision of toll rates in April 2019 in deviation to amended (December 2013) NH Fee Rules 2008 for the project which was taken up for upgradation from four lane to six lane in January 2019.

(Para 3.1.1)

- NHAI excluded the length of one section of Palar Bridge for calculation of toll rates w.e.f. April 2021 which was constructed prior to September 1956 on Tambaram-Tindivanam stretch of NH 32 in Tamil Nadu (Paranur Toll Plaza) in compliance to amended (October 2011) NH Fee Rules, 2008. Audit had commented on incorrect inclusion of the section of Palar Bridge which was constructed in 1954.

(Para 3.1.2)

CHAPTER IV
MAINTENANCE OF
NATIONAL HIGHWAYS

Chapter IV

Maintenance of National Highways

NHAI and its Concessionaires are jointly responsible for maintenance of traffic-worthiness of NHs through preventive maintenance and periodical monitoring. The maintenance of NHs broadly consisted of Major and Routine maintenance as prescribed under Article ‘Operation and Maintenance’ of respective Concession Agreements. Major maintenance consists of carrying out of overlay works of main carriageway and service roads of national highways. Further, during the course of renewal of overlay, other associated work like re-painting of road curb, re-fixing of road furniture viz., road studs, delineators, curve signs and thermoplastic pavement markings are to be taken up. Routine maintenance includes prompt repairs of potholes, cracks, joints, drains embankments, structures, pavement markings, lighting, road signs and other traffic control devices. In respect of Public Funded NHs, regular maintenance was done by NHAI either through maintenance contractors or through Operation and Maintenance Concessionaires. In the case of BOT projects, the Concessionaires were responsible for the maintenance work. Audit reviewed the maintenance of 37 NHs stretches³¹ of Toll Plazas and observed the deficiencies as discussed in sub-para 4.1 to 4.9.

4.1 Non-conduct or delay in conduct of major/periodical maintenance work

As per the Concession Agreement (in case of BOT projects) and Operation and Maintenance agreements (in case of Public Funded projects entrusted to Operation and Maintenance contractors) the surface roughness³² of highways ideally should be 2000 mm/km. It should not exceed 3000 mm/km at any point of time, during its service life. Wherever and whenever the roughness value exceeds 3000 mm/km or if five years of service life is completed (whichever is earlier), the overlay works by way of renewal coat of Bituminous Concrete shall be taken up.

The Clauses 18.12 and 18.13 (Operation & Maintenance) of the Concession Agreements provided for levy and collection of damages by NHAI from the Concessionaires (BOT & Operation and Maintenance stretches) in case of non-compliance of the Concession Agreement requirements on operation & maintenance of NHs as stated above.

Review of records revealed that there was delay in completion of overlay works in case of seven stretches for which delay ranged from 2 to 76 months. In case of three stretches the overlay works were to be taken up (March 2021) even after lapse of 3 to 69 months from the due date of completion of overlay. Thus, BOT/Operation and Maintenance Concessionaire either delayed or did not take up the periodical overlay work in 10 stretches out of 37 stretches test checked, which were due as per Concession Agreements/Operation & Maintenance Agreements. Further, NHAI also failed to

³¹ 37 stretches (18 Public Funded stretches having 20 Public Funded Toll Plazas and 19 BOT stretches having 21 BOT Toll Plazas) were coming under 41 selected Toll Plazas.

³² Surface roughness is a component of surface texture. It is quantified by the deviations of a real surface from its ideal form. If these deviations are large, the surface is rough; if they are small, the surface is smooth.

recover ₹391.27 crore from nine BOT Concessionaires as damages for not taking up/delay in completion of overlay and ₹53.84 crore as risk and cost damages from one Operation and Maintenance Concessionaire (Madurai-Kanyakumari stretch) (March 2021). Details of the cases noticed by Audit and response of NHAI/Ministry are given in **Annexure-V**.

NHAI/Ministry accepted and confirmed (July 2021) the audit observations and replied that the overlay works were either taken up at risk and cost of the Concessionaires by NHAI or to be taken up by BOT/Toll Operate Transfer Concessionaires. NHAI further stated that recovery claims for overlay work was taken up at risk and cost of Concessionaire and claims for damages for delay in overlay work from the Concessionaires were raised but the same were yet to be recovered.

Thus, NHAI failed to recover ₹445.11 crore from Concessionaires as damages for not taking up overlay, delay in completion of overlay and for the work taken up by NHAI at the risk and cost of Concessionaires.

Recommendation No. 11

NHAI should ensure timely completion of major/periodical maintenance works of the NHs as per the Concession Agreements to ensure smooth riding quality to the road users. NHAI may create a mechanism to periodically report to the NHAI's Board of Members about delays in taking up maintenance work by the Concessionaires.

4.2 Lacunae in Concession Agreements with respect to Periodical Overlay work of NHs stretches

NHAI entered into Concession Agreements with Concessionaires as detailed in Table 10.

Table 10: Details of Concession Agreements entered into by NHAI

Sl. No.	Name of Toll Plaza	Name of BOT Concessionaire	Name of Stretch	Date of Concession Agreement	Provisional Commercial Operation Date
1.	Panthangi	GMR Hyderabad Vijayawada Expressways Pvt Ltd	Hyderabad to Vijaywada (NH 65 in Telangana)	October 2009	December 2012
2.	Gaddurur	JSR Mulbagal Tollways Pvt. Limited	Mulbagal - Andhra Pradesh/ Karnataka Border (NH 75 in Karnataka)	May 2012	June 2015

On review of the Concession Agreements, it was noticed that as per Schedule K (Repair/ Rectification of Defects and Deficiencies), whenever the roughness value exceeds 2500 mm/km (as measured by Bump Integrator), the same has to be rectified within 180 days. However, there was no timeline available for periodical overlay of the entire

stretch i.e., the clause related to overlay every five years from Provisional Commercial Operation Date as incorporated in other Concession Agreements as mentioned in Para 4.1 above. This resulted in uneven surface of the stretch and poor riding quality.

With respect to Panthangi Toll Plaza, NHAI/Ministry replied (July 2021) that it was one of the initial BOT projects where the clause of overlay was not clearly mentioned in the Concession Agreement. Further, with respect to Gaddurur Toll Plaza, NHAI/Ministry replied (July 2021) that there was no provision of overlay on completion of every five years and there was no stretch more than 1 km where roughness value exceeded 2,500 mm/km and hence no major repair was carried out.

The replies are not tenable as prior to these two projects, there were BOT projects (e.g., Morattandi Toll Plaza, Concession Agreement Dated: 19 July 2007 and Neelamangala Toll Plaza, Concession Agreement dated: 9 May 2007) under NH (RoF) Rules, 1997 with clause of periodical overlay stating that periodical maintenance be carried out as required and at least once every five years from Commercial Operation Date and in the last year of concession period. Thus, NHAI failed to include the clause regarding overlay every five years in the Concession Agreements.

Thus, NHAI failed to enforce the Concessionaires to do the periodical overlaying of roads in respect of the BOT stretches due to lacunae in Concession Agreements which did not provide the clause for overlaying in every five years from Provisional Commercial Operation Date.

4.3 Non-conduct of routine and regular maintenance works

Routine and regular maintenance of NHs are required to ensure safe, smooth and uninterrupted traffic flow. This consists of undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices. Joint field Inspections were conducted by Audit along with officers of NHAI and Independent Engineers in all the 37 stretches under 41 Toll Plazas. Thus, following deficiencies were noticed.

4.3.1 Non-appointment of Annual Maintenance Contractors in Public Funded Projects

As NHAI earned toll revenue from Public Funded stretches of NHs, it was the responsibility of NHAI to provide regular and routine maintenance of the stretches by awarding Annual Maintenance Contracts (AMC)/Operation & Maintenance contracts. These Annual Maintenance Contracts majorly consisted of providing road repair, filling potholes, cleaning of carriageway, removal of vegetation, safety improvements and incident management services etc. NHAI also directed (October 2014) Regional Offices/Project Directors that the road stretches entrusted to NHAI be maintained in traffic worthy condition.

Audit observed (October 2020 to January 2021) that NHAI failed to award Annual Maintenance Contracts (AMCs) in a time bound manner in respect of five out of 18 selected Public Funded stretches as detailed in Table 11.

Table 11: Details of non-appointment of AMC contractors on Public Funded/BOT (Annuity) stretches

Sl. No.	Name of Stretch and Toll Plaza	Deficiency in maintenance
1.	Tambaram - Tindivanam (NH 32 in the State of Tamil Nadu) Paranur Toll Plaza and Athur Toll Plaza	There was no Annual Maintenance Contractor during November 2019 to October 2020 and only a short term contract was awarded by NHAI in January 2020 for two and half months which was extended several times till October 2020 and the scope of work was limited to Incident Management Services including maintenance of plants/shrubs. Other major items like road repair, filling of pothole were not included.
2.	Madurai-Kanyakumari (NH 44 in Tamil Nadu) Kappalur Toll Plaza, Etturvattam Toll Plaza, Salaipudhur Toll Plaza and Nanguneri Toll Plaza	There was no Annual Maintenance Contract from September 2016 to November 2017. AMC was awarded from December 2017 to December 2018. AMC was further extended upto October 2020 only for basic maintenance like cleaning of carriageway, watering plantation and Incident Management Services but items like road repair, filling of potholes, safety items were not included in the contract.
3.	Trichy-Karaikudi (NH 36 in Tamil Nadu) Lembalakudi Toll Plaza and Lechchumanapatti Toll Plaza	BOT(Annuity) contract was suspended in October 2018 due to poor performance. After suspension, there was no Annual Maintenance Contract from October 2018 till July 2019.
4.	Gundugolanu-Vijayawada (NH 16 in Andhra Pradesh) Kalaparru Toll Plaza and Pottipadu Toll Plaza	The project for upgradation to six lane was terminated in August 2016 owing to poor performance of the BOT Concessionaire (Vijayawada Gundugolanu Road Projects Pvt Limited - BOT Concessionaire). Therefore, NHAI started collecting toll from August 2016. The stretch was divided into two packages and Engineering, Procurement and Construction contractors were appointed to take up the six lane upgradation works in January 2019 (LOA) and October 2019 (LOA) for Pottipadu Toll Plaza and Kalaparru Toll Plaza respectively During the intervening period from August 2016 to October 2019, annual maintenance contractor was not appointed by NHAI.
5.	Kerala border-Kollegala (NH 766 in Karnataka) KN Hundy Toll Plaza	NHAI started collection of toll from December 2019 onwards. However, NHAI was yet (March 2021) to appoint the Operation & Maintenance contractor to look after the maintenance of the stretch.

Figure 8: Picture of Potholes on Tambaram-Tindivanam stretch (NH 32) found during Joint Inspection



NHAI/Ministry in its reply (July 2021) stated that:

(i) Tambaram-Tindivanam stretch (Paranur Toll Plaza and Athur Toll Plaza):

There was delay in appointment of annual maintenance contractor due to Covid 19 Pandemic (November 2019 to October 2020).

The reply is not tenable as timely action was not taken to appoint the maintenance contractor before the expiry of BOT(Annuity) contract in November 2019 whereas lockdown due to Covid 19 pandemic commenced only in the end of March 2020. The new maintenance contract was awarded in November 2020 only.

(ii) Madurai-Kanyakumari stretch (Kappalur, Etturvattam, Salaipudhur, Nanguneri Toll Plazas): The present Toll Operate Transfer Concessionaire (M/s Cube Mobility Investments Pte Ltd, Singapore) was maintaining the Madurai-Kanyakumari stretch as per the provisions of the Concession Agreement (October 2020 onwards).

The reply is silent on why AMC was not available during September 2016 to November 2017 and December 2018 to October 2020 when the stretch was Public Funded.

(iii) Trichy-Karaikudi stretch (Lembalakudi Toll Plaza and Lechchumanapatti Toll Plaza): Independent Engineer was regularly monitoring the compliance of operation & maintenance obligation of the Concessionaire and the Concessionaire had been advised to ensure the strict compliance of operation & maintenance obligation.

However, fact remains that NHAI failed to appoint Operation and Maintenance contractor during the period October 2018 to July 2019.

(iv) Gundugolanu-Vijayawada stretch (Kalaparru Toll Plaza and Pottipadu Toll Plaza): Due to concurrent delay on the part of both parties (Concessionaire and

NHAI) in fulfilling of conditions precedent, the contract was short closed. A settlement cum close out agreement was signed (December 2018) and NHAI recovered ₹18.05 crore from Concessionaire. Thereafter, the stretch was awarded to Engineering, Procurement and Construction contractors as Package I and II and during that time, NHAI had taken utmost care in keeping the road in traffic worthy condition.

The fact remains that NHAI had started toll collection for both Toll Plazas from August 2016 without appointing Operation and Maintenance contractor from August 2016 to January 2019/October 2019.

(v) **Kerala border-Kollegala stretch (KN Hundy Toll Plaza):** NHAI incurred an amount of ₹5.16 crore towards repairs including pothole filling. A proposal for major repairs including Incident Management Service at the cost of ₹5.16 crore was received from Project Implementation Unit, Ramanagara and same was under scrutiny by Regional Office Bengaluru. Further, it stated (January 2022) that the proposals for appointment of Operation and Maintenance contractor is under scrutiny of Independent Engineer.

NHAI/Ministry reply did not clarify why Operation and Maintenance contractor was not appointed from December 2019 onwards.

4.3.2 Failure to conduct regular maintenance work by BOT(Toll) Concessionaires

In case of BOT projects, the Concessionaire maintains the NHs as per respective Concession Agreements and it is monitored by NHAI through Independent Engineers. Review in audit revealed that in four out of 19 selected BOT stretches, Concessionaires failed to conduct regular maintenance works. NHAI also failed to recover an amount of ₹174.63 crore from four BOT(Toll) Concessionaires for non-maintenance of the stretches as per details given in Table 12.

Table 12: Deficiency in regular maintenance on BOT(Toll) stretches

Sl. No.	Name of Stretch and Toll Plaza	Name of Concessionaire	Deficiency in maintenance	Penalty due from Concessionaire (₹ in crore)
1.	Pondicherry-Tindivanam (NH 32 in Tamil Nadu) Morattandi Toll Plaza	Pondicherry-Tindivanam Tollway Ltd.	Independent Engineer reported (May 2016 to September 2016) the defects in routine & regular maintenance and the same were not completed and taken up by NHAI at risk and cost of Concessionaire and pending as on March 2021.	1.31 (June 2016 to August 2019)

Sl. No.	Name of Stretch and Toll Plaza	Name of Concessionaire	Deficiency in maintenance	Penalty due from Concessionaire (₹ in crore)
2.	Krishnagiri-Thoppur (NH 44 in Tamil Nadu) Palayam Toll Plaza	L&T Krishnagiri Thoppur Toll Road Pvt. Ltd.	Concessionaire failed to carry out/delayed carrying out maintenance work since December 2015 till August 2021.	17.10 (December 2015 to August 2021)
3.	Thrissur-Edapally (NH 544 in Kerala) Paliyekkara Toll Plaza	Guruvayoor Infrastructure Pvt. Ltd.	Concessionaire failed to carry out maintenance work since July 2014 as pointed out by Independent Engineer.	137.74 including interest of ₹69.09 crore (July 2014 to March 2021)
4.	Tada-Nellore (NH 16 in Andhra Pradesh) Venkatachalam Toll Plaza and Sullurpet Toll Plaza	Swarna Tollways Pvt. Ltd.	Restoration work for damaged 8.80 km ³³ road on NH stretch due to floods was not taken up by Concessionaire from November 2015. Hence, NHAI took up the restoration work through another Engineering, Procurement and Construction contractor which was yet to be completed (March 2021).	18.48 (from November 2015 to November 2016 towards liability for non-restoration).

NHAI offered the following replies:

- 1) **Pondicherry-Tindivanam stretch (Morattandi Toll Plaza):** Reply of NHAI was silent about non-conduct of regular maintenance of the stretch.
- 2) **Krishnagiri-Thoppur stretch (Palayam Toll Plaza):** The Concessionaire raised dispute on damages levied for non-compliance of O&M obligations and action would be taken to realise the damages.
- 3) **Thrissur-Edapally stretch (Paliyekkara Toll Plaza):** Despite best efforts of NHAI the Concessionaire has not paid the amount regarding penalties till date (July 2021). NHAI further stated that Concessionaire had defaulted in its obligation under the shelter of arbitration proceedings.
- 4) **Tada-Nellore stretch (Venkatachalam and Sullurpet Toll Plaza):** The Concessionaire denied the claim of ₹18.48 crore raised by NHAI and further, Concessionaire, in July 2020, referred the matter for amicable settlement through

³³ Km 83.200 to Km 89.000 (5.800 km) and from Km 137.000 to Km 140.000 (3.000 km)

Conciliation Committee of Independent Experts. After outcome of the matter, necessary action would be taken.

Thus, NHAI failed to ensure the regular maintenance of the stretches by the Concessionaires and to collect penalty of ₹174.63 crore from the above four BOT(Toll) Concessionaires.

Recommendation No. 12

NHAI may ensure timely appointment of Annual Maintenance Contractors for Public Funded Projects and also ensure that the Concessionaires are carrying out the routine maintenance of NHs as per the respective Concession Agreements in case of BOT stretches.

4.4 Non-rectification/delay in rectification of black spots

MoRTH Office Memorandum dated 28 October 2015 on protocol for identification and rectification of road accident black spots on NHs, defined black spots as “a stretch of NH of about 500 meters in length in which either five road accidents (involving fatalities/grievous injuries) took place during the last three calendar years or 10 fatalities in all three years put together took place during the last three calendar years”.

Accordingly, MoRTH identified black spots for the period 2011-14 (October 2015) and 2015-18 (June 2019) which were to be rectified within specified time frame. These blackspots were classified by NHAI Regional Offices as those requiring (i) short term rectification measures and (ii) long term rectification measures based on field inspections. Short term rectification measures were to be implemented within three months of identification. Permanent measures were to be implemented within a time limit of approximately four years³⁴. The details provided by NHAI regarding the rectification of black spots in respect of six Regional Offices in Southern India are given in Table 13 and 14.

Table 13: Status of Black spots for which long term rectification measures were identified and required

Regional Office	Number of black spots					
	Identified		Rectified		Pending for rectification	
	2011-14	2015-18	2011-14	2015-18	2011-14	2015-18
Chennai	42	221	9	0	33	221
Madurai	58	203	35	80	23	123
Thiruvanthapuram	3	169	2	3	1	166
Hyderabad	44	336	37	262	7	74
Vijayawada	9	134	6	63	3	71
Bengaluru	39	411	32	180	7	231
Total	195	1,474	121	588	74	886

³⁴ NHAI guidelines dated 5 December 2019 related to “Rectification of Accidents Blackspots - Guidelines on preparation of proposals, sanctions, execution of works etc.” prescribed the timelines to be followed for cost estimate, approval, finalisation of contractor for civil works, land acquisition, timeline for completion of civil works. Blackspot can be rectified before the timeline of 1410 days. The maximum time limit is prescribed considering time required for construction of Vehicle under Pass (VUP), Bridge etc. for long term permanent rectification measures.

From the data it was observed that 37.95 *per cent* (74 out of 195 black spots) of long term rectifications were pending with respect to the black spots identified during 2011-14. Similarly, 60.11 *per cent* (886 out of 1,474 black spots) of the long term rectifications identified during 2015-18 were not carried out (March 2021).

Table 14: Status of Black spots for which short term rectification measures were identified (2015-18)

Regional Office	Number of black spots		
	Identified	Rectified	Pending for rectification
Chennai	298	224	74
Madurai	203	203	0
Thiruvanthapuram	214	3	211
Hyderabad	336	319	17
Vijayawada	340	340	0
Bengaluru	411	394	17
Total	1,802	1,483	319

Further, 17.70 *per cent* (319 out of 1,802 black spots) black spots identified during 2015-18 which required short term rectifications were not carried out (March 2021).

NHAI/Ministry, while accepting (July 2021) the audit observations, stated that rectification works are in progress at various stages i.e., DPR, approval, bidding, civil works etc. and the pending works will be completed within a period of one year. Short term measures for pending 74 black spots (2015-18) of Regional Office Chennai were taken and the deficiencies rectified.

Reply of the NHAI/Ministry need to be viewed in the light of the fact that 3,385 accidents occurred during 2020-21 on 12 stretches under Regional Office Madurai. On review of the accidents data, it was noted that 269 accidents (about eight *per cent*) involving 35 fatalities and 269 injuries occurred on non-rectified blackspots under Regional Office Madurai which could have been avoided/reduced.

Thus, NHAI failed to ensure timely rectification of black spots, which was essential to mitigate the risk of fatal and grievous accidents.

Recommendation No. 13

NHAI may ensure that all the identified black spots are rectified at the earliest.

4.5 Non-appointment of Independent Engineers

Independent Engineers appointed by NHAI are responsible for review of designs and drawings, inspection of construction works, testing and issue of completion certificates during construction stage of NHs and inspection and monitoring of Operations and Maintenance after commencement of operations of the NHs. The Independent Engineer submits the Monthly Progress Reports every month to NHAI to report on the above matters. The fees payable to Independent Engineer is shared equally between NHAI and Concessionaires in case of BOT NHs stretches and fully borne by NHAI in case of Public Funded NHs stretches.

Audit noticed that Independent Engineers were not appointed in three out of selected 37 stretches during the period July 2016 to June 2018 as detailed in Table 15.

Table 15: Details of stretches not having Independent Engineer

Sl. No.	Name and Type of stretch	Name of Toll Plaza	Period of Non-appointment of Independent Engineer
1.	Madurai-Kanyakumari (NH 44 in Tamil Nadu) Public Funded stretch	Kappalur, Etturvattam, Salaipudhur, Nanguneri	June 2017 to June 2018
2.	Gundugolanu-Vijayawada (NH 16 in Andhra Pradesh) Public Funded stretch	Kalaparru, Pottipadu	July 2016 to May 2017
3.	Chengapalli to Tamil Nadu /Kerala Border (NH 544 in Tamil Nadu) BOT stretch	Kaniyur	July 2017 to June 2018

NHAI/Ministry (July 2021) accepted the audit observation that Independent Engineers in three stretches were not appointed and stated that Project Director of Project Implementation Unit acted as Independent Engineer for the stretch in absence of Independent Engineer.

The reply is not acceptable as Project Director may not act as an independent observer without prejudice to the rights and obligations of both the parties i.e., Concessionaire and NHAI. Thus, the appointment of Independent Engineer was required for the smooth conduct and maintenance of the projects for rectifying the defects in road maintenance and road furniture by way of regular inspection.

Recommendation No. 14

NHAI may ensure that Independent Engineers are in place at all times so as to ensure proper inspection and monitoring of NHs.

4.6 Non-appointment of Road Safety Experts by Independent Engineers

The agreements entered between NHAI and Independent Engineers bestowed the responsibility on the Independent Engineers for appointment of Road Safety Experts who shall review all the safety measures taken by the Concessionaire during the concession period at site.

The Road Safety Expert was also to look into the causes of various accidents. Road Safety Expert was to undertake and supervise safety audit/inspection once in every quarter and furnish a detailed report. Road Safety Expert was to review emergency response arrangement, accident data and safety provisions in operation & maintenance activities as proposed by the Concessionaire. Further, Road Safety Audit was also essential for improvement of road safety and prevention of accidents.

Audit noticed that Road Safety Experts were not appointed in respect of five³⁵ out of 13 stretches (in respect of Chennai, Madurai and Kerala Regional Offices) verified in audit. In six³⁶ out of eight stretches where Road Safety Experts were appointed, Road Safety Audit was not conducted at regular intervals as envisaged in the agreement. Thus, non-appointment of Road Safety Experts and non-conduct of Road Safety Audit on regular basis resulted in exposure of road users to unsafe roads.

NHAI/Ministry replied (July 2021) in respect of only four stretches out of the 11 stretches on which Audit had commented. It was replied that:

- Road Safety Expert was subsequently appointed in Trichy-Karaikudi and Karur-Dindigul stretches.
- Road Safety Expert would be engaged in Madurai-Kanyakumari stretch.
- Road Safety Expert had conducted Road Safety Audit regularly in Thrissur-Edapally.

The reply confirmed that Safety Audit was not conducted in line with the contract terms with Independent Engineer as Road Safety Experts were either appointed later or yet to be appointed. The reply is not acceptable with respect to Thrissur-Edapally as data furnished by Project Implementation Unit and monthly Invoice of Independent Engineer for March 2021 indicated Road Safety Audits were not done regularly.

4.7 Non-appointment of Safety Consultants by NHAI

Concession Agreements of seven NHs stretches³⁷ provided for appointment of Safety Consultants by NHAI to conduct Safety Audit once in every accounting year to review and analyse the accident data of the preceding year and to undertake an inspection of project highway. The appointment of Safety Consultant was necessary because after review of accident data/probable black spot, Consultant were required to submit Safety Report recommending specific improvements, if any, required to be made to road, bridges, markings, signs, road furniture etc. which could reduce the number of accidents and fatalities. However, the respective NHAI Project Implementation Units did not appoint Safety Consultants.

³⁵ *Krishnagiri-Thoppur-Thumbipadi, Madurai-Kanyakumari, Pondicherry-Tindivanam, Karur-Dindigul and Dindigul-Samayanallur (Not appointed by earlier Independent Engineer from December 2016 to November 2020, new Independent Engineer took over in January 2021 and used Road Safety Expert services)*

³⁶ *Trichy-Karaikudi, Chengapalli to Tamil Nadu/Kerala Border, Hosur-Krishnagiri, Thrissur-Edapally, Salem-Kumarapalayam, Edapally-Aroor*

³⁷ *Chengapalli to Tamil Nadu/Kerala Border (Kaniyur Toll Plaza-Coimbatore Project Implementation Unit), Hosur-Krishnagiri (Krishnagiri Toll Plaza-Krishnagiri Project Implementation Unit), Anakapalli to Tuni (Vempadu Toll Plaza-Rajahmundry Project Implementation Unit), Tuni to Diwancheruvu (Krishnavaram Toll Plaza-Rajahmundry Project Implementation Unit), Diwancheruvu to Siddhantham (Eethakota Toll Plaza-Rajahmundry Project Implementation Unit), Siddhantham to Gundugolanu (Unguturu Toll Plaza-Rajahmundry Project Implementation Unit) and Chilkaluripet to Nellore (Bollapalli & Tanguturu Toll Plaza - Nellore Project Implementation Unit)*

NHAI/Ministry replied (July 2021) that Road Safety Experts were appointed through Independent Engineers for conduct of Road Safety Audit by the respective Project Implementation Units.

However, fact remained that appointing Road Safety Experts through Independent Engineer did not relieve NHAI to do Safety Audits as required in the Concession Agreements. As per Concession Agreements of these stretches, a separate Safety Consultant was to be provided which was not complied with by NHAI and it was a lapse on the part of NHAI for ignoring the monitoring of safety of stretches by not appointing the Safety Consultants.

Recommendation No. 15

NHAI may ensure that the Road Safety Experts and Safety Consultants are appointed and road safety audits are carried out as per the Concession Agreements.

4.8 Non-conduct of road surveys for assessing the quality of roads

A Network Survey Vehicle utilises latest survey techniques such as laser line projectors, high speed cameras and advanced optics to acquire high resolution 3D profile of the road. This technology allows automatic pavement condition assessment of asphalt and concrete surfaces.

Ministry issued the policy guidelines (November 2019) on surveying with Network Survey Vehicle for all the projects involving development of two/four/six/eight lanes expressway and strengthening. As per the guidelines, a road survey was to be conducted every six months after completion of the project using Network Survey Vehicle. Further, some of the agreements entered between NHAI and Independent Engineers provided for assessing the condition of NHs using Network Survey Vehicle.

Audit observed that the survey was not conducted in respect of six stretches³⁸ out of 37 stretches. Further, it was observed that overlay works were not taken up (March 2021) despite the poor condition of the NHs in four stretches³⁹ where road survey using Network Survey Vehicle was conducted. Details of stretches and NHAI/Ministry reply is given in **Annexure-VI**.

³⁸ *Tamparam-Tindivanam Public Funded stretch (Athur & Paranur Toll Plazas), Pondicherry to Tindivanam BOT stretch (Morattandi Toll Plaza), Ulundurpet-Padalur BOT stretch (Sengurichi Toll Plaza), Salem- Kumarapalayam BOT stretch (Vaiguntham Toll Plaza), Hosur-Krishnagiri BOT stretch (Krishnagiri Toll Plaza) and Krishnagiri-Thumbipadi Ghat BOT stretch (Palayam Toll Plaza)*

³⁹ *Madurai-Kanyakumari – 197.50 km was graded poor out of 771.08 km (January 2019) but overlay was taken up only in April 2021; Trichy-Karaikudi – 12.6 km was graded poor out of 158.90 km (June 2020); Diwancheruvu-Siddhantham (Eethakota) and Siddhantham-Gundugolanu (Unguturu) were graded (November 2020 and July 2020 respectively) as poor with ravelling, cracking etc.*

Figure 9: Picture showing uneven patches on Trichy-Karaikudi stretch (NH 36) found during Joint Inspection



NHAI/Ministry replied (July 2021) that road survey using Network Survey Vehicle was conducted in three stretches after audit observation and road survey using Network Survey Vehicle would be taken up on priority basis in Ulundurpet-Padalur, BOT stretch (Sengurichi Toll Plaza). However, no reply was given for two out of six stretches where road survey using Network Survey Vehicle was not conducted.

Further, NHAI assured that rectification would be taken up in three out of four stretches where road survey using Network Survey Vehicle was done but overlay work was not done in Sections graded as poor. NHAI did not reply for Madurai-Kanyakumari stretch.

Thus, Project Directors of respective Project Implementation Units failed to ensure compliance of the provisions of the agreement/MoRTH guidelines by Independent Engineers. In the absence of road surveys using Network Survey Vehicle, Independent Engineers/NHAI could not assess the quality of the roads and overlay works were not taken up even after poor quality of road as reported in road survey reports using Network Survey Vehicle.

Recommendation No. 16

NHAI may ensure that regular road surveys using Network Survey Vehicles are conducted as per the Ministry's guidelines and the deficiencies noticed are rectified at the earliest to maintain the quality of NHs.

4.9 Non-removal of encroachment along the National Highways

NHAI Regional Offices, Project Implementation Units and BOT/Operation and Maintenance Concessionaires are responsible for protecting the National Highways from encroachments and unauthorised occupation thereon. NHAI Headquarters instructed (November 2016) its Regional Offices to take immediate action for removal of illegal encroachments and unauthorised cuts/access across NH stretches.

A review of data on status of encroachments furnished by NHAI revealed that there existed 84 encroachments in five out of 37 selected stretches as detailed in Table 16. These consisted of temporary and permanent structures including tea stalls, RCC commercial building, government buildings, platforms of buildings etc. Failure on the part of Project Directors/Concessionaires to remove encroachments not only hindered

the Right of Way but also posed safety hazards, increasing the risk of road accidents and casualties of road users.

Table 16: Number of Encroachments on the National Highways

Sl. No.	Name of stretch	Number of Encroachments (March 2021)
1.	Madurai-Kanyakumari (NH 44 in Tamil Nadu) - Public Funded stretch	14
2.	Pondicherry-Tindivanam (NH 32 in Tamil Nadu) - BOT stretch	14
3.	Thrissur-Edapally (NH 544 in Kerala) - BOT stretch	7
4.	Karur-Dindigul (NH 44 in Tamil Nadu) - BOT stretch	3
5.	Chilikaluripet-Nellore (NH 16 in Andhra Pradesh) - BOT stretch	46
	Total	84

NHAI/Ministry replied (July 2021) that encroachments with respect to Madurai-Kanyakumari stretch were removed and action were being taken in case of Thrissur-Edapally stretch, Karur-Dindigul stretch, Chilikaluripet-Nellore stretch. NHAI did not offer any specific remarks for Pondicherry-Tindivanam stretch.

Thus, NHAI failed to continuously monitor NHs to prevent encroachments.

Recommendation No. 17

NHAI may ensure that the NHs are maintained free of encroachments and hindrances in order to safeguard the right of way and road safety.

4.10 Corrective actions/measures taken based on audit observations and intimated to Audit by NHAI/Ministry reply (July 2021)

- Audit commented on non-submission of Monthly Progress Report in Tambaram-Tindivanam stretch (Athur Toll Plaza and Paranur Toll Plaza) by the Independent Engineer and NHAI replied that an amount of ₹1.28 lakh had been recovered (October 2020) from the Independent Engineer for non-submission of the reports.
- On being pointed out by Audit, NHAI had taken actions to rectify the deficiencies in the upkeep of road furniture such as faded thermoplastic road markings and weak/damaged road signs, absence of Retro-reflective road studs, missing hazard markings in bridges and culverts, faded km stone and central median kerb painting, bushes in central median and service road along the stretches, damaged bus shelters and vegetation in bus shelters in five NHs stretches.

CHAPTER V

AVAILABILITY OF FACILITIES AND AMENITIES TO ROAD USERS

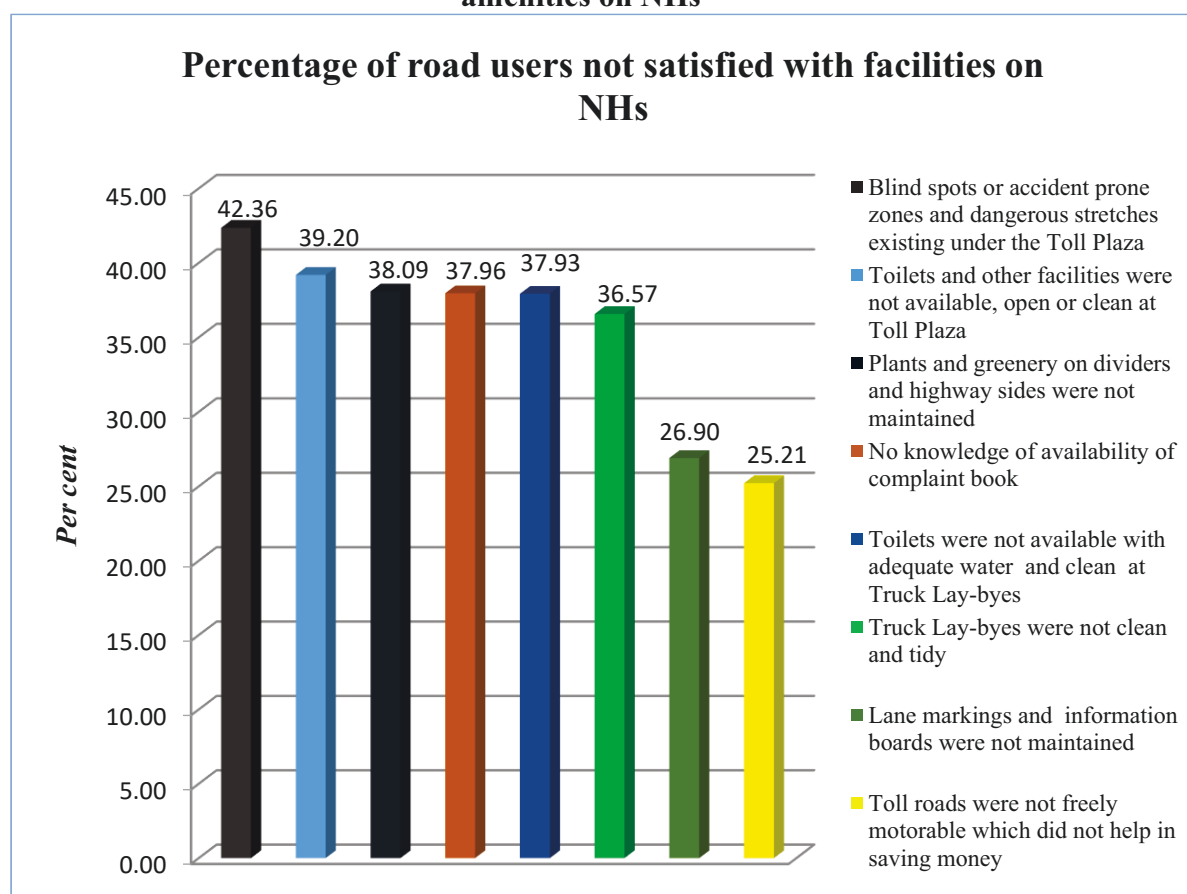
Chapter V

Availability of Facilities and Amenities to Road Users

In addition to mandated upkeep and maintenance of NHs, NHAI and its Concessionaires were to provide allied facilities such as wayside amenities, Truck Lay-byes, rest areas, restaurants, light refreshment stalls, toilets, Incident Management Services and landscaping and green highways management. The monitoring of provision of these facilities was done by NHAI through Independent Engineers. Audit reviewed the availability, quality and maintenance of allied facilities in the 37 NH stretches of selected 41 Toll Plazas. Audit findings on the availability and status of the facilities and amenities on NHs are discussed in succeeding paragraphs.

Further, a questionnaire containing questions on the maintenance and upkeep of the NHs and its connected facilities was distributed among the road users for collection of feedback during the joint inspection of Toll Plazas/stretchers by Audit team, NHAI officers and representatives of Independent Engineers. There were 597 road users⁴⁰ who responded to the questions in all selected Toll Plazas under six Regional Offices and Truck Lay-byes. It was observed from the responses that a high percentage of road users were not satisfied with the provision of facilities and amenities on NHs as depicted in Chart 1.

Chart 1: Percentage of road users not satisfied with the provision of facilities and amenities on NHs



⁴⁰ Road users were randomly selected at toll plazas/truck lay-byes who voluntarily gave feedback.

It was observed from the responses of the road users that 42.36 *per cent* road users opined that blind spots or accident prone zones were existing on the NHs. It was informed by 38.09 *per cent* road users that plants and greenery on dividers and highway sides were not well maintained. Availability of clean operational toilets and other facilities was categorized as unsatisfactory by 39.20 *per cent* of road users while 37.96 *per cent* road users did not know about availability of complaint book at Toll Plazas. Similarly, 37.93 *per cent* respondents were unsatisfied with availability of clean free toilets with adequate water at Truck Lay-byes and 36.57 *per cent* stated that Truck Lay-byes were not clean and tidy. Lane markings/information boards on NHs were not well maintained as responded by 26.90 *per cent* road users and 25.21 *per cent* road users did not find toll roads smooth and freely motorable.

Ministry/NHAI appreciated the initiative by Audit for inviting feedback from the road users and stated that contractors/Concessionaires have been instructed to provide the facilities as part of good industry practice.

Recommendation No. 18

Ministry/NHAI may devise a Standard Operating Procedure for collecting feedback from road users to assess the deficiencies in the quality of allied facilities and to initiate remedial actions to provide better amenities and services.

5.1 Non-maintenance of toilets built under Swachh Bharat Mission

MoRTH directed (August 2016) NHAI to provide toilets under Swachh Bharat Mission on both sides of all Toll Plazas. As per MoRTH directions, toilet facilities in either direction of Toll Plazas were to be provided under Swachh Bharat Mission either by granting Change of Scope in BOT contracts or by inviting tenders for Public Funded projects by NHAI. MoRTH and NHAI further clarified that toilets existing in the administrative block of the Toll Plazas were not to be considered under Swachh Bharat Mission and separate toilet facilities were to be provided. These toilets were to be properly maintained and made available round the clock. The status of construction and operation of Swachh Bharat Mission toilets as per records, joint inspection⁴¹ and updated status based on NHAI reply (July 2021) is given in Table 17.

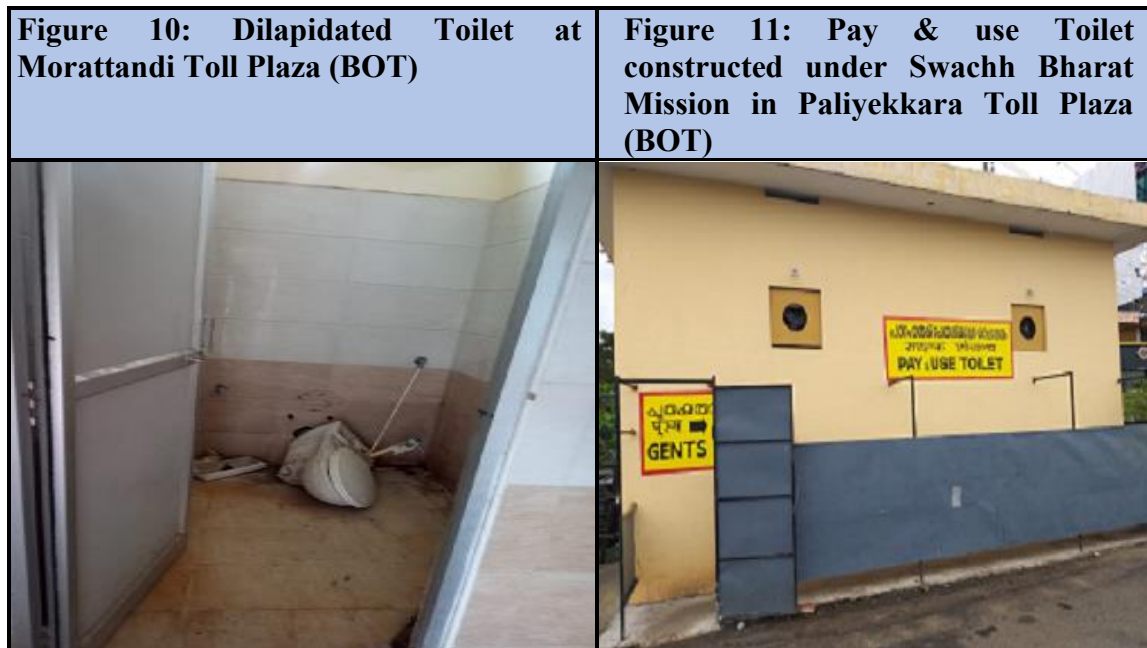
Table 17: Status of construction and operation of Swachh Bharat Mission toilets

Sl. No.	Name of Toll Plaza	Whether Swachh Bharat Mission toilets were constructed on both sides of Toll Plaza
1.	Neelamangala (BOT-towards Bengaluru)	No
2.	Kamkole (BOT)	
3.	KN Hundy (Public Funded)	
4.	Pottipadu (Public Funded)	
5.	Madapam (Public Funded)	

⁴¹ *Joint inspection by Audit team, officers of NHAI Team and Independent Engineer during October 2020 to January 2021*

Sl. No.	Name of Toll Plaza	Whether Swachh Bharat Mission toilets were constructed on both sides of Toll Plaza
6.	Morattandi (BOT)	Yes (on Right Hand Side only)
7.	Kodai Road (BOT)	
8.	Harval (Public Funded)	
9.	Kannolli (Public Funded)	
10.	Bollapalli (BOT)	
11.	Tanguturu (BOT)	
12.	Vempadu (Public Funded)	
13.	Unguturu (Public Funded)	
14.	Athur (Public Funded)	Yes (on Left Hand Side only)
15.	Paranur (Public Funded)	
16.	Sullurpet (BOT)	
17.	Eethakota (Public Funded)	
18.	Krishnavaram (Public Funded)	Yes (Non-Operational)
19.	Chalageri (Public Funded)	
20.	Kumbalam (Public Funded)	Yes (Non-Operational on Right Hand Side)
21.	Sadahalli (BOT)	

From the above status, it was noted that out of 41 Toll Plazas, toilets were not constructed in five Toll Plazas and toilets were constructed only on one side in 13 Toll Plazas. In Kumbalam, and Chalageri Toll Plazas, toilets were constructed but were non-operational⁴² and in Sadahalli Toll Plaza, the toilets were constructed on both sides but was non-operational on Right Hand Side.



⁴² Awaiting appointment of agency for Kumbalam Toll Plaza and due to lack of maintenance at Chalageri Toll Plaza

It was also noticed that:

- Toilet was found in dilapidated condition at Morattandi BOT Toll Plaza
- Road users were charged by the Highway Nest Mini contractor for using the toilet constructed under Swachh Bharat Mission at Paliyekkara Toll Plaza

NHAI/Ministry, in its reply (July 2021), confirmed that toilets were not constructed at Pottipadu Toll Plaza due to land constraint. With respect to seven Toll Plazas⁴³ under Project Implementation Unit Nellore and Rajamundry, NHAI stated that as toilet facilities were available in the premises of the Toll Plazas, the Concessionaires were not entrusted with further construction of toilets under Swachh Bharat Mission. NHAI did not reply in respect of 14 Toll Plazas⁴⁴.

The above reply with respect to seven toll plazas under Project Implementation Unit Nellore and Project Implementation Unit Rajamundry was not found tenable in view of NHAI circular dated 8 August 2016 and Regional Office Chennai letter dated 31 October 2016 which required that toilets under Swachh Bharat Mission were to be provided separately irrespective of existing toilets in administrative blocks of Toll Plazas.

The deficiencies pointed out in audit indicated that Project Implementation Units of NHAI and Independent Engineers did not monitor the construction, operation and maintenance of these facilities diligently.

Recommendation No. 19

NHAI needs to ensure that the benefits of Swachh Bharat Mission toilets are made available to road users by speeding up the processes of land acquisition, construction, award of contracts and continuous supervision of their maintenance.

5.2 Non-functioning of Highway Nest Mini

NHAI decided (November 2017) to develop facility of Highway Nest Mini on both sides of Toll Plazas to facilitate the road users. Highway Nest Mini shall have essential facilities i.e., toilets, water ATM, packaged food and hot and cold beverages. The structure of Highway Nest Mini should be prefabricated structure and be executed under Change of Scope to the existing concessionaire/contractor.

These facilities were to be operationalised at all Toll Plazas by March 2018. The status of construction and operation of Highway Nest Mini as per records, joint inspection and updated status based on NHAI reply (July 2021) is given in Table 18.

⁴³ *Sullurpet, Bollapalli, Tanguturu, Vempadu, Eethakota, Unguturu, and Krishnavaram Toll Plazas*

⁴⁴ *Toll Plaza at Athur, Paranur, Kamkole, Madapam, Neelamangala, KN Hundy, Kodai Road, Sadahalli, Harval, Kannolli, Kumbalam, Chalageri and Paliyekkara. There was no specific reply for Morattandi Toll Plaza.*

Table 18: Status of construction and operation of Highway Nest Mini

Sl. No.	Name of Toll Plaza	Whether Highway Nest Mini was constructed on both sides of Toll Plaza	
1.	Kodai Road (BOT)	Highway Nest Mini was not available at the Toll Plaza.	
2.	Kumbalam (Public Funded)		
3.	Sengurichi (BOT)		
4.	Unguturu (Public Funded)		
5.	Eethakota (Public Funded)		
6.	Krishnavaram (Public Funded)		
7.	Bollapalli (BOT)		
8.	Tanguturu (BOT)		
9.	Hebbalu (Public Funded)		
10.	Chalageri (Public Funded)		
11.	Sullurpet (BOT)		
12.	Morattandi (BOT)	Yes (on Right Hand Side only)	
		Reasons for non-operation	
13.	Lembalakudi (Public Funded)	Yes (Non-operational)	Non-operation of Highway Nest Mini by the contractor to whom they were given for operations.
14.	Venkatachalam (BOT)		Highway Nest Mini was displaced in order to build a new Highway Nest Mini in the proximity of existing toll plaza in order to get access.
15.	Madapam (Public Funded)		Non-appointment of contractor for Operation & Maintenance.
16.	KN Hundy (Public Funded)		Non-availability of sufficient space.
17.	Neelamangala (BOT)		Highway Nest Mini not operated on Left Hand Side due to polluted ground water.
18.	Kaniyur (BOT)	Yes (Non-operational on Left Hand Side)	

From the above status, it was noted that:

- Out of 41 Toll Plazas, Highway Nest Mini were not constructed in 11 Toll Plazas and constructed only on Right Hand Side of NH in Morattandi Toll Plaza.
- Out of 29 Toll Plazas where Highway Nest Mini were constructed on both sides, Highway Nest Mini were not operationalised in case of six Toll Plazas



NHAI/Ministry, in its reply (July 2021), stated that:

- **For non-construction of Highway Nest Mini in 11 Toll Plazas and only on Right Hand Side in Morattandi Toll Plaza**

In the case of Eethakota, Unguturu, Krishnavaram Toll Plazas, Concessionaire would take up work. In the case of Morattandi Toll Plaza, Highway Nest Mini could not be taken up due to land constraint. Location of Highway Nest Mini was under finalisation at Bollapalli and Tanguturu Toll Plazas. NHAI did not offer remarks for other six Toll Plazas.

The fact remains that Highway Nest Mini on both sides of highways were not constructed in the 12 Toll Plazas (July 2021).

- **For non-operational Highway Nest Mini in five Toll Plazas**

NHAI replied that Highway Nest Mini at Neelamangala Toll Plaza was non-operational due to insufficient land. Highway Nest Mini at KN Hundy Toll Plaza would be operational after bidding process while agency for Highway Nest Mini could not be fixed due to COVID 19 pandemic at Lembalakudi Toll Plaza. NHAI did not offer reply for two-Toll Plazas.

The fact remains that the Highway Nest Mini were non-operational (July 2021).

- **Non-operational Highway Nest Mini on one side in Kaniyur Toll Plaza**

NHAI stated that due to polluted water Highway Nest Mini was not operational (July 2021).

Above facts prove that the objectives of providing Highway Nest Mini to road users were not achieved due to non-operation/non-construction of Highway Nest Mini.

Recommendation No. 20

NHAI needs to ensure that the facilities of Highway Nest Mini are made available to road users by speeding up the process of land acquisition, construction, award of contracts and making them operational.

5.3 Non-compliance to landscaping and plantation guidelines

MoRTH emphasised the need for landscaping and plantation of trees along the NHs for reducing the adverse effects of air and noise pollution, soil erosion and to provide shade. Landscaping and plantation of trees along the NHs had to be done as per the provisions of Green Highways (Plantation, Transplantation, Beautification and Maintenance) Policy-2015 and Indian Roads Congress Special Publication: 21-2009 – Guidelines on landscaping and tree plantation. Plantation and maintenance were either entrusted to Department of Forests, NGOs, contractors appointed by NHAI or to the Concessionaires. As per the Green Highway Policy 2015 and Indian Road Congress guidelines 2009, the total number of avenue plants per km should be 333. Total number of median plants per km should be 333 and 666 in case of single row and double row respectively. Data provided by five Regional Offices on the shortfall in avenue and median plantations is given below in Table 19.

Table 19: Shortfall in Avenue and Median plantation along the National Highways

Regional Office	Total Project Length (km)	Target Plantation as per NHAI (No.)		Shortfall in Plantation (March 2021)			
		Avenue (No.)	Median (No.)	Avenue (No.)	Median (No.)	Avenue (in per cent)	Median (in per cent)
Chennai	1,520	3,19,642	5,79,081	1,18,826	79,668	37.17	13.75
Thiruvanthapuram	215	9,393	79,435	4,681	10,227	49.83	12.87
Madurai	1,933	9,58,059	9,00,603	7,95,230	4,80,778	83.00	53.38
Bengaluru	3,016	11,83,882	12,52,580	8,76,182	4,63,177	74.00	36.98
Vijayawada	2,130	8,42,039	9,59,365	3,79,325	2,72,635	45.04	28.42
Total	8,814	33,13,015	37,71,064	21,74,244	13,06,485	65.63	34.65

Audit observed from the data collected from Regional Offices that on the total project length of 8,814 km under five Regional Offices, the shortfall in avenue and median plantations was 65.63 per cent and 34.65 per cent respectively from the target plantation (March 2021).

NHAI/ Ministry replied (July 2021) in respect of Regional Office Bengaluru that plantation being continuous activity, the balance plantation would be taken up in the coming years and target would be achieved. NHAI/Ministry did not reply in respect of Regional Office Chennai, Madurai, Kerala and Vijayawada.

Thus, NHAI failed to achieve avenue and median plantation targets to achieve eco-friendly highways in a sustainable manner.

5.4 Non-upgradation of Incident Management Services

Incident Management Services required deployment of Ambulance and Patrol Vehicles for effective Operation and Maintenance of NHs and safety of road users. The BOT Concessionaires had their own vehicles deployed and NHAI/Operation and Maintenance Concessionaires had hired these services through issue of tenders for Public Funded Toll Plazas.

NHAI issued guidelines on strengthening the Incident Management Services (Policy Guidelines No. 12.19 dated 20 March 2018) which *inter alia* included uniform specifications for Ambulance and Patrol vehicles to strengthen and standardise the operations of Incident Management Services available on NHs.

Inspection of sample vehicles and review by Audit revealed that Incident Management Services vehicles at 14 Toll Plazas⁴⁵ (six Public Funded and eight BOT Toll Plazas) were not upgraded in line with NHAI Policy. The vehicles were old, overused and condemnable; the ambulances were of smaller dimension against norms and envisaged equipment in Patrol Vehicles were not available. Further, no ambulances, patrol vehicles and cranes were operated on the Kerala Border to Kollegala stretch (NH 766 in Kerala) under KN Hundy Toll Plaza since toll commencement (December 2019) on the stretch.

Figure 14: Ambulance with smaller dimension and not as per the specifications at Kaniyur Toll Plaza (BOT)



Figure 15: Old and condemnable Patrol Vehicle being used at Paranur Toll Plaza (Public Funded)



NHAI/Ministry, in its reply (July 2021), stated that:

- the patrol vehicles were upgraded and action was being taken to upgrade the ambulances (Palayam Toll Plaza, Vaiguntham Toll Plaza and Krishnagiri Toll Plaza)
- Incident Management Services vehicles were partially upgraded and action was being initiated to upgrade as per guidelines (Morattandi Toll Plaza)
- the Concessionaire had been requested to submit change of scope proposal for upgradation of Incident Management Services and same was awaited (Kaniyur Toll Plaza).

⁴⁵ **Public Funded Toll Plazas: Paranur, Athur, Lembalakudi, Rolmamda, Chalageri, Gamjal and BOT Toll Plazas: Morattandi, Kaniyur, Velanchettiyur, Kodai Road, Vaiguntham, Krishnagiri, Palayam and Gudur**

In respect of remaining nine Toll Plazas⁴⁶, NHAI/Ministry did not offer any reply.

Thus, NHAI could not upgrade/strengthen the Incident Management Services in line with the Policy Guidelines in 14 test checked Toll Plazas.

Recommendation No. 21

NHAI may ensure that the Incident Management Services vehicles are upgraded/strengthened as per its policy guidelines.

5.5 Non-Maintenance of Truck Lay-byes

The Concession Agreements provided that Truck Lay-byes containing parking facility, rest rooms, toilets, drinking water, security and proper lighting were to be constructed along NHs. Audit reviewed the availability of Truck Lay-byes in all the 41 Toll Plazas (21 BOT and 20 Public Funded) under 37 stretches during field audit from October 2020 to January 2021 and status was updated after NHAI reply. The audit findings and deficiencies noticed in this regard are given below and also in Table 20:

- **Public Funded Toll Plazas**– There were no Truck Lay-byes in eight Toll Plazas⁴⁷. Truck Lay-byes was not constructed by the Concessionaire in spite of the requirement in Lembalakudi⁴⁸ Toll Plaza. Truck Lay-byes was not constructed due to pending court case in Nathavalasa Toll Plaza and the same was under construction in Madapam Toll Plaza.
- **BOT Toll Plazas**- There was no provision for Truck Lay-byes in Concession Agreements of Paliyekkara and Sadahalli Toll Plazas. Truck Lay-byes was not provided in Neelamangala Toll Plaza due to non-availability of land.

Table 20: Deficiencies in maintenance of Truck Lay-byes

Type of Deficiency at Truck Lay-Byes	BOT Toll Plaza	Public Funded Toll Plaza
Toilets not available in two Truck Lay-byes	Gaddurur (1)	Kappalur (1)
Toilets not maintained in five Truck Lay-byes	Velanchettiyur (2), Shirur (1)	Paranur (2)
Rest Rooms were not available in nine Truck Lay-byes	Velanchettiyur (2), Kamkole (1), Gaddurur (1), Panthangi (1), Keesara (1)	Kappalur (1), Harval (1), Kannolli (1)
Rest Rooms not maintained in three Truck Lay-byes	Shirur (1)	Paranur (2)
Water Kiosk was not provided in one Truck Lay-bye	-	Kappalur (1)

⁴⁶ *Paranur, Athur, Lembalakudi, Rolmamda, Chalageri, Gamjal, Velanchettiyur, Kodai Road and Gudur*

⁴⁷ *Kumbalam, KN Hundy, Hebbalu, Chalageri, Pottipadu, Unguturu, Eethakota and Krishnavaram*

⁴⁸ *Constructed through BOT(Annuity) Concessionaire who was suspended due to poor performance, now operated by NHAI (Public Funded)*

Figure 16: An incomplete structure in a Truck Lay-bye in Madurai Kanyakumari stretch (Chainage 11.200 km, RHS) - Kappalur Public Funded Toll Plaza



Figure 17: A toilet in the Truck Lay-bye located in Tambaram Tindivanam stretch in shabby & locked condition (Chainage 69.800 km, LHS) - Paranur Public Funded Toll Plaza



Figure 18: Inside view of a toilet in the Truck Lay-bye located in Tambaram Tindivanam stretch (Chainage 69.800 km, LHS) - Paranur Public Funded Toll Plaza



Figure 19: A closed toilet in a Truck Lay-bye located in Karur- Dindigul stretch (Chainage 304.100 km, LHS) - Velanchettiyur BOT Toll Plaza



During joint inspection of Audit team with NHAI officials, it was noticed that:

- there was an incomplete structure of toilet in a Truck Lay-bye on Madurai Kanyakumari stretch (Kappalur Public Funded Toll Plaza)
- the toilets in Truck Lay-bye on Tambaram -Tindivanam stretch was in shabby and locked condition (Paranur Public Funded Toll Plaza)
- the toilet was closed at Truck Lay-bye on Karur - Dindigul stretch (Velanchettiyur BOT Toll Plaza)

NHAI/Ministry, in its reply (July 2021), stated that:

- there was no provision of Truck Lay-bye in the Concession Agreement - Pottipadu Toll Plaza under Project Implementation Unit, Vijayawada.

- Truck Lay-bye could not be constructed due to pending court cases - Nathavalasa Toll Plaza under Project Implementation Unit, Visakhapatnam.
- the Concession Agreement had provision of two Truck Lay-byes and one rest area under ongoing six lane project which will be taken up by the Concessionaire - Madapam Toll Plaza.
- the Toll-Operate-Transfer Concession Agreement provides for Truck Lay-bye and wayside amenities and same would be completed at the earliest - Krishnavaram Toll Plaza, Eethakota Toll Plaza and Unguturu Toll Plaza.

Thus, Truck Lay-byes were not maintained with appropriate facilities like clean toilets, water facilities and rest rooms as per the Concession Agreements or were not constructed due to lacunae in the Concession Agreements.

Recommendation No. 22

NHAI may ensure that the Truck Lay-byes are provided on NHs and are well-maintained with all required facilities.

5.6 Corrective actions/measures taken based on audit observations and intimated to Audit by NHAI/Ministry reply (July 2021)

- On being pointed out by Audit, NHAI recovered (March 2021) penalty of ₹14.30 lakh from contractor in Paranur Toll Plaza and Athur Toll Plaza for non-upgradation of Incident Management Services vehicles based on NHAI Policy Guidelines No. 12.19 dated 20 March 2018.
- Based on audit findings, NHAI initiated corrective action in respect of i) non-deployment of adequate manpower at Toll Plazas; ii) non-display of availability of complaint register at toll booth and non-reporting of complaint registered in the complaint book maintained at Toll Plaza to NHAI; iii) non-working of Highway Traffic Management System (HTMS) in five BOT Toll Plazas; and iv) deficiency in operation/construction of wayside amenities in nine Toll Plazas.

CHAPTER VI
CONCLUSION

Chapter VI

Conclusion

Amendments in NH Fee Rules, 2008, in the many instances were not complied with by NHAI regarding reduction of user fee to 75 per cent in case of upgradation of NH projects from four lane to six lane highways, non-charging of user fee in case of delay in upgradation of NH projects and revision of fee for standalone structures having length of more than 60 meters. Collection of toll fee by NHAI without complying with the provisions of amended NH Fee Rules, 2008 resulted in denying relief to the road users to the extent of ₹154.15 crore and short collection of toll of ₹16.68 crore by NHAI as well.

There were delays in commencement of toll collection within 45 days from the date of completion of the sections of national highways. This non-compliance of NH Fee Rules, 2008 on Public Funded Projects resulted in loss of revenue to NHAI by ₹68.12 crore.

There was lack of provision of revenue sharing in two Concession Agreements for two sections of national highway constructed by NHAI. These two sections were handed over to BOT Concessionaires for toll collection along with the sections constructed by the BOT Concessionaires on the similar negative grant (premium) payment terms. This resulted in lower negative grant (premium) payments as compared to earnings under revenue sharing basis and consequent loss to NHAI by ₹133.36 crore.

A scheme for deferment of premium payments for stressed road projects of the BOT(Toll) Concessionaires stipulated that the Concessionaire would be required to provide additional comfort by way of appropriate Bank/Corporate Guarantee to the extent of maximum difference between premium payable as per contracted agreement and proposed under the revised payment schedule to adequately protect the interest of NHAI/Government. However, NHAI failed to collect Bank Guarantee/Corporate Guarantee from Concessionaires and could not recover revised premium.

There were shortfalls in maintenance of National Highways by NHAI and its Concessionaires, as overlay works and routine maintenance were found lacking in majority of the roads reviewed in audit. NHAI also failed to recover damages of ₹619.74 crore from various Concessionaires on account of non-taking up/delay in overlay works and routine maintenance.

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Independent Engineers were not appointed for three national highway stretches for smooth conduct and maintenance of the projects, rectifying the defects in road maintenance and road furniture by way of regular inspection. In case of 14 Toll plazas, deficiency in Incident Management Services on national highways was observed.

Highway Nest Mini to provide essential facilities i.e., toilets, water ATM, packaged food and hot and cold beverages to road users were not constructed at 11 Toll plazas. Similarly, Truck Lay-byes containing parking facility, rest rooms, toilets, drinking water, security and proper lighting were not constructed along national highways in case of 14 Toll Plazas.

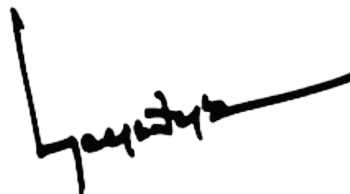
Thus, non-compliance to NH Fee Rules, 2008 caused undue burden on the road users and loss of revenue to NHAI as well.

New Delhi
Dated: 28 March 2023



(R. G. Viswanathan)
Deputy Comptroller and Auditor General
(Commercial) and Chairman, Audit Board

Countersigned



New Delhi
Dated: 28 March 2023

(Girish Chandra Murmu)
Comptroller and Auditor General of India

Annexures

Annexure-I
(Referred to in Para 2.1)
Year-wise details of toll revenue in Southern Indian States

Name of the State	(₹ in crore)				
	2017-18	2018-19	2019-20	2020-21	Total
Tamil Nadu	2,345.92	2,502.89	2,650.00	2,440.95	9,939.76
Karnataka	1,720.38	1,866.88	1,892.51	1,831.41	7,311.18
Andhra Pradesh	1,496.57	1,453.55	1,778.57	1,957.46	6,686.15
Telangana	854.60	942.09	1,016.48	1,043.21	3,856.38
Kerala	167.76	180.36	200.36	181.93	730.41
Total Toll Revenue - Five Southern States	6,585.23	6,945.77	7,537.92	7,454.96	28,523.88
Total Toll Revenue - All India	21,948.13	24,396.19	26,850.71	26,030.29	99,225.30
Toll Revenue - Southern States (in per cent)	30.00	28.47	28.07	28.64	28.75

Annexure-II A
(Referred to in Para 3.1.1)
Details of collection beyond the scheduled completion period of NH upgradation from four lane to six lane
(Nathavalasa Toll Plaza)

Sl No	Name of Toll Plaza	Period	Excess Revenue collected (in ₹)
1.	Nathavalasa	14 May 2020 to 11 September 2020	16,35,67,800 (₹13,51,800 per day remittance for 121 days)
2.		12 September 2020 to 14 October 2020	4,15,46,967 (₹12,58,999 per day remittance for 33 days)
3.		15 October 2020 to 4 February 2021	17,71,96,430 (₹15,68,110 per day remittance for 113 days)
4.		5 February 2021 to 31 March 2021	9,99,99,900 (₹18,18,180 per day remittance for 55 days)
		Total	48,23,11,097 or say 48.23 crore

Annexure-II B
(Referred to in Para 3.1.1)
Details of collection beyond the scheduled completion period of NH upgradation from four lane to six lane
(Chalageri and Hebbalu Toll Plaza)

Sl. No.	Name of Toll Plaza	Month	Excess Revenue collected (Amount in ₹)
1.	Chalageri	July 2020	69,49,678 (Average for 7 days)
		August 2020	3,58,28,315
		September 2020	4,14,12,760
		October 2020	4,94,30,130
		November 2020	4,94,75,770
		December 2020	5,55,36,735
		January 2021	4,59,29,785
		February 2021	5,66,07,885
		March 2021	6,14,00,300
2.	Hebbalu	June 2020	67,16,951 (Average for 6 days)
		July 2020	2,99,25,995
		August 2020	3,32,25,955
		September 2020	3,59,60,310
		October 2020	3,94,31,315
		November 2020	3,97,42,010
		December 2020	4,43,22,095
		January 2021	4,19,85,730
		February 2021	4,05,07,290
		March 2021	4,51,24,835
		35,69,42,486 or say 35.69 crore	

Annexure-II C

(Referred to in Para 3.1.1)

Details of excess collection of toll fee on account of non-reduction of toll fee to 75 per cent due to upgradation from four lane to eight lane highway (Paranur Toll Plaza)

Sections of Tambaram to Tindivanam stretch of NH 32 in Tamil Nadu	Length of the Sections in kilometers (A)	Toll collected for 52.170 kilometers (B)	Excess Collection (C=B/52.170)*A*25 per cent
Section I: Irumbuliyur to Vandalur (Km 28.000 to Km 30.300)	2.3	1,57,45,12,315 (August 2018 to March 2020)	1,73,53,739
Section II: Vandalur to Guduvanchery (Km 32.700 to Km 38.000)	5.3	1,88,98,96,270 (March 2019 to March 2021)	4,79,99,091
			6,53,52,830 or say 6.54 crore

Annexure-II D

(Referred to in Para 3.1.1)

Details of excess collection of toll fee on account of annual revision of toll fee rates when the stretch was under upgradation from four lane to six lane highway (Madapam Toll Plaza)

Particulars	(Amount in ₹)			2019-20		2020-21	
	Rate in January 2019	Revised Rate in April 2019	Increase in Revised Rate (A)	No. of Vehicles (B)	Excess Toll Charged (Amount in ₹) (A*B)	No. of Vehicles (C)	Excess Toll Charged (Amount in ₹) (A*C)
Car/ Jeep	30	30	0	3,41,902	0	7,28,555	0
LCV	45	50	5	85,262	4,26,310	1,03,800	5,19,000
Bus	95	100	5	24,267	1,21,335	36,782	1,83,910
Truck	95	100	5	1,80,375	9,01,875	1,37,928	6,89,640
3 axle	105	110	5	4,30,903	21,54,515	1,99,954	9,99,770
4-6 axle	150	155	5	8,17,961	40,89,805	4,51,665	22,58,325
Over Sized Vehicles	185	190	5	1,210	6,050	717	3,585
				Total	76,99,890		46,54,230
Return Journey							
Car/ Jeep	45	45	0	2,32,933	0	24,783	0
LCV	70	70	0	26,150	0	9,344	0
Bus/Truck	145	150	5	16,181	80,905	5,200	26,000
Truck	145	150	5	45,220	2,26,100	15,895	79,475
3 axle	160	165	5	15,332	76,660	11,995	59,975
4-6 axle	225	235	10	22,673	2,26,730	13,399	1,33,990
Over Sized Vehicles	275	290	15	5	75	2	30
				Total	6,10,470		2,99,470
				Total	83,10,360		49,53,700
				Grand Total			1,32,64,060 or say 1.33 crore

Annexure-III A

(Referred to in Para 3.1.3)

Details of short collection of toll fee on account of non-implementation of National Highways Fee Amendment Rules dated 16 January 2014 regarding charging structures of length of more than 60 metres on Madurai-Kanyakumari stretch

Sl. No.	Name of Toll Plaza	Year	Toll collected without converting the structures with factor of 10 (₹ in crore) (A)	Pro-rata Toll revenue with converting the structures with factor of 10 (₹ in crore) (B)	Loss of revenue (C=B-A) (₹ in crore)	Remarks
1.	Kappalur	2017-18	31.87	34.72	2.85	Length of tollable highway was 50.857 Km without converting the structures with factor of 10 and after converting it was 55.411 km
		2018-19*	3.89 (for 52.30 km)	4.12	0.23	
2.	Etturvattam	2017-18	40.23	42.95	2.72	Length of tollable highway was 64.20 km without converting the structures with factor of 10 and after converting it was 68.538 km
		2018-19 *	5.82	6.21	0.39	
3.	Salaipudhur	2017-18	39.79	44.57	4.78	Length of tollable highway was 63.50 km without converting the structures with factor of 10 and after converting it was 71.123 km
		2018-19*	5.96	6.67	0.71	
4.	Nanguneri	2017-18	34.45	35.01	0.56	Length of tollable highway was 54.975 km without converting the structures with factor of 10 and after converting it was 55.875 km
		2018-19*	5.37	5.46	0.09	
				Total Loss of Revenue	12.33	

*upto 25 May 2018

Annexure-III B

(Referred to in Para 3.1.3)

Details of short collection of toll fee on account of non-implementation of National Highways Fee Amendment Rules dated 16 January 2014 regarding charging structures of length of more than 60 metres (Kappalur Toll Plaza)

Location of structure at Km (A)	Length of structure (in km) (B)	Structure length taken as normal highway in toll calculation (in km) (C)	Equivalent length of structure after multiply with factor of 10 (in km) (D) =B*10	Differential length for which toll was not collected (in km) (E) =D-C	Year	Length for which revenue was collected (in km) (G)	Revenue collected (₹ in crore) (H)	Loss of revenue for differential length (₹ in crore) (I)=(H/G)*E
Km 33.150	0.0616	0.0616	0.616	0.5544	2017-18	50.857	31.87	0.35
					2018-19		43.38	0.46
					2019-20	52.3	57.81	0.61
					2020-21*		19.37	0.21
Total							1.63	
Km 0.590	0.131	0.131	1.31	1.179	2018-19	52.3	43.38	0.98
					2019-20		57.81	1.30
					2020-21*		19.37	0.44
Total							2.72	

*Till October 2020 because stretch was handed over to a Toll, Operate and Transfer Concessionaire on 19 October 2020

Annexure-IV A

(Referred to in Para 3.2.1)

Details of loss of revenue due to delay in commencement of toll collection in respect of Pollachi – Coimbatore, Kazhakootam to Mukkola and Kerala Border to Kollegala stretches

Sl No	Name of Toll Plaza/Stretch	Provisional Commercial Operation Date	Tolling not started till	No of months for which road not tolled (A)	Monthly collection estimated as per IHMCL survey (₹ in crore) (B)	Loss of Revenue (₹ in crore) (C=A*B)
1.	Pollachi to Coimbatore stretch	9 August 2019	31 March 2021	20	2.433	48.66
	Name of Toll Plaza/Stretch	Provisional Commercial Operation Date	Tolling not started till	No of days for which road not tolled (A)	Per day remittance from contractor from 07.12.2019 (in ₹) (B)	Loss of Revenue (₹ in crore) (C=A*B)
2.	KN Hundy Toll Plaza Kerala Border to Kollegala section	15 June 2017	6 December 2019	905	86,786	7.85
	Name of Toll Plaza/Stretch	Provisional Commercial Operation Date	Tolling not started till	No of days for which road not tolled	Per day remittance from contractor from 02.10.2021 (in ₹) (B)	Loss of Revenue (₹ in crore)
3.	Thiruvallam Toll Plaza Kazhakootam to Mukkola	January 2020	March 2021	455	1,56,999	7.14

Annexure-IV B
(Referred to in Para 3.2.1)
Details of loss of revenue due to delay in commencement of toll collection in respect of Trichy - Karaikudi stretch

Sl. No.	Year	Additional length added in 2019-20 for which revenue lost (in km) (A)	Actual Revenue collected for 34.20 km stretch (₹ in crore) (B)	Pro rata loss of revenue for 2.054 km added in 2019-20 (₹ in crore) (C) =B/34.20*2.054
1.	2017-18	2.054	7.67	0.46
2.	2018-19	2.054	8.13	0.49
			Total	0.95

For annual toll revision of 2017-18 and 2018-19 length of 34.200 km was considered. For 2019-20, length of 36.254 km was considered. Thus, additional length of 2.054 km was added for toll collection from 2019-20.

Annexure –V
(Referred to in Para 4.1)
Details of delay in periodical overlay by NHAI/BOT Concessionaires

Sl. No.	Due date of completion of Overlay works	Status of Overlay work (March 2021)	Status of recovery of damages	NHAI/Ministry Reply (July 2021)	Audit Remarks
1.	<p>Madurai - Kanyakumari (NH 44 in Tamil Nadu) Kappalur Toll Plaza, Etturvattam Toll Plaza, Salaipudhur Toll Plaza, Nanguneri Toll Plaza (OMT) - Raima Toll Road Private Limited</p> <p>Overlay work from Km 169.300 to Km 211.300 was due in March 2016.</p> <p>Overlay work from Km 0.000 to Km 169.300 and Km 211.300 to Km 243.170 was due in March 2017.</p>	<p>Overlay work of Km 0.000 to Km 50.000 was awarded in January 2018 and completed (at risk and cost) in July 2018 i.e., after delay of 16 months.</p> <p>Overlay work of remaining stretch (Km 50.000 to Km 243.170) was not taken up even after delay of 60 months.</p>	<p>Overlay work for Km 0.000 to Km 50.000 awarded at ₹53.84 crore at risk and cost of Operation and Maintenance Concessionaire (Raima Toll Road Private Limited). But cost not claimed by NHAI during settlement (January 2020) after termination of Concession Agreement.</p>	<p>NHAI replied that Toll Transfer has been requested to start the Overlay work from Km 0.000 to Km 243.170.</p>	<p>NHAI accepted the observation on delay in Overlay work but did not reply on non-recovery of ₹53.84 crore which was incurred on risk and cost of Operation and Maintenance Concessionaire.</p>
	<p>Salem-Kumarapalayam (NH 544 in Tamil Nadu) Vaignuntham Toll Plaza (BOT) - Salem Tollways Ltd</p> <p>First and Second overlay work were due in June 2015 and June 2020 respectively.</p>	<p>Even after delay of 69 months overlay work was not taken up.</p>	<p>NHAI claimed damages of ₹102.34 crore from September 2015 till February 2021 but not paid by the Concessionaire.</p>	<p>NHAI replied that the Concessionaire submitted (February 2020) the Roughness Index Test report which was within the limit as per clause 4.3.2 of Concession Agreement. Further, NHAI stated that the Concessionaire agreed to take</p>	<p>The reply is not tenable because renewal coat of Bituminous Concrete shall be laid every 5 years after initial construction or where the roughness value reaches 3000mm/km whichever is earlier as per clause under 4.3.1(ii) of Schedule L of</p>
2.					

Sl. No.	Due date of completion of Overlay works	Status of Overlay work (March 2021)	Status of recovery of damages	NHAI /Ministry Reply (July 2021)	Audit Remarks
3.	Bengaluru-Neelamangala (NH 48 in Karnataka) Neelamangala Toll Plaza (BOT) – Navayuga Bengaluru Tollway Private Limited				
	First and Second overlay work were due in December 2015 and December 2020 respectively.	First Overlay was completed in January 2018 with delay of 25 months. Second overlay not taken up even after delay of three months.	NHAI claimed damages of ₹21.99 crore from December 2015 till January 2018 but not paid by the Concessionaire.	NHAI replied for the second overlay that as per Network Survey Vehicle report roughness index was more than 3000 mm/km and Concessionaire had to complete overlay by December 2020. However, the Concession Agreement was terminated in March 2021 and NHAI had taken over the stretch. The cost of overlay would be recovered from the Concessionaire.	NHAI, in its reply, confirmed the delay and claim for damages from the Concessionaire.
4.	Pondicherry -Tindivanam (NH 32 in Tamil Nadu) Morattandi Toll Plaza (BOT) - Pondicherry Tindivanam Tollway Limited				
	First overlay was due in December 2016	Overlay in progress (taken at risk and cost of Concessionaire by NHAI) since March 2020 with a delay of	NHAI claimed damages of ₹44.84 crore from January 2017 till August 2019 and ₹37.26 crore for overlay work taken up at risk and cost of	NHAI replied that the overlay work was getting done by NHAI at risk and cost of Concessionaire and recovery of damages is being pursued through Escrow Bank.	NHAI, while accepting the observation, stated that the overlay work was in progress and yet to recover the damages.

Sl. No.	Due date of completion of Overlay works	Status of Overlay work (March 2021)	Status of recovery of damages	NHAI /Ministry Reply (July 2021)	Audit Remarks
		51 months.	Concessionaire but not paid by the Concessionaire.		
	Karur-Dindigul (NH 44 in Tamil Nadu) Velanchettiyur Toll Plaza - M/s TN (DK) Expressways Limited (BOT)				
5.	First and Second overlay work were due in November 2014 and November 2019 respectively.	Overlay work was commenced in January 2019 i.e., after delay of 50 months. The overlay of main carriageway was completed but the overlay of service road (19.895 km) and road safety work was in progress with a delay of 76 months for completion of first overlay.	NHAI claimed damages of ₹77.55 crore from December 2014 till March 2018 but the same was not paid by the Concessionaire.	NHAI replied that concessionaire commenced the overlay in January 2019 with delay of 4 years and 2 months and had completed the overlay work except fixing of road furniture. Further, NHAI stated that the final damages for delayed overlay would be re-calculated after completion of road furniture work.	NHAI accepted that there was delay in commencement of overlay and damages were yet to be recovered.
	Dindigul-Samayanaallur (NH 44 in Tamil Nadu) Kodai Road BOT Toll Plaza - DS Toll Road Limited				
6.	First and Second overlay work were due in September 2014 and September 2019 respectively.	First overlay was completed in April 2016 with a delay of 19 months. Second overlay was taken up in February 2021 and the work was in progress with a delay of 18 months in	NHAI claimed damages of ₹34.19 crore from September 2014 till January 2021 for delay in first and second overlay but the same was not paid by the Concessionaire.	NHAI replied that penalty of ₹14.34 crore and ₹19.86 crore for delay in completion of first and second overlay was claimed in January 2019 and January 2021 respectively.	NHAI accepted that there was delay in completion of overlays. Damages/penalty were yet to be recovered.

Sl. No.	Due date of completion of Overlay works	Status of Overlay work (March 2021)	Status of recovery of damages	NHAI /Ministry Reply (July 2021)	Audit Remarks
		completion of the overlay work.			
	Thirissur-Edapally (NH 544 in Kerala) Paliyekkara BOT Toll Plaza - Guruvayoor Infrastructure Private Limited				
7.	<p>First and Second overlay work were due in December 2016 and December 2021 respectively.</p> <p>First overlay work was taken up in March 2017. However, Concessionaire commenced the overlay for 8.14 km road stretch in October 2019 and still 1.40 km was to be completed. Thus, there was delay of 51 months in completion of first overlay.</p> <p>Further, Concessionaire applied micro surfacing with less thickness instead of 40 MM Bituminous Concrete in main carriageway & 25 MM Semi Dense Bituminous</p>	<p>NHAI claimed damages of ₹49.51 crore till March 2021 from Concessionaire including interest of ₹17.95 crore but the same was not paid by the Concessionaire.</p>	<p>NHAI replied that the penalty amounting to ₹185.41 crore including penalty for delay in overlaying and overlaying with micro surfacing instead of Bituminous Concrete/Semi Dense Bituminous Concrete. The damages were yet to be recovered.</p> <p>NHAI replied that the penalty amounting to ₹185.41 crore including penalty for delay in overlaying and overlaying with micro surfacing instead of Bituminous Concrete/Semi Dense Bituminous Concrete. The damages were yet to be recovered.</p> <p>Further, NHAI replied that second overlay work which was to be completed in December 2021 is in progress with Bituminous Concrete of 40 MM thickness.</p>	<p>NHAI reply confirmed that there were delay in overlay and overlaying with micro surfacing instead of Bituminous Concrete/Semi Dense Bituminous Concrete. The damages were yet to be recovered.</p>	

Sl. No.	Due date of completion of Overlay works	Status of Overlay work (March 2021)	Status of recovery of damages	NHAI /Ministry Reply (July 2021)	Audit Remarks
		Concrete in service roads.			
8.	Second overlay was due in September 2019.	Second overlay work commenced in June 2019 and completed in January 2020 with a delay of four months.	NHAI claimed ₹2.91 crore as damages from Concessionaire as per NHAI reply dated 19 July 2021	NHAI replied that overlaying is in progress and damages applicable as per Concession Agreement would be imposed and recovered.	NHAI, in its reply, confirmed the delay in commencement of work.
9.	<p>Nandigama to Ibrahimpatnam: Second overlay was due in September 2014</p> <p>Ibrahimpatnam to Vijayawada: First, second and third overlay were due in March 2006, March 2011 and March 2016 respectively.</p>	<p>Nandigama to Ibrahimpatnam: Second overlay completed in February 2015 with a delay of five months.</p> <p>Ibrahimpatnam to Vijayawada: First second and third overlay were completed in May 2006, March 2013 and in April 2018 respectively with a delay of two months, 24 months and 25 months in completion of first, second and third overlay respectively.</p>	<p>Nandigama to Ibrahimpatnam: NHAI claimed damages of ₹10.37 crore (₹10.30 crore as damages and ₹0.07 crore as interest) from March 2006 till December 2018 from the Concessionaire and matter is with Conciliation Committee of Independent Expert.</p>	<p>Nandigama to Ibrahimpatnam: NHAI replied that ₹10.37 crore was claimed from Concessionaire for delay in carrying out first, second and third overlay and the matter has been referred to Conciliation Committee of Independent Expert.</p>	<p>Nandigama to Ibrahimpatnam: The reply confirmed that there was delay in completion of overlay work.</p>

Sl. No.	Due date of completion of Overlay works	Status of Overlay work (March 2021)	Status of recovery of damages	NHAI /Ministry Reply (July 2021)	Audit Remarks
10.	Tada-Nellore (NH 16 in Andhra Pradesh)	Sullurpet BOT Toll Plaza - Swarna Tollways Private Limited			
	First and Second overlay work were due in February 2009 and February 2014 respectively.	First and Second overlay work were completed in January 2010 and October 2014 with a delay of 10 months and eight months respectively.	NHAI claimed damages of ₹10.31 crore but the same was not paid by the Concessionaire.	NHAI replied that damages of ₹10.31 crore was claimed from Concessionaire and the same has not been paid. It was also stated that the matter has been referred for amicable settlement process.	The reply confirmed that there was delay in completion of overlay work.

Annexure-VI
(Referred to in Para 4.8)
Details of stretches where either road survey using Network Survey Vehicle was not conducted or overlay work was not taken up subsequently

Observation	Name of the stretch	NHAI/ Ministry Reply
Survey with a Network Survey Vehicle not conducted	Tambaram – Tindivanam, PF stretch (Athur and Paranur Toll Plazas) and Pondicherry to Tindivanam, BOT stretch (Moratandi Toll Plaza) Ulundurpet-Padalur, BOT stretch (Sengurichi Toll Plaza)	No reply given by NHAI/Ministry. Network Survey Vehicle would be taken up on priority as provision for the same is included in new Independent Engineer agreement with M/s Feedback Survey with a Network Survey Vehicle was conducted after audit observation.
Survey with a Network Survey Vehicle conducted, but failed to carry out overlay in sections graded as poor in Network Survey Vehicle survey	Salem – Kumarapalayam, BOT stretch (Vaiguntham Toll Plaza); Hosur-Krishnagiri, BOT stretch (Krishnagiri Toll Plaza) and Krishnagiri-Thumbipadi Ghat, BOT stretch (Palayam Toll Plaza) Madurai-Kanyakumari – 197.50 km was graded poor out of 771.08 km in January 2019 but overlay was taken up in April 2021. Trichy-Karaikudi – 12.6 km was graded poor (June 2020) out of 158.90 km Diwancheruvu- Siddhantham (Eethakota Toll Plaza) were graded poor (November 2020) with ravelling, cracking etc. Siddhantham-Gundugolanu (Unguturu Toll Plaza) were graded poor (July 2020) with ravelling, cracking etc.	No reply given by NHAI/Ministry The estimate for overlay work as observed in Network Survey Vehicle was prepared in September 2020 and work would be taken up. Necessary action would be taken to rectify the defects on receipt of report of the survey carried out by a Toll, Operate Transfer Concessionaire through Central Road Research Institute.

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