CHAPTER VI

Detailed Compliance Audit on Odisha State Road Projects

CHAPTER VI

WORKS DEPARTMENT

6. Detailed Compliance Audit on Odisha State Road Projects

6.1 Introduction

With a view to removing transport bottlenecks in targeted transport corridors, for greater investment and economic and social development activities in the State, the Odisha State Road Project (OSRP) was implemented in two phases by the Odisha Works Department (OWD) with World Bank loan assistance.

The Government of Odisha (GoO) entered into a loan agreement with the World Bank (WB) during January 2009. The estimated cost of project was ₹1,431.19 crore (US$ 322.5 million) and the WB loan and State Government Share was ₹953.24 crore and ₹477.95 crore respectively. The initial project period was for five years (2009-14) and it was extended upto June 2016.

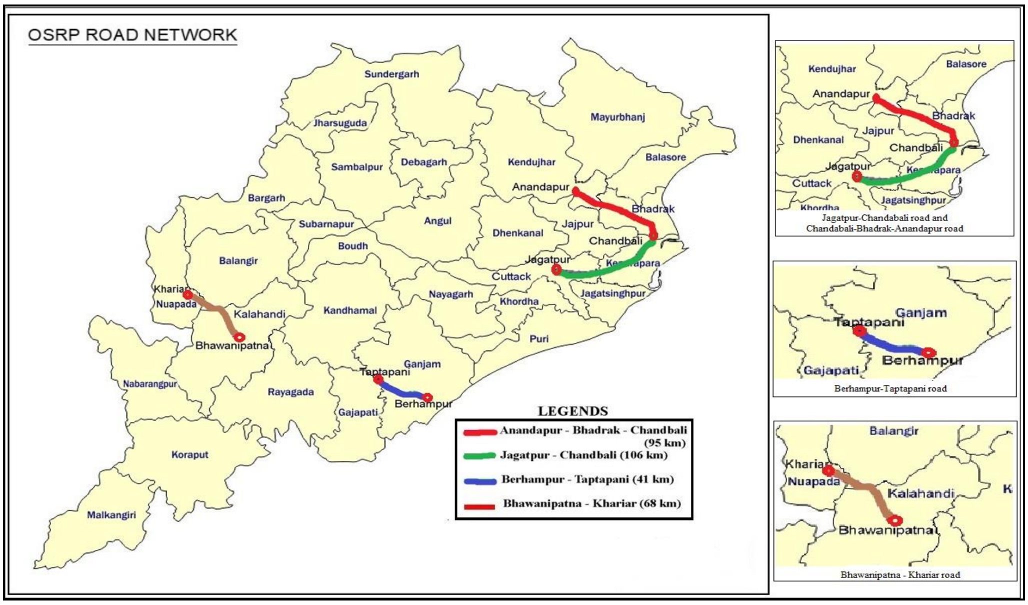
The project comprised of two components: (a) Road Corridor Improvement Component and (b) Public Private Partnership (PPP), for enabling policy and institutional development, and the implementation support component. The evaluation for 461 km of six individual roads of the project was done (August 2008) as a whole but the number of roads and the road length was reduced to four roads and 310 km (January 2013) due to reduction of project scope. This was mainly due to implementation delays, change in the Government policy, and dropping of some roads for other programs. The expenditure of the projects was regulated through the State budget and reimbursement claims were subsequently submitted to the World Bank.

Due to slow progress of implementation, the World Bank loan was closed (June 2016), by which time only 150 km of road could be completed, which was 33 *per cent* of the initial target of 461 km. Thereafter, the balance funding of the project had to be met out of the Budget Provisions under State plan. Thus, OWD could use World Bank loan of ₹419.12 crore (upto June 2016) against the agreed amount of ₹953.24 crore and 56 *per cent* of the original WB loan could not be disbursed.

In the project appraisal document, the design standards adopted for the upgrading component of the project were consistent with the specifications for state highways, as per Indian standards, to cater for traffic flow over the next 20 years.

The following four roads were covered under OSRP, viz. i) Bhawanipatna – Khariar (68 km), ii) Chandabali - Bhadrak - Anandapur (95 km), iii) Berhampur -Taptapani (41 km) and iv) Jagatpur-Chandabali (106 km).

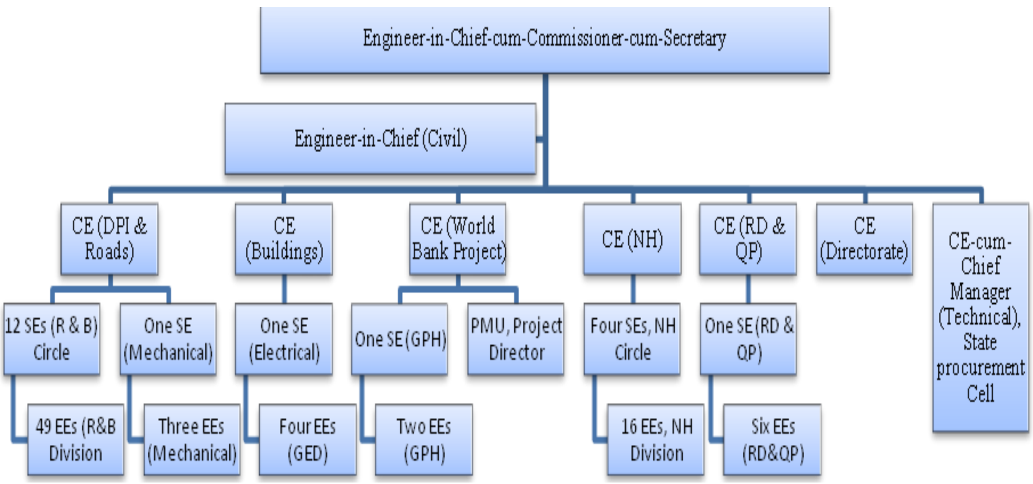
Map 3: Map showing the location of the roads developed under OSRP



6.1.1 Organisation Structure

The Odisha Works Department (OWD) is headed by the Engineer-in-Chief-cum-Commissioner-cum-Secretary to Government. It has one Engineer-In-Chief (Civil), seven Chief Engineers and 20 Superintending Engineers, who are responsible for the administration and general professional control of the public works of the Department, within their Circles. At the Divisional level, the Executive Engineers are the executive heads of the Administrative Units of the Department. There are 80 Divisional Officers in charge of Public Works Divisions in the State. For OSRP, a Project Management Unit (PMU) was established in OWD since 2005, to handle the preparation and to manage the implementation of the project during the execution stage. The PMU is headed by the Chief Engineer (World Bank Project) and assisted by six Executive Engineers (EEs) and one Divisional Forest Officer (DFO). The four roads covered under the project were completed (April 2021) and presently the respective divisions are looking after the maintenance of the project roads.

Organogram of Odisha Works Department



6.1.2 Audit Objectives and criteria

The objectives of this detailed compliance audit were to assess whether the planning process, including survey and investigation, for construction of road projects was efficient; financial management of the project was prudent; tendering and execution of project was carried out, ensuring economy, efficiency and effectiveness; and the monitoring mechanism of project was adequate and effective.

The Audit Criteria for this audit were sourced from: (i) World Bank Guidelines and orders, Scheme guidelines/Circulars and Instructions of the Government of India/Government of Odisha, issued from time to time (ii) Detailed project reports, standard specifications and contract conditions (iii) Indian Road Congress Guidelines/MoRT&H specifications/ Bureau of Indian Standards / State Schedule of Rates and Analysis of Rates (iv) Odisha Public Works Department Code and Manual (v) Terms and conditions of World Bank Loan Agreement and works agreements (vi) Project Appraisal Document of the World Bank (vii) Finance Manual of OSRP (viii) Odisha Budget Manual 1963 and (ix) Inspection Notes of higher authorities etc.

6.1.3 Scope of Audit and Methodology

The Detailed Compliance Audit was conducted from May to September 2022, through the test-check of records of six Roads & Buildings (R&B) Divisions[159], three General Electrical Divisions[160] and PMU, out of 25 implementing units, covering the period 2017-22, and all 14 packages of the project were test-checked by Audit. The units were selected through the stratified random sampling method, basing on activity-wise expenditure incurred. The Audit methodology adopted included document analysis, scrutiny of works agreements, responses to audit queries, issue of preliminary observation memos (POMs), photographic evidence and examination of reports and records of executing agencies. Joint Physical Inspection (JPI) of roads was also conducted, to verify the conditions of the roads executed. An Entry Conference was held on 09 June 2022 with the Principal Secretary to GoO, Works Department, explaining the audit objectives and criteria being used to assess the OSRP. The audit findings were discussed with the Principal Secretary to GoO, Works Department, in the Exit Conference, held on 21 March 2023.

Audit Findings

6.2 Planning

6.2.1 Non-approval of the Odisha State Road Sector Policy

The project appraisal document (August 2008) stipulated adoption of a road sector policy by December 2011. This policy was to be prepared based on the recommendations of the road sector institutional development study, conducted by OWD. The road sector policy, *inter alia*, required to include the Axle Load Control Policy, funding for road maintenance and implementation strategy.

[159] R&B Division, Bhadrak, Cuttack – II, Kendrapara – II, Ganjam – I, Kalahandi and Khariar
[160] General Electrical Division (GED) – I, Bhubaneswar, GED - II, Cuttack and GED – IV, Sunabeda

The policy aimed to provide connectivity with reduced cost of travel, improved opportunities and improvement in the quality of life of the people of Odisha. Although the implementation of OSRP had started during 2008-09, after a lapse of five years, a draft road sector policy, namely 'The Odisha State Road Policy 2014', was prepared, considering the needs of the State for next decade. The State Level Empowered Committee (SLEC) advised (May 2014) OWD to circulate the draft road sector policy to all stakeholders, before forwarding it for taking approval of the Cabinet for legislative action.

Audit observed that, though the draft policy has been prepared during 2014, it was still pending (November 2022) for approval from the Government. As the policy had not been approved, the State axle load control policy and a dedicated road maintenance fund could not be created for institutional development support, to improve the road sector of GoO. Thus, failure to evolve a road sector policy, despite a lapse of more than eight years, resulted in lack of planning towards improvement of the road sector.

In reply, the Government stated (March 2023) that the Road Sector Policy was submitted (June 2014) to the Government. However, the fact remains that despite lapse of more than eight years the approval of the policy by Government is still pending.

6.2.2 Inadequate survey and investigation led to preparation of defective detailed project reports

The OWD had engaged (November 2005) a consultant[161] for preparation of the feasibility and Detailed Project Report (DPR), for four roads of the OSRP, at a cost of ₹4.68 crore. Survey and investigation were carried out and the reports were submitted during April to November 2007. Based on the DPRs, estimates were prepared and works were tendered / awarded between November 2008 and December 2013. Scrutiny of records revealed the following deficiencies in the preparation of DPRs:

6.2.2.1 Due to inadequate survey and investigation, during the execution of works, the scope of many works was changed. Audit found that, out of 1,103 items of works in four roads, the department could estimate the correct quantities only in 43 items, i.e 3.9 *per cent*. There were increases in the quantities of 225 items and 471 items had decreased. Moreover, 315 items had to be deleted and 49 new items were included. Increase in quantities varied up to 80.68 times of the original value envisaged in the estimates, as detailed in ***Appendix-XX,*** which was indicative of the poor quality of DPRs.

In reply, the Government stated (March 2023) that the original DPRs for the works were prepared by the consultants in the year 2007. During the course of execution of the work, considering the site requirement and revision of plan and profile, the estimates were recasted with deletion of few items and inclusion of new items. The reply is not acceptable as the contracts were terminated multiple times which clearly indicates that Department failed to assess the site conditions which resulted in wide variation in items of works.

[161] Consulting Engineers Group Ltd., Jaipur

Had the survey and investigation been done properly during preparation of the DPR, wide variations in the item of works would have not occurred.

6.2.2.2 Para 6.3.16 of the OPWD Code Vol-I stipulates that extra items of work are those which are not covered under the original agreement for the execution of a work and consist of new and/ or substituted items.

Audit reviewed all 14 packages and observed that the contractors had quoted lesser rates in respect of eight packages, which ranged between (-) 3 and (-) 15.3 *per cent* of the estimated cost put to tender. During execution, the scope of works was changed[162] due to defective DPRs. Therefore, extra items were added and supplementary agreements were drawn at the post-tender stages, at the current Schedule of Rates. As a result, the department could not avail the discount/ rebate[163] of the original agreement and incurred excess expenditure of ₹2.73 crore, as detailed in ***Appendix -XXI***. Thus, change in the scope of works and defective DPRs led to loss to the State exchequer, in the form of non-availment of discount/rebate.

In reply, the Government stated (March 2023) that the variations in the shape of quantities and items were due to actual site conditions and design. The fact, however, remained that, had the survey and investigation been done properly during preparation of the DPR, wide variations in the item of works would have not occurred and the loss to State exchequer, in the form of non-availment of discount/ rebate, could have been avoided.

Thus, wide variation in most of the items of the works due to inadequate survey and investigation of roads resulted in avoidable excess expenditure and the works were delayed and suffered from time and cost overruns. However, no action had been taken by the department against the consultant for the defective preparation of DPRs.

6.2.3 Avoidable extra expenditure due to deficient planning

Audit observed the following avoidable extra expenditure due to defective planning of the project:

6.2.3.1 Para 3.7.4 of the OPWD Code Vol-I stipulated that no work should be commenced on land which has not been duly made over by a responsible Civil Officer.

Scrutiny of records at the PMU and Bhadrak R&B Division, revealed that the work of the Chandabali -Bhadrak-Anandpur Road had been awarded (November 2008) for completion by August 2011. The contract was terminated (November 2012), as the progress of the work was slow, mainly due to shortage of stone aggregates, at the sources specified in the bid documents and delay in handing over of site, due

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162 Change of design of culvert at post tender stage, provision for new culvert, change of width of roads, provision of two lane in the estimate was revised to four lane during execution, change of specification in the accordance with IRC provision, the quantities provided in the estimates were not précised estimated as per site requirement, expansive clay water logged stretches which were not foreseen during DPR were found at different stretches during execution.

163 Reduction in offer price of the item rate of works contracts

to non-acquisition of land. The first contractor left the work in November 2012. Thereafter, the department took one year in awarding (November 2013) the balance of the work, to another contractor, for completion by January 2016. Meanwhile, in order to make the road trafficable, the EE, Bhadrak (R&B) Division, executed maintenance work of ₹2.87 crore.

As the department had failed to provide the site in time and ensure sufficiency of stone aggregates, in the quarries identified in the DPR, and due to delay in award of balance work, the division incurred additional expenditure of ₹2.87 crore on immediate repair and maintenance of the road.

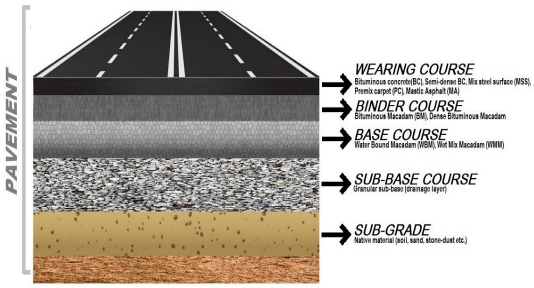
Thus, the failure of the Department in planning the project properly resulted in an extra expenditure of ₹2.87 crore, which could have been avoided.

In reply, the Government stated (March 2023) that due to non acquisition of land, the work could not be executed by the original contractor and the contract was terminated (November 2012). After termination, the award of balance work took more than one year, during which, the road was required to be maintained for smooth plying of traffic. The reply is not acceptable as it indicates lack of planning to assess the pre-requisites for project implementation. Further, the OWD failed to acquire the required land till termination of the contract, though PMU was established since 2005 for management of the project.

6.2.3.2 Para 3.4.10 of the OPWD Code Vol-I requires that estimates be prepared in the most economical manner.

Scrutiny of records at the PMU revealed the scope of work "Construction for widening and strengthening of existing carriageway to two lane road from Jagatpur to Nischintakoili[164]" included, *inter-alia,* 63,822 cum of Granular Sub Base (GSB), using crushed stone aggregates. After execution of 23,613 cum of GSB, the use of slag in GSB was allowed (November 2016), due to non-availability of crushed stone aggregates**,** for the remaining work.

Image No. 1 : LAYERS OF A ROAD



The provision for construction of GSB with stone aggregates, instead of crushed slag, had inflated the item rate of GSB by ₹293 per cum, as the use of slag in GSB was cheaper. The preparation of estimates, without checking the availability of required material, indicated poor planning. Audit also observed that, while preparing the estimates, crushed slag in GSB could have been included, instead of crushed stone aggregates, and the extra expenditure of ₹69 lakh could have been avoided.

[164] Km 0/000 to Km 25/000 part of the Jagatpur-Chandabali road

Provision of high-cost material had been made in the estimates, despite the availability of cheaper material. Thus, the failure of the department in regard to planning and preparation of estimates in an economical manner, led to avoidable extra expenditure of ₹69 lakh.

In reply, the Government stated (March 2023) that, during preparation of the estimates, the availability and suitability of crushed slag, for use in GSB, was not known to the Department. The reply is not acceptable, as IRC specifies that slag is one of the materials for use as GSB. Further, it was also available in a nearby plant at Choudwar.

6.2.3.3 Para 4.2.1.5 of IRC-37-2001 specification stipulates that sub-grade soil[165] should have a California Bearing Ratio (CBR)[166] of 2 *per cent*. Where the CBR value of the sub grade is less than 2 *per cent*, the design should be based on subgrade CBR value of 2 *per cent* and a capping layer of 150 mm thickness of materials, with a minimum of CBR of 10 *per cent,* is to be provided, in addition to the sub-base.

Audit observed from the DPRs of the eight roads that the CBR value of the sub grade soil was between six and 10 *per cent*. The DPRs were stated to be in compliance with the IRC guidelines, hence, capping layer of sand was not required. Further, the thickness of the Sub-Base[167] (GSB), Base course[168] (Wet Mix Macadam) (WMM) and Wearing Course[169] (Bituminous Macadam) (BM) and (Semi Dense Bituminous Macadam) (SDBC), as required in terms of the IRC, had been provided in the above roads. The unwarranted provision of 11.21 lakh cum capping layer of sand, with 500 mm sand, in addition to the required thickness of GSB, at rates ranging between ₹286 and ₹700 per cum, in the estimates of the eight roads, was in contravention of the IRC specifications. This had resulted in extra expenditure of ₹43.51 crore, as detailed in ***Appendix - XXII*.**

In reply, the Government stated (March 2023) that due to scarcity of borrow earth with minimum CBR value of 10 *per cent*, it was considered to use sand in the embankment as capping layer. The reply is not acceptable as OWD used sand in the embankment as capping layer in addition to borrow earth.

6.2.4 Lack of adequate planning led to time and cost overruns

Para 37 of the Project Appraisal Document (PAD) for OSRP, highlighted that pre-construction activities, including land acquisition, resettlement and rehabilitation of affected persons, clearing of trees, and shifting of utilities, are common factors that delay project implementation. To avoid such occurrences, all pre-construction activities, as noted above, in respect of 25 *per cent* of civil

[165] Sub-grade is the native material underneath a constructed road pavement. It is also called formation level.
[166] California Bearing Ratio (CBR) test is a penetration test used to evaluate the subgrade strength of roads and pavements.
[167] Sub-base is the layer of aggregate material laid on the sub-grade, on which the base course layer is located.
[168] Base course in pavements is a layer of material in an asphalt roadway, racetrack, riding arena, or sporting field. It is located under the surface layer consisting of the wearing course and sometimes an extra binder course.
[169] Wearing course is the upper layer in roadway, airfield, and dockyard construction.

work contracts of each road under OSRP, should be reasonably completed, before award of contracts.

Scrutiny of records at the PMU revealed that the project, consisting of widening and strengthening of four roads, which were divided into five packages, was originally scheduled to be completed between November 2010 and March 2016, at a cost of ₹725.44 crore. Due to delays in the acquisition of land, rehabilitation and resettlement process and non-shifting of utility services etc., the contracts were terminated (September 2011 and June 2017). The works were subsequently retendered in 14 packages, which were completed between August 2016 and April 2021, at a cost of ₹963.80 crore, as per the details given in the **Table 6.1** below:

Table 6.1: Details of road packages

(₹ in crore)

Sl. No.	Road	Original agreement cost	Original completion period	No. of Packages retendered	Actual date of completion	Completion cost	Delay in months
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1	Bhawanipatna-Khariar	105.51	August 2011	3	August 2016	158.29	60
2	Chandabali-Bhadrak-Anandapur	216.23	August 2011	5	April 2021	316.35	116
3	Berhampur-Taptapani	81.97	November 2010	2	August 2016	108.18	69
4	Jagatpur-Kendrapara-Chandabali	321.73	March 2016	4	May 2019	380.98	38
	Total	**725.44**		**14**		**963.80**	

The above table indicates that, due to lack of adequate planning, contracts had to be terminated and the project had suffered cost overrun of ₹238.36 crore (32.86 *per cent*), while the time overrun ranged between 38 and 116 months.

In reply, the Government stated (March 2023) that, due to delay in land acquisition, resettlement and rehabilitation process, utility shifting, cutting of trees etc., the original contracts had been terminated and the works had been retendered. The reply is not acceptable, as, in deviation to the provisions of the PAD, the Department had awarded the works before completion of about 25 *per cent* of all pre-construction activities of civil work contracts, which had resulted in termination of contracts, multiple times.

6.2.4.1 Change of scope, due to delay in shifting of utilities

The work of shifting of utility services of two roads[170], at a cost of ₹6.78 crore, was awarded between February 2009 and May 2011, for completion by November 2009 and September 2011. After incurring expenditure of ₹5.84 crore, the contractor could not complete the work, due to non-availability of land, encroachment by unauthorized buildings and opposition from the public for non-settlement of their land acquisition issues. Hence, the scope of the work was changed, with revised alignment for shifting of utilities and the balance works of ₹94 lakh were completed between March 2016 and March 2017, at a cost of ₹4.28 crore, with delays ranging from six to seven years. Thus, lack of proper planning resulted in delay in completion of work, for more than seven years, apart from avoidable extra expenditure of ₹3.34 crore.

[170] 1) Berhampur – Taptapani and 2) Jagatpur-Chandbali

The Government did not furnish any specific reply (March 2023) to the audit observation.

6.2.4.2 Avoidable extra expenditure on consultancy services

The construction supervision works of the packages were awarded between November 2013 and February 2015, to a consultant (LEA Associates South Asia Pvt. Ltd.), at a cost of ₹20.16 crore, for completion by May 2016. As the civil works of all the packages could not be completed within the stipulated period of completion, due to delay in land acquisition, termination of contracts for slow progress of work, retendering of works *etc*., the consultancy period had to be extended twice, *i.e*. up to December 2019, for ₹38.21 crore, and upto June 2021, for ₹39.31 crore, respectively, resulting in avoidable extra expenditure of ₹19.15 crore.

In reply, the Government stated (March 2023) that the delay in completion of project was due to delay in land acquisition, rehabilitation and resettlement of Project Affected Persons (PAPs), shifting of utilities and felling of trees which involved inter-departmental activities. The reply is not acceptable as the OWD should have properly coordinated with other Departments for timely completion of the project.

Thus, non-approval of the State Road Sector Policy, inadequate survey and defective DPRs, resulted in excess expenditure of ₹310.65 crore, which could have been avoided.

6.3 Financial Management

6.3.1 Allotment *vis-à-vis* expenditure for the project

Rule 46 of the Odisha Budget Manual, 1963, stipulates that, while preparing the budget estimates, the aim must be to make the estimates as accurate as possible, as well as not to over-estimate and show large savings at the end of the year. Hence, budget estimates have to be prepared on realistic basis.

Check of records at the PMU revealed that, during the period 2017-22, ₹531.85 crore had been allocated in the budget for expenditure in OSRP, out of which the department had spent ₹474.03 crore, as detailed in **Table 6.2**.

Table 6.2: Details of budget allocation and expenditure incurred

(₹ in crore)

Financial Year	Budget Allocation	Expenditure	Surrender/ lapse	*Percentage* of surrender/ lapse
1	*2*	*3*	*4*	*5*
2017-18	229.35	229.35	0	-
2018-19	150.00	150.00	0	-
2019-20	75.00	64.51	10.49	13.98
2020-21	47.50	19.04	28.46	59.91
2021-22	30.00	11.13	18.87	62.90
Total	**531.85**	**474.03**	**57.82**	

The above Table indicates that the allotted funds had not been utilised fully and the percentage of surrender/lapse of funds was on an increasing trend, from 13.98 *per cent* to 62.90 *per cent* during the past three years from FY 2019-20 to FY 2021-22, and, in particular, almost 50 *per cent,* during the last two years. Thus, the budgets for the project had not been prepared on a realistic basis, which had resulted in surrender of funds, in contravention of the provisions of the budget manual.

In reply, the Government stated (March 2023) that budget allocation could not be utilised due to deficiencies on account of land acquisition and utility shifting which were the responsibilities of other departments. The above reply indicated lack of coordination among the various departments owing to which the project suffered.

6.3.2 Excess expenditure towards land acquisition, resettlement and rehabilitation

As per the PAD of OSRP, 6.3 *per cent* of the total cost had been allotted for Land Acquisition (LA), Resettlement and Rehabilitation (R&R) and Utility Shifting work. The total expenditure of OSRP since 2008-09 was ₹1,400.39 crore (March 2022). Para 37 of the PAD further stipulated that all pre-construction activities including land acquisition, resettlement and rehabilitation of affected persons, shifting of utilities and clearing the trees, for about 25 *per cent* of civil work contracts should be ready before contract award.

Audit observed that the expenditure towards LA, R&R and utility shifting was to be ₹88.22 crore (6.3 *per cent* of ₹1,400.39 crore), against which the OWD had incurred expenditure of ₹198.44 crore (14.17 *per cent* of the total cost). Thus, deviation from the PAD norms and delay in the land acquisition process had resulted in excess expenditure of ₹110.22 crore.

In reply, the Government stated (March 2023) that the excess expenditure had been incurred due to increase in LA rates, increase in the number of project affected persons, non-religious community property resources and increase in the quantum of work in shifting of utilities at the prevailing estimates received from different departments. The reply was not acceptable, as ensuring the availability of land was the prior requirement for award of contract. Delay in land acquisition and finalisation/award of tenders resulted in not only delaying the project but also payment of higher costs for land. However, all other factors, as stated in the reply, should have been considered while preparing the DPRs.

6.3.3 Non-disbursal of loan by the World Bank, due to slow progress of work

Scrutiny of records at the PMU revealed that, although three works[171] had been awarded between September and December 2008**,** not even a continuous stretch of five km could be made available to the contractors, for one and half years from the date of award of the contract**.**

In view of the continued unsatisfactory project implementation, the World Bank (WB) had suspended the loan, from May 2011 to October 2012. During the period of suspension, WB had not disbursed the loan amount, to the extent of ₹48.37 crore. Thus, the failure of the Department to initiate timely action for

[171] Bhawanipatna to Khariar (Package No. OSRP-CW-ICB-Y1-P01), Chandabali-Bhadrak-Anandapur road (Package No. OSRP-CW-ICB-Y1-P02) and Berhampur to Taptapani (Package No. OSRP-CW-ICB-Y1-P03)

completion of the road projects, had resulted in suspension of loan disbursement for these three projects, along with subsequent non-disbursal of loan of ₹48.37 crore, which in turn, had affected the implementation of the project and also led to extra burden to the State exchequer.

In reply, the Government stated (March 2023) that reconciliation of disbursement has been made and the claimed amount has been fully reimbursed. However, as per claim status of the loan, an amount of ₹48.37 crore still remained undisbursed.

6.3.4 Non-disbursal of rehabilitation grants

To support the livelihood of people who had to be rehabilitated due to OSRP projects, Para 2.8 of the Finance Manual of OSRP envisaged that, for the purpose of payment of rehabilitation "grants" to PAPs, the cheques were to be deposited in a bank account, opened jointly in the name of the concerned PAPs and the concerned Package Manager (Executive Engineer).

Scrutiny of records at the PMU and information furnished to Audit, revealed the following irregularities:

- There were 6,055 identified PAPs, but the Department had deposited ₹38.39 crore towards Rehabilitation Grant (RG), in the joint bank accounts of 5,814 PAPs only. Reasons for non-deposit of RG, for 241 PAPs, were not found available on records.
- Out of the deposited amount of ₹38.39 crore, an amount of ₹31.24 crore had been disbursed and the balance amount of ₹7.15 crore, relating to 3,318 PAPs, had been kept idle, in their joint bank accounts.
- Out of the total 5,814 beneficiaries, 2,496 beneficiaries had been paid full RG and 3,101 beneficiaries had been paid partial RG, with the payments so made, amounting to ₹31.24 crore. The remaining 217 beneficiaries had not been paid any amount out of the RG of ₹2.63 crore, even though the money had been deposited in their joint bank accounts and the roads under the project had also been completed in April 2021.

Thus, an RG amount of ₹7.15 crore, for the resettlement and restoration of livelihood of PAPs, had not been utilised for the purpose, but had remained idle in the joint bank accounts of the concerned PAPs, till July 2022, even after completion of the roads under the project.

In reply, the Government stated (March 2023) that the deposits made in the joint account are as per sanction order and the release of the deposits is as per utilisations. The fact, however, remains that the Government funds remained idle without utilisation or surrender.

6.4 Contract Management

6.4.1 Avoidable extra expenditure of ₹9.10 crore, due to reduced defect liability period

In order to avoid sub-standard execution of work by contractors and to ensure deterrence against indifferent quality of work, MoRTH had prescribed

(November 2010 and April 2012) that the Defect Liability Period (DLP), under the Standard Bidding Document, should be three years from the date of completion, in cases where the bituminous thickness is equal to or more than 40 mm.

Audit noticed that, though all the four roads constructed under the project had been provided with more than 40 mm thickness of bituminous layers, in deviation from the above norms, the DLP had been fixed for only one year from the date of completion of the work. Due to reduction of the DLP, proper quality, in the execution of works by the concerned contractors, could not be ensured by the department. Audit also observed that, due to the poor quality of work, just after expiry of the DLP, these roads had required repair and maintenance, as discussed below.

The four road works under OSRP had been completed and handed over to the department between June 2016 and April 2021, after rectification of the defective works, within the DLP. Audit observed that, just six months after the expiry of the DLP, six Divisional Officers[172] had incurred expenditure of ₹9.11 crore towards improvement work, renewal coat of surface with SDBC, special repair works and thermo-plastic painting of the roads, during the period from November 2020 to September 2022, in 131 agreements, as detailed in ***Appendix - XXIII***. If the DLP of three years had been adopted in the contracts, the repair works would have been done at the expense of the contractors. As such, due to provision of reduced DLP, avoidable extra expenditure of ₹9.11 crore had to be incurred by the department**.**

In reply, the Government stated (March 2023) that the terms and conditions of the contracts for the works executed under OSRP were as per FIDIC[173] forms of the contracts. If DLP period would have been increased to three years, the contractors would have loaded the expenditure thereon in their offer. The reply is not acceptable as DLP period adopted in the contracts was in violation of MoRT&H norms and due to non-adoption of it, Department had unnecessarily incurred expenditure towards various repair works.

6.4.2 Non-recovery of differential costs from defaulting contractors

As per clause 15.2 (b) of the General Conditions of Contract (GCC), the employer shall be entitled to terminate the contract, if the contractor abandons the work or otherwise plainly demonstrates the intention of not to continue performance of his obligations under the contract. Under clause 15.4 of the GCC, if the contract was terminated under clause 15.2, the employer has to recover any losses and damages incurred by the employer and any extra cost of the works from the contractor.

172 Superintending Engineer, Bhadrak, Cuttack-II, Kendrapara-II, Ganjam-I, Khariar and Kalahandi

173 FIDIC is a French language acronym for Fédération Internationale Des Ingénieurs-Conseils, which means the international federation of consulting engineers. FIDIC publishes international contracts and business practice documents which are used globally.

Scrutiny of records at the PMU revealed that two works[174] had been awarded (December 2008) for ₹321.74 crore, for completion by August 2011. On the contractor's request, Extension of Time (EOT) had been granted (between March 2011 and April 2012), for a further period of more than two years (799 days) and the period for completion had been extended up to November 2013. However, the contracts were terminated (November 2012) by the OWD, under clause 15.2, due to slow progress of the work. The concerned contractors had executed these works at a cost of ₹86.28 crore and completed only 10 km (6.13 *per cent*) of the roads. The balance works were retendered and awarded (between January 2013 and November 2013) to other contractors, for ₹367.54 crore.

The original contractors preferred five[175] different claims during 2012, before the Dispute Redressal Board (DRB). In respect of two claims, the DRB issued decision in favour of the contractors. OWD went to Arbitration, under clause 20.6 of the conditions of the contract and the Arbitration Tribunal also passed judgment in respect of one claim in favour of the contractors, for payment of ₹6.49 crore towards the differential amount on execution of the GSB item of work.

Meanwhile, the contractors approached (December 2016) the Government for reconciliation of their claims. The Amicable Settlement Committee determined (November 2017) that ₹35.23 crore was payable to the contractors. However, the OWD did not recover the differential cost of ₹132.08 crore[176], arising out of retender of the balance work, as per the provisions of Clause 15.4 of GCC and released the contractors dues. Non-realization of the differential amount from the defaulting contactors, resulted in loss to the State exchequer. It is pertinent to mention that the Law Department had advised the OWD to ensure that the State exchequer does not suffer any loss by settling the disputes and, if this happens, to fix responsibility on the officers who are at the helm of affairs. Audit found that, despite non-recovery of ₹132.08 crore from contractor, arising out of retender of the balance work, no responsibility had been fixed on the concerned officers.

In reply, the Government stated (March 2023) that the amount has been released as per the reports of the Settlement Committee. The reply is not acceptable as the differential cost arising out of retender of the balance work was not recovered as per the provisions of Clause 15.4 of GCC.

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[174] (i) Widening and strengthening of existing carriage way to two-lane road from Bhawanipatna to Khariar (Km 2/000 to Km 70/000 of SH-16) (Package No. OSRP-Y1-P01)
(ii) Widening and strengthening of existing carriageway to two-lane road for Chandabali-Bhadrak-Anandpur road (km 0/0 to km 45/0 of SH-9 and km 0/0 to 50/0 km of SH-53) under Orissa State Roads Project – Package No OSRP-CW-ICB-Y1-P02

[175] Claim 1 - Differential amount on execution of GSB item of work
Claim 2 - Reimbursement of labour cess recovered.
Claim 3 - Against the imposition of delay damages for non-completion of Section-I
Claim 4 - Challenging the Termination of the contract
Claim 5 - Compensatory claims due to prolongation of the work on account of non-availability of hindrance free site.

[176] Original awarded cost: ₹321.74 crore, Value of work executed: ₹86.28 crore, Value of balance work left ₹321.74 crore - ₹86.28 crore = ₹235.46 crore, Awarded cost of balance work ₹367.54 crore, Differential cost ₹367.54 crore – ₹235.46 crore = ₹132.08 crore.

6.5 Project execution

6.5.1 Incorrect adoption of lead charges resulted in excess payment of ₹38.32 crore

Para 3.4.10 of the OPWD Code Vol-I stipulates that the estimates for a work should be prepared adopting the sanctioned schedule of rates (SoR) and providing the most economical and safe way of execution of the work.

Scrutiny of records at the PMU revealed that, due to incorrect adoption of lead charges, the estimates were inflated, leading to undue benefit to the contractors, as discussed below:

6.5.1.1 The estimates of the balance work of Chandabali-Bhadrak-Anandapur road *inter alia* provided for transportation of stone products, for execution of roads. Audit observed that, in the estimates, the lead distance from the Baghudi quarry had been provided (February 2013) for 67 km, whereas, in the original estimates prepared during FY 2007-08, a lead distance of 43 km had been provided for the same quarry. Adoption of excess lead distance of 24 km resulted in excess expenditure of ₹164.86 per cum. Thus, excess provision for 1,76,896 cum stone products had resulted in excess expenditure of ₹2.92 crore.

In reply,the Government stated (March 2023) that excess lead was considered as there was scarcity of stone in the quarry. The reply is not acceptable as Department did not furnish any evidence regarding scarcity of stone in the said quarry.

6.5.1.2 As per Notes - 4 below Chapter XIII (Road Works) of the State Analysis of Rates (AoR)[177], in case of items where wet mix plant is used, the total distance for transportation of material from the quarry to the mix plant site plus the mix plant to the work site should not exceed distance from the quarry to the worksite.

Estimates in regard to 11 road works, were sanctioned (between September 2008 and August 2016), by the CE, WB Project, for ₹1,342.14 crore. The works were awarded at a cost of ₹1,359.20 crore, for completion between November 2010 and May 2018 and were completed by April 2021.

The above works *inter alia* involved transportation of 11.02 lakh cum of stone products, from quarries to a mixing plant, for preparation of WMM, DBM and BC and from the mixing plant to various work sites. For the above works, the allowable costs for transportation were from the quarry to the mixing plant and from the mixing plant to the work sites.

Audit observed that the estimates provided for lead charges, for distances ranging from 9 to 123 Km, for transportation of stone products, from the quarry to the work sites. Additional provision of undue lead charges, for transportation from the mixing plants to the work sites, had been included in the item rates, for distances ranging

[177] OWD published AoR, 2006, prescribing admissible cost elements to be considered, to arrive at the items rate of various works.

from 7 to 24 Km. These additional provisions were in violation of the State AoR. These extra lead charges (between ₹71.28 to ₹208.14 per cum) from the mixing plant to various work sites, which had been included in the item rates, had inflated the estimated cost by ₹13.04 crore, as detailed in ***Appendix - XXIV.*** Award of work based on these inflated estimated costs had resulted in extra costs for the works and undue benefit to the concerned contractors.

In reply, the Government stated (March 2023) that the estimated rates do not have any impact on the cost of the project as the cost of the project is determined on the basis of accepted contract value. However, the fact remains that preparation of inflated estimates and comparison of bids with such inflated estimates had resulted in extension of undue benefit to the contractors.

6.5.1.3 Estimates for another three roads[178] had been sanctioned (March 2013 and July 2015) by the CE, WB Project, for ₹406.99 crore. The works had been awarded between December 2013 and January 2016, at a cost of ₹375.72 crore, for completion between March 2016 and June 2017. The works were completed between April 2018 and May 2019 and the contractors were paid ₹379.38 crore.

Audit observed from the above estimates that the lead, provided for transportation of sand, had ranged between 15 and 22 km. However, as per the quarry chart of the Jagatpur-Duhuria road[179], the admissible lead for sand had ranged between 10 and 14 km. The excess provision of lead for the above three road works, ranging between 5 and 8 km in the estimates, had inflated the costs for transportation of 10.29 lakh cum of sand and had resulted in undue benefit of ₹6.08 crore to the concerned contractors, as detailed in ***Appendix - XXV.***

In reply, the Government stated (March 2023) that the bidders were not provided with the estimated item rates. The bidders offer the rates from their own assessment. However, the fact remained that preparation of inflated estimates and comparison of bids with such inflated estimates had resulted in extension of undue benefit to the contractors.

6.5.1.4 For three packages of Chandabali-Bhadrak-Anandapur road, i.e. Bhadrak to Anandapur (balance work), Bhadrak to Pirahat and Pirahat to Chandabali, the lead provided in the estimates for moorum[180], was from Chenapadi/ Dhenka, i.e. 40 km, 55 km and 78 km to the sites, respectively. However, as per the indicative quarry chart of the above roads, the shortest lead for moorum was 17 km, 48 km and 71 km, respectively. As such, the lead charges for moorum should have been ₹266.80, ₹552 and ₹706.90 per cum, but ₹379.50, ₹602.90 and ₹752.40 per cum had been provided in the estimates, which had led to excess

[178] (i) Widening and strengthening of existing carriageway to two-lane road from Jagatpur to Nischintakoili (Package No. OSRP-CW-ICB-P04A1) (ii) Widening and Strengthening of existing carriageway to two-lane road from Nischintakoili to Duhuria (Package No. OSRP-CW-ICB-P04A2) and (iii) Widening and Strengthening of existing carriageway to 2-lane road from Duhuria to Chandabali (Package No-OSRP-CW-ICB-P04B)

[179] Part of Jagatpur-Chandabali road

[180] It is a mixture of minerals, organic matters, gravels, rock particles *etc*. Moorum is used in plinth filling, road pavements, backfilling in trenches, footing pits, *etc*.

provision of ₹112.70, ₹50.90 and ₹45.50 per cum, respectively. Thus, the estimates, for transportation of 3.63 lakh cum of moorum, were inflated and had resulted in extra expenditure of ₹2.37 crore, leading to undue benefit to the concerned contractors, as detailed in ***Appendix - XXVI.***

In reply, the Government stated (March 2023) that average lead for moorum had been considered in the estimates depending upon the availability of material at the quarry. The reply was not acceptable as the Department did not furnish any recorded evidence in support of non-availability of material at the nearest quarry.

6.5.1.5 Item 35 of Chapter XIII in AoR 2006, provided for construction of embankment, with approved material obtained from borrow pits, with all lifts and leads, as well as transportation of this material to the concerned site, by mechanical means, within a lead of five km. Further, Clause 111.3 of the Technical Specifications of the OSRP bid documents stipulated that the contractor was to operate strictly in adherence to the Borrow Area[181] Management Plan.

Audit observed the following in this regard:

- For transportation of borrow earth of 7.75 lakh cum, for construction of embankments of five roads, the sanctioned estimates had adopted lead distances between 10 and 68 km, instead of five km (as specified in AoR) and provided excess lead rates between ₹33.58 and ₹227.68 per cum, in the estimates.
- As per the conditions of the contract, the contractors needed to submit the borrow area management plan, before execution of the borrow pit, for prior approval of the project authority. The contractors were also required to submit a copy of their agreements with the farmers, for lifting of borrow earth from their fields. However, the contractors had not submitted any such plans depriving the project authorities of verification of the distance between source of earth and the work sites.

Thus, provision of lead of 10 to 68 km, instead of five km, without any supporting evidence from the contractors, had resulted in inflated estimates and undue benefit of ₹13.91 crore to the contractors towards transportation of 7.75 lakh cum of borrow earth, as detailed in ***Appendix - XXVII***

In reply, the Government stated (March 2023) that the burrow areas were identified and accordingly the actual lead to the work site was considered. The reply was not acceptable as the Department did not furnish any recorded evidence in support of identification of burrow area before preparation of estimates.

Thus, incorrect adoption of lead charges in the estimates had led to extra expenditure of ₹38.32 crore.

[181] Borrow area means the area from which material is excavated to be used as fill material in another area.

6.5.2 Avoidable extra expenditure due to non-adoption of State SoR/AoR

Audit observed avoidable extra expenditures due to non-adoption of State SoR/AoR as discussed below:

6.5.2.1 Para 3.4.10 of the OPWD code stipulates that the estimates for a work should be prepared by adopting the State SoR. Further, the State SoR allows overhead charges at the rate of 10 *per cent,* up to October 2013, and, thereafter, at the rate of 7.5 *per cent* each, towards contractor's profit and overhead charges, totaling to 15 *per cent*.

Scrutiny of records at the PMU revealed that the estimates in regard to 13 roads had been sanctioned for ₹1,610.06 crore, by CE, WB Projects, during September 2008 to March 2016. The works had been awarded for execution between November 2008 and November 2016, for ₹1,572.78 crore, for completion between November 2010 and May 2018. These works had been completed during June 2016 to April 2021.

Audit observed that the estimates for 13 road works had provided eight *per cent* towards overhead charges and another 10 *per cent* thereon for contractor's profit, as per the MoRTH data book. Thus, these charges worked out to 18.8 *per cent* on the work components. This was not in order, as there was no stipulation in the WB norms, for adoption of the MoRT&H data book, in cases of States that had their own SoR and AoR for road works.

Adoption of the MoRT&H data book, instead of the State SoR for the above road works, resulted in extra *percentages* on account of overhead charges and contractor's profit, which inflated the project costs, leading to undue benefit of ₹69.54 crore to the contractors, as detailed in ***Appendix - XXVIII***.

On this being pointed out in Audit, the Government stated (March 2023) that the estimated cost of the works had been arrived at, for comparison of the bids, with reference to the bid amounts for the purpose of approval of the tenders submitted by the bidders, with their own assessment. However, the fact remained that preparation of inflated estimates and comparison of bids with such inflated estimates had resulted in extension of undue benefit to the contractors.

6.5.2.2 Estimates, in regard to widening and strengthening of five roads, to two-lane roads, were sanctioned between July 2015 and October 2017, by CE, WB Projects, for ₹426.70 crore. The works were awarded at a cost of ₹424.56 crore, for completion between June 2017 and February 2019. All of them were completed (between January 2018 to April 2021) and the contractors were paid an overall amount of ₹396.15 crore.

Audit observed that, in the above estimates, against the requirement of 22.50 tonne of 60/70 penetration grade of bitumen[182], for taking output

[182] Bitumen 60/70 is a standard Penetration Grade of Bitumen, typically used as a Paving Grade Bitumen suitable for road construction.

of 191 cum, as per AoR, 24.30 tonne of CRMB[183] had been provided. Accordingly, the rate of BC had been inflated between ₹247.48 and ₹358.58 per cum. Execution of 35,036.70 cum of BC, with excess provision of CRMB, in deviation from the AoR, had led to avoidable extra cost of ₹1.17 crore, as detailed in ***Appendix - XXIX***.

In reply, the Government stated (March 2023) that the estimates were prepared by taking the quantity of CRMB as per fifth revision of MoRTH specification. The reply is not acceptable as non adoption of SoR in preparing the estimates resulted in avoidable extra expenditure.

6.5.2.3 Para 3.4.10 of the OPWD Code stipulated that estimates should be prepared in the most economical manner. The SoR provided for the hire charges of motor grader[184] as being ₹1,545 per hour, for spreading 200 cum of earth.

Photo No. 17: Representative image of motor grader

Scrutiny of records at the PMU revealed that in the estimates of 13 works, the outturn capacity of a motor grader had been taken as 100 cum per hour, with hire charges of ₹1,545 towards grading and leveling of earth, in the construction of embankment and sub-base. Adoption of these hire charges, for spreading of 100 cum, instead of 200 cum, had inflated the estimated cost towards grading and leveling of 28.75 lakh cum of earth, for the above works by ₹2.75 crore, as detailed in ***Appendix - XXX***. Award of works based on these inflated estimates had resulted in extra costs for these works and undue benefits of ₹2.78 crore being passed to the contractors.

In reply, the Government, stated (March 2023) that the bidders had not been provided with the estimated rates of different items and had quoted their rates against each item based on their own assessment. The reply was not acceptable, as the total estimated cost of the works had been put to tender and the rates quoted by the bidders had been finalized by comparing the bid prices with the estimated costs. Consequently, due to the inflated estimated costs, the bidders had been unduly benefited.

6.5.3 Undue benefit to contractor, due to adoption of higher rates

The estimates and agreement for the work 'widening and strengthening of existing carriageway to two-lane from Bhawanipatna to Khariar[185], had provided for the construction of embankment and sub-grade, with approved material from borrow areas. For execution of 1,49,647 cum of earth on

[183] Crumb Rubber Modified Bitumen (CRMB) is hydrocarbon binder obtained through physical and chemical interaction of crumb rubber with bitumen and some specific additives.

[184] A grader, also commonly referred to as a road grader, motor grader, or simply a blade, is a form of heavy equipment with a long blade used to create a flat surface during grading.

[185] Km 2/0 to km 70/0 of SH-16

embankment, the rate was ₹160 per cum and for execution of 2,14,827 cum of borrow earth on sub-grade, the rate was ₹175 per cum.

Examination of records at the PMU revealed that in spite of the rates for the above items being available in the original agreement (July 2013), a supplementary agreement (December 2018) had been entered into, at higher rates of ₹176.60 and ₹224.20 per cum, instead of ₹160 and ₹175 per cum, respectively. Against the final bill for the above work, payment had been made for excavation of 1,93,171 cum for construction of embankment, and 93,762 cum for construction of sub-grade and earthen shoulder, at higher costs, resulting in extra expenditure of ₹78.18 lakh.

Reason for adoption of higher rates, in the supplementary agreement, were not found available on records. Excavation of earth work at the higher rates had resulted in avoidable extra expenditure of ₹78.19 lakh and undue benefit to the concerned contractor.

In reply, the Government, stated (March 2023) that as the executed quantity was more than 25 *per cent* of the quantity stipulated in the contract and the value of the deviated quantity had exceeded one *per cent* of the initial contract price, as per the provisions of conditions of the contract, the unit rates for these two items had been adjusted and approved. The reply was not acceptable as increase in the executed quantity by more than 25 *per cent* itself indicated that the estimated quantity had not been assessed on realistic basis, which resulted in avoidable extra expenditure.

6.5.4 Undue benefit to the contractor on inflated rate of variation items

During execution of the work of Bhadrak to Pirhat road[186], a change of scope was necessitated at the post-tender stage, as approved (December 2017) by the CE, WB, due to scarcity of moorum and high moisture content. Hence, providing of sub-grade with crusher stone dust, for a quantity of 8,539.83 cum, at the rate of ₹1,588.70 per cum, was included in the scope of the work, as a variation item.

Audit observed that the basic cost of crushed dust, as per the SoR (post-GST) rate, was ₹83.81 per cum, but the basic cost was taken as ₹340 per cum. The Engineer-in-Chief (EIC) suggested (January 2018) adoption of the Bagudhi stone quarry, which was nearest to the work site, i.e. at a distance of 62 km from the middle of the package. However, the lead distance was taken as 100 km from Chadeidhara quarry. By taking into considering the SoR and the shortest lead for the stone dust, the rate for the item came to ₹1,019 per cum, which was lower by ₹569.70 per cum compared to the rate allowed to the contractor for the variation item.

Allowing a higher rate for execution of the variation item of 8,539.83 cum, resulted in undue benefit of ₹48.65 lakh to the contractor.

In reply, the Government stated (March 2023) that the unit rate for the item has been made as per GCC which is reasonable for execution of the work. The reply is not acceptable, as higher cost of material than provided in SoR and

[186] Part of Chandabali-Bhadrak-Anandapur road

lead charges for longer distance was adopted for arriving at the unit rate of the item.

6.6 Monitoring and evaluation

The Project Appraisal Document of the project emphasised that a system be evolved to monitor and evaluate the progress of project activities in a timely manner and also assess the performance, to estimate the project impact and results. Deficiencies in this regard noticed in audit, are discussed in the following paragraphs.

6.6.1 Lack of adequate internal control mechanism

As per Para 7.2 of the Finance Manual of the project, internal controls need to be exercised at various levels, to ensure the accuracy and reliability of financial transactions, to detect arithmetical mistakes, errors, cases of wrong classification, abnormal transactions and variations in the budget etc., with checks and balances at various levels. As per Para 1.5 of Financial Manual, OWD Engineers of the concerned R&B Division, had to review the works. Further, the duty of the PMU was to monitor the work of contractors and supervision consultants and also oversee the implementation. The PMU was also required to finalise the memorandum of payments, make payments to the contractors and maintain the register of work, contractor's ledger and all other records required under the OPWD Code.

Scrutiny of records at the PMU revealed certain instances of lack of adequate internal control, as discussed below:

6.6.1.1 Appendix-II of the OPWD Code stipulates that (i) Register of check measurement should be maintained and (ii) measurement of work should be done by Superior Officers. The Divisional Officers are required to check and measure 10 *per cent* of the works, costing more than ₹2 lakh, to ensure the accuracy of the measurements recorded by the subordinate officers. Audit, however, noticed that the PMU had failed to maintain check measurement register for the works executed and had also not made any entry in regard to the measurements so checked, in the measurement books produced to Audit, although this was required under the OPWD Code.

In reply, the Government stated (March 2023) that there was no provision in the contract for check measurement by the OWD engineers. The reply is not acceptable as absence of such provision violated the provisions of OPWD code.

6.6.1.2 PMU, while scrutinizing (December 2016) the final bill of work for the Bhawanipatna-Khariar road (balance work), found that the contractor had been paid ₹5.30 crore, for items of the works which had not been executed by him, but had been executed by the previous contractor. The CE, DPI&R, directed (July 2018) that the excess payment be treated as interest bearing advance and that the same be recovered with interest, at the rate of 18 *per cent* from the date of such payment, from the present contractor.

Audit, however, observed that the excess payment had been recovered (March 2021) without interest, despite clear instructions in this regard. Audit further observed that, despite detection (December 2016), the excess payment had been recovered (March 2021) only after a delay of 51 months (without interest). The interest recoverable worked out to ₹4.05 crore (from the date of detection, as the date of actual payment could not be traced from the records produced to Audit). This had resulted in loss of ₹4.05 crore to the State exchequer and undue benefit to the contractor, by the same amount.

In reply, the Government stated (March 2023) that there was no provision in the contract to levy interest on any excess payments. The fact, however, remained that due to excess payment the contractor was unduly benefited, but, no responsibility was fixed on any official for such excess payment.

6.6.1.3 False claims for ₹46 lakh were made by a contractor, during the period April 2013 to April 2015, while executing the work "Widening and strengthening of existing carriage to two-lane road from Berhampur to Taptapani" and payment thereagainst was made, due to lack of proper monitoring of the work executed. However, the same was recovered during May 2015 to September 2015. Further, the same contractor, for the above work, had previously altered the financial documents, by mixing the information of the machines which he had already possessed, with the details of machines procured by him out of the interest-free equipment advance of ₹9.69 crore, paid during March 2013 and June 2014. The amount was recovered on percentage basis, from September 2013 to February 2016. The above fraudulent practices were detected only during May 2015, i.e. after nearly two years. This indicated lack of adequate monitoring on the part of department, in detection of such practices. No action was taken against the person responsible for authorizing such irregular payments.

In reply, the Government accepted (March 2023) the factual position and stated that the excess payment had been recovered from the contractor and for fraudulent practice, the WB had also debarred the contractor for three years from participating in any WB project.

6.6.1.4 Similarly, in case of the work 'widening and strengthening of existing carriageway to two-lane for Chandabali-Bhadrak-Anandapur road works (balance work)', the concerned contractor had made false claims of ₹17.37 lakh, to obtain financial benefits. Acting upon a complaint, CE, WB Projects constituted an Enquiry Committee. In the Enquiry Committee Report, the committee observed that the payment for the work of temporary diversion roads at seven locations had been made to the contractor though the works had not been executed and this action had been supported by the Resident Engineer (a key professional staff of the consultant). The Enquiry Committee recommended recovery of the entire amount of ₹17.37 lakh, paid for the above work and suitable action against the contractor and the concerned RE. This indicated that the OWD had neither verified, nor measured/ check measured the concerned works, before certifying the claims, although this was required to be done. The inspection notes of the OWD engineers were not made available to Audit.

In reply, the Government stated (March 2023) that the excess amount had been recovered and the Consultant had removed the Highway Engineer (a key professional staff of the consultant) and Resident Engineer. The reply was not acceptable, as the Department had not taken any action against the contractor for making the fraudulent claim.

6.6.1.5 The contract of the work "Widening and strengthening of existing carriage way to two-lane road from Bhawanipatna to Khariar[187]" was terminated (November 2012), due to slow progress. The balance work was awarded (August 2013) to another contractor. During survey by the second contractor it was noticed in the works carried out by the first contractor, that DBM work had not been carried out at many stretches and the GSB and WMM executed by him were damaged. Hence, work was redone, at a cost of ₹1.32 crore. This indicated the failure of supervision by both the supervision consultant and the OWD Engineers of the concerned (R&B) divisions apart from avoidable expenditure.

In reply, the Government, stated (March 2023) that the previous contractor had stopped execution of the work, much before the contract was terminated. There was a gap of one and half years from the actual abandonment of work by the previous contractor and execution of the balance work. The exposed sub-grade and granular layers, without adequate crust and bituminous layer, were prone to damage. Technically, no traffic should be allowed to ply over such exposed surfaces, as they could lose their compactness, thereby reducing their strength. Due to movement of heavy traffic on the incomplete surface, for a long period, the road had got severely damaged and was redone. The reply was not acceptable, as the authorities did not act promptly for completion of work and prevention of damage to the incomplete surface. The extra cost incurred due to abandonment of the work had not been recovered from the defaulting contractor.

6.6.2 Joint Physical Inspection of the quality of Roads

As per the DPRs of all four projects under OSRP, the roads had been designed for 20 years. To assess the quality and maintenance of the roads, Joint Physical Inspection (JPI) of the four roads under OSRP, was conducted (August 2022) by the Audit team, along with departmental officials. Audit noticed the following instances of damage on these road stretches, which had been completed between June 2016 and April 2021.

[187] 2/000 km to 70/000 km of SH-16

(A) Bhawanipatna - Khariar Road: The works had been completed between June 2016 and August 2016, with Defect Liability Periods (DLPs) between June 2017 and August 2017. It was seen that there were depressions in the CD approach[188] at Km 6/000 and Km 8/000. There were also a series of potholes, along with several surface cracks[189].

Despite the road having been repaired with renewal coat at Km 26/000 to Km 27/000 km in FY 2021-22, depressions were noticed at Km 26/125 and Km 27/000. Also, there were crocodile crack[190], as well as linear and surface cracks, at Km 5/000 to Km 20/000, Km 46/000 to Km 48/000, Km 58/000 to Km 59/000 and km 63/000. There were depressions at four bridge approaches, from Km 27/000 to Km 30/000 and the approaches were damaged and weak. Depressions and water logging were noticed in CD approaches, at Km 41/000, along with shoulder depression, at Km 54/000 and Km 69/000.

Photo No. 18: Depression at Km 26/125

Photo No. 19: Damaged and weak approaches of 4 bridges

(B) Chandabali – Bhadrak - Anandpur Road:

The work had been completed between June 2019 and April 2021, in five packages with one year DLPs, between June 2020 and April 2022 in accordance with the date of completion of each package. There were potholes on the road surface near Ichhapur, at Km 6/650. Also, there were linear and crocodile cracks on these BC surface, on LHS and RHS, at Km 30/000 to Km 35/000, along with pothole in SDBC, on the roof slabs of the box culverts.

Photo No. 20: Liner and crocodile crack from Km 30/000 to Km 35/000

Photo No. 21: Pothole in SDBC on the roof slab of the box culvert

[188] The approach road of cross drainage structure

[189] At Km 15/000 to Km 26/000, Km 38/000 to Km 43/000, Km 46/000 to Km 48/000, Km 51/000 to Km 52/000, Km 63/000 to Km 66/000 and Km 69/000

[190] Interconnected cracks are called crocodile cracks.

(C) Berhampur-Taptapani Road:

The work had been completed in August 2016, with DLPs upto August 2017. There were potholes on the road surface, at Km 5/000 to Km 8/000, Km 10/000 to Km 11/000, Km 16/000 to Km 18/000, Km 39/000, Km 42/000 to Km 45/000 and Km 49/000. Linear, crocodile cracks and surface cracks were also seen on the road, at Km 10/000 to Km 11/000, Km 20/000 to Km 21/000 and Km 27/000 to Km 28/000.

Photo No. 22 : Potholes and surface cracks at Km10/000 to Km11/000

(D) Jagatpur-Duhuria-Chandabali Road:

The works were completed between July 2018 and May 2019, with DLPs between July 2019 and May 2020. There were potholes on the road surface, at Km 0/500 to Km 1/000, Km 37/000 to Km 49/000, Km 54/000 to Km 55/000, Km 57/000 to Km 58/000, Km 62/000 to Km 63/000, Km 66/000, Km 67/000, Km 69/000 and in the SDBC, on the roof slabs of the box culverts.

Photo No. 23: Pothole and cracks at Km 45/200

Linear and crocodile cracks were seen on Cement Concrete, on LHS of the road, at Km 20/000 to Km 21/000, Km 53/000 to Km 55/000. There were base depressions, at Km 57/000 to Km 58/000. The level of the berm of the road was higher than the level of carriage way/paved shoulder and earth was overlapping on the paved shoulder of the road surface. Surface cracks and potholes, in the cement concrete road, at the stretch between Km 10/000 to Km 15/200, were found to have been repaired with Bituminous Concrete, indicating the poor quality of the work.

Photo No. 24: Base depression at Km 57/000 to Km 58/000

The above facts indicated that the quality of the roads had not been ensured by the department, during construction of the roads. As a result, potholes, linear and crocodile cracks, surface cracks and surface depressions had developed on the road surface, just after the expiry of DLP, although the roads were stated to have been designed for 20 years. It was noted that MoRTH had stipulated the DLP as three years from the date of completion. However, OWD had fixed the DLP as only one year, leading to poor quality of works, apart from extra financial burden to the State, as discussed in **Paragraph 6.4.1** *ibid*, as repair and maintenance was being carried out by the Department, even within three years of completion.

In reply, the Government stated (March 2023) that the quality of the constructions has been duly tested and certified by the consultant. The reply is not acceptable since the damages on the roads, just after expiry of DLP of one year, indicates poor quality of works.

6.6.3 Inadequate convening of the State Level Empowered Committee

The Project Appraisal Document stipulated that the OWD would formulate the State Level Empowered Committee (SLEC), and ensure that the SLEC provided the overall direction and exercises the governance authority for the project. As such, the SLEC was required to meet regularly, from the beginning to the completion of the project.

Audit observed that, though the WB loan had been sanctioned in April 2009, the first meeting of the SLEC had been held in February 2011, after nearly two years from the implementation of the project. SLEC meetings were held 21 times till June 2017. Although the project works had continued till April 2021, no meeting was held between June 2017 and April 2021. Further, the gaps between two subsequent meetings ranged from 11 days to 344 days.

Thus, absence and delays in conducting the meetings adversely affected the decision making process, which impacted on the quality of project implementation and resulted in non-disbursal of ₹48.37 crore by the World Bank to the OWD, poor quality of roads, instances of excess payment etc.

In reply, the Government stated (March 2023) that after closure of WB loan the project was executed out of State Fund. Hence, no meetings of SLEC were convened. The reply is not acceptable, as the Project Appraisal Document's stipulations for the successful execution of the project works, formation of SLEC had no linkages with the funding arrangements. However, absence of SLEC impacted the quality and monitoring of project implementation, adversely.

6.6.4 Lack of third party quality monitoring

As per the PAD, third party quality monitoring was to focus primarily on quality aspects, including the adequacy of design, execution of work by contractors, adequacy of supervision and quality enforcement arrangements.

Scrutiny of records at the PMU revealed that the OWD had engaged (June 2011) NIT, Rourkela, for independent third party review of the quality assurance system, for a period of one year (June 2011 to June 2012) with a payment of ₹37.39 lakh. As per the agreement, the NIT was required to submit two quality audit reports, apart from the inception report. Audit observed that ₹17.17 lakh had been paid (August 2012) up to submission of the inception report only. No further activities by the NIT were found to be on record. OWD had failed to obtain quality assurance from any independent third party. The lack of third party quality monitoring led to failure in ensuring quality, as discussed in the above paragraphs. Had third party quality monitoring been conducted, poor quality construction could have been detected during the implementation stage itself.

In reply, the Government stated (March 2023) that as there was no objection on the quality of the works, the OWD did not feel to engage any third party monitor. The reply is not acceptable as in deviation to the PAD norms, the project was executed without engagement of third party quality monitor.

6.6.5 Evaluation of project outcomes

As per the project completion report of WB, out of 16 revised indicators for evaluating the project, six indicators[191] were fully achieved, six[192] were partially achieved, one[193] was not achieved and three[194] were not assessed. WB rated the outcome performance as "moderately unsatisfactory" and the overall performance of the OWD as "unsatisfactory".

Further, as per Para 50 of the PAD**,** at least three user satisfaction surveys had to be conducted, during the project period, to assess the perception of road users, about the performance of the road sector conditions and services in the State. Though the roads under the project had been completed during (June 2016 to April 2021), such surveys were not conducted by the OWD. The roads under the project were completed with state plan funds, after closing of the WB loan. As per para 49 of the PAD, the results framework was to be the main instrument for monitoring and evaluation of the achievement of the PDO and outcome indicators.

However, no such evaluation in regard to achievement of the project indicators/targets, was made by the department. The WB rating of overall poor performance of the Odisha Road Project, could affect WB assistance for future developmental programs.

In reply, the Government stated (March 2023) that as WB discontinued the loan, the balance works were completed out of the State Fund and thereby no review on indicator performance was made. The reply indicates the indifference of the authorities towards monitoring the quality of work and outcomes thereof.

[191] (i) Right to Information (RTI) Compliance Ratio of PMU was maintained at 100 *per cent* (ii) Environment Management Plan (EMP), including bio-diversity management measures were implemented (iii) Percentage of project-displaced households and/or business were enabled to reestablish their shelter and/or business (iv) One road identified for PPP was concessionaire to the private sector (v) Milestones in Governance and Accountability Action Plan and Institutional Strengthening Action Plan were met and (vi) Road Safety Action Plan was put in place.

[192] (i) Vehicle speed in project corridors increased by 36 *per cent* (ii) The Odisha Works Department (OWD) efficiency and transparency improved through (a) the operation and maintenance arrangement for Core Road Network (CRN) put in place (b) core business functions were made operational (c) the OWD met right to information (RTI) disclosure requirements and implements the Governance and Accountability Action Plan (GAAP) (iii) 461 Km of State highways were widened and upgraded (iv) Road Asset Management System (RAM) Road Safety (RS) and Environment and Social (ES) Management functions were made operational in the OWD (v) Improved Road Policy and Legislative Framework was prepared and was in the process of adoption by the GOO and (vi) Sustainable road maintenance financing options were developed.

[193] Vehicle Operating costs in project corridors to be reduced by 15 *per cent.*

[194] (i) Favourable response by firms about the condition of the road corridors improved under the project (ii) Improvement in the road User Satisfaction Index and (iii) Improvement in the Network Congestion Indices

6.7 Conclusion

With a view to removing transport bottlenecks in the targeted transport corridors of the State, the OSRP was implemented with World Bank Loan assistance. A Detailed Compliance Audit of the project was conducted with the objectives of assessing whether the planning process for construction of road projects was efficient; financial management of the project was prudent; tendering and execution of project was carried out, ensuring economy, efficiency and effectiveness; and the monitoring mechanism of project was adequate and effective.

The State Road Sector Policy was pending approval of Government for more than eight years, resulting in lack of guidance, coordination and prioritisation. Due to defective preparation of DPRs without adequate survey and investigation, the scope of the works under OSRP had to be changed time and again, delaying project execution and undue benefits to contractors. Non-approval of the State Road Sector Policy, inadequate surveys and defective DPRs, resulted in excess expenditure of ₹310.65 crore, which could have been avoided. Due to poor implementation, World Bank loan of ₹48.37 crore was suspended, resulting in extra burden to the State exchequer. Delays in land acquisition, resettlement and rehabilitation of affected persons and shifting of utilities, resulted in delays in completion of works, apart from frequent termination of contracts. The project suffered from cost and time overruns and the department had to incur avoidable extra expenditure on maintenance of the road in order to make the road trafficable.

The financial management of the project was not consistent with stipulated norms/standards and codal provisions. Non-utilisation of allocated funds, within time, resulted in surrender of ₹57.82 crore, during 2019-22. In particular, more than 50 *per cent* of the funds being surrendered during the last two years, was indicative of imprudent financial management.

Preparation of inflated estimates, by providing excess lead charges, inadmissible overhead charges and erroneous hire charges, resulted in extension of undue benefits to the contractors. Delays in completion of the project necessitated extension of consultancy services, resulting in extra avoidable expenditure.

There was laxity in the monitoring of the project, due to the lackadaisical approach of the department. SLEC meetings were not conducted regularly, which affected quality planning and implementation of the project. Lack of adequate internal controls led to false claims, sub-standard execution and slow progress of the project. Though the roads had been designed for 20 years, there were a number of patches of rutting and cracks in the roads, within three years of completion (as noticed during joint physical inspection), which indicated lack of adequate monitoring by the department. Lack of third party monitoring led to failure in ensuring quality. Further, non-conduct of road user satisfaction surveys, after completion of the roads under the project, led to non-evaluation of project outcomes.

6.8 Recommendations

The Government may consider:

- immediate approval of the Odisha State Road Sector Policy, for better guidance, effective coordination and implementation of various road projects.
- preparation of DPRs on the basis of site surveys and investigation, for effective implementation of projects. Responsibility may also be fixed on officials who are responsible for preparation of defective DPRs.
- completion of pre-construction activities, as per project norms, before commencement of project works, to ensure timely completion of projects.
- adoption of a defect liability period of three years under the Standard Bidding Documents, as per norms prescribed by MoRTH.
- strengthening of the contract management mechanism, to avoid extra expenditure and undue benefit to the contractors.
- recovery of ₹132.08 crore from contractors, in case of two works arising out of retender of balance works, as per clause 15.4 of GCC and fixing responsibility on the officials who were involved in this case.
- initiating investigation at an appropriate level to detect connivance of departmental officers with the contractor.
- strengthening of the monitoring mechanism, for efficient planning and implementation of road projects.