

CHAPTER -II
PERFORMANCE AUDIT

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WATER RESOURCES DEPARTMENT

2.1 Implementation of Flood Control Measures in Bihar

Executive Summary

Introduction

Bihar is one of the most flood-prone States in India, with 73 per cent of the geographical area under the threat of recurring flood. Most of the rivers enter in north Bihar through Himalayan range of Nepal and heavy rainfall in catchment area of Nepal side as well as carry of heavy silt by the river cause rise in the river-bed-levels and ultimately result into recurrent flood in Bihar affecting human lives, livestock and assets.

(Paragraph 2.1.1)

Planning

Bihar is situated on the basin of river Ganga. For Ganga basin, Government of India (GOI) set up (April 1972) Ganga Flood Control Commission (GFCC) to prepare comprehensive plans for flood management and to monitor the execution of important flood control schemes particularly those executed under central assistance. However under long term plan, Water Resources Department (the department) neither enacted flood plain zoning bill (FPZB) nor set up flood forecasting unit at field levels, though recommended by GFCC (2004) as non-structural measures. Besides, as structural measures neither the DPR for construction of dams nor work for intra-linking of rivers or creation of detention basin was completed by the department as envisaged by GFCC in comprehensive plan for Bihar during 1986 to 2005.

(Paragraph 2.1.6.1)

Financial Management

The department implemented flood control measures works through the funds made available under State Plan, NABARD, Flood Management Programme in the ratio of 75:25 by GOI and State Government respectively and Central Plan (fully financed by Government of India) for the Kosi river in Nepal portion. However, during 2007-12, the department failed to utilize 11 to 44 per cent of the available funds mainly due to delayed/non sanctioning of schemes, delay in land acquisition, hindrance by local people and non-passing of bills by the treasuries. Each year department used to surrender the funds on the last day of the financial year and a total of ₹ 1098.18 crore were surrendered to Finance department. Further in violation of financial rules the department made 30 allotments for ₹ 47.47 crore to the divisions on the last days of financial year during 2007-12.

(Paragraph 2.1.7)

Implementation of Flood Protection Schemes

During 2007-12, department executed only short term measures like anti-erosion (AE) works, raising and strengthening of existing embankments, construction of new embankments and restoration of zamindari bandhs etc. Besides, the department also executed flood-fighting works during every

flood season. However, scrutiny of flood protection schemes revealed that the contract management of the department was deficient as was evident from the cases of less publicity of tender, allotment of work to ineligible contractor, loss to the Government owing to undue favour to a particular contractor as noticed in 16 test checked divisions and loss of ₹ 103 crore due to non availing of the benefit of competitive bidding in execution of Bagmati extension scheme. Besides, there were other deficiencies viz. non adherence of flood calendar (44 per cent) delays in execution of agreements and execution of works during flood period in disregard of codal provisions apart from infructuous expenditure (₹ 68.50 crore in four test-checked divisions), excess payment (₹ 6.25 crore in two test-checked divisions) and unfruitful expenditure (₹ 20.21 crore) While the infructuous expenditure was mainly due to non-abiding of recommendations of technical expert team and delayed/incomplete execution of anti-erosion works, the excess expenditure occurred due to payment at higher rates. Unfruitful expenditure resulted due to abandoning, closure/postponement of zamindari bandh in two test-checked divisions. Further, the department could increase only 61.47 km of embankment (4 per cent) against target of 1535 km as envisaged in eleventh five year plan period (2007-12).

(Paragraphs 2.1.8.2&2.1.9)

Manpower Management

There were shortage of key cutting-edge manpower in the department as vacancies in the post of Assistant Engineer and Junior Engineer were 27 and 39 per cent respectively whereas 84 and 81 per cent posts of Bandh Khalasi and Work Sarkar respectively were vacant in the 16 test checked divisions.

(Paragraph 2.1.10)

Conclusion

Despite increase in plan allocations after 2008, the department did not execute long term plans, ignored the enactment of Flood Plain Zoning Bill in State and relied solely on short term measures. While the financial management was ineffective and was marred by under utilization (11 to 44 per cent) of available fund due to delayed/non sanctioning of schemes, delay in land acquisition and non-passing of bills by the treasury during 2007-12, the implementation of short term measures was also studded with deficiencies like irregular award of contract, non-adherence of flood calendar, infructuous expenditure, excess payment, loss to the Government etc. The implementation of flood control measures was further affected by shortage of key-cutting edge manpower in the department. Besides, the department could construct only 61.47 km embankment against the target of 1535 km fixed in 11th plan. Further, the State had to suffer substantial losses due to flood during 2007-12 though a large amount on flood relief had been spent during the period. Hence, the reliance on ineffective short term measures by the department could not provide solution to the recurring flood as well as its devastations in the State.

(Paragraph 2.1.13)

Recommendations

The department should evolve and adopt a rational flood management programme for the State by including a judicious mix of implementation of structural and non structural measures. The structural measures should have

an appropriate combination of short-term measures like embankments and long-term sustainable measures like reservoirs with adequate provision of flood cushion and natural detention basins. Under non-structural measures, enactment of flood plains zoning bill, evolving of flood forecasting and warning system, disaster preparedness and response planning, etc should be implemented. The timely completion of schemes should be strictly ensured through effective monitoring coupled with immediate deployment of key working staff at the optimum level.

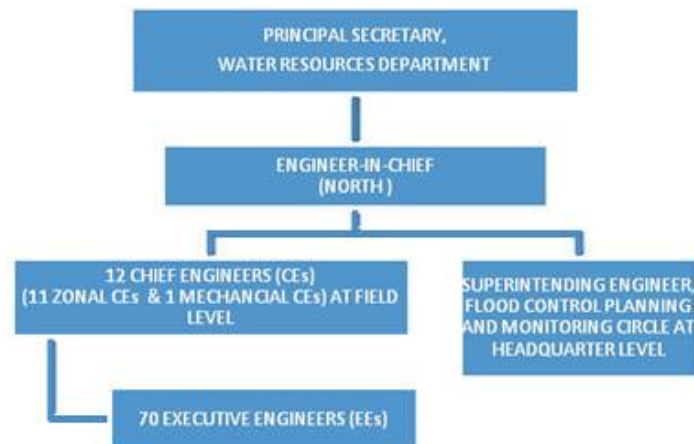
(Paragraph 2.1.14)

2.1.1 Introduction

Bihar is one of the most flood-prone States in India with 73 per cent of the geographical area (i.e.68.80 lakh hectare out of total geographical area of 94.16 lakh hectare) of Bihar is under the threat of every year flood. Moreover, 16.5 per cent of the total flood affected area in India is located in Bihar. Floods in Bihar are a recurring disaster, which destroys not only human lives but also livestock and assets. Most of the rivers¹ enter in north Bihar through Himalayan range of Nepal and heavy rainfall in catchment area of Nepal side as well as carry of heavy silt by the river, causes rise in the river-bed-levels and ultimately results into recurrent flood in Bihar.

2.1.2 Organisational set-up

Following is the organogram of Water Resource Department relating to implementation of flood control measures:



The Principal Secretary, Water Resources Department (WRD) of the State Government has the overall responsibility for implementation of flood control measures for mitigating flood hazards of the State. He is assisted by Engineer-in-Chief (North), Superintending Engineer of Flood Control Planning and Monitoring Circle (FCPMC) at Secretariat level and 12 Chief Engineers (11 Zonal Chief Engineers and one Mechanical Chief Engineer), 31 Superintending Engineers and 70 Executive Engineers in the field formations.

¹ Bagmati, Gandak, Ghagra, Kamla Balan, Kosi etc.

Besides, the department has three committees² for providing technical recommendations and a Scheme Review Committee (SRC) to provide assistance regarding technical and financial aspects for finalization of works to be executed every year.

2.1.3 Audit objectives

The audit objectives were to assess whether:

- The government of Bihar has made comprehensive long term plan, medium term and short term annual plan to combat the menace of recurrent floods and plans were implemented effectively;
- fund/ budgetary support made available was adequate to the requirement and was utilised effectively efficiently; and
- formulation of projects/schemes to prevent and control floods were effective and need based, economical efficient ;
- adequate manpower was made available for preventing and controlling floods in Bihar;
- the impact of flood control measures was effective in minimizing the damage to life and property during the period and
- monitoring and control system was adequate and effective.

2.1.4 Audit criteria

The provisions of the following were used as criteria to arrive the performance audit and conclusion:

- Flood Management Rules, 2003 of the State Government;
- Guidelines on Flood Management Programme (FMP) issued by Government of India;
- Bihar Public Works Accounts Code (BPWAC) and Bihar Public Works Department Code (BPWDC) ;
- Budget estimates and
- Terms and conditions relating to release of fund and award of works.

2.1.5 Scope of audit and methodology

Records of Engineer-in-Chief (North) and SE, Flood Control Planning and Monitoring Circle at Secretariat, three CE³ (out of 12), six SEs⁴ (out of 31)

² *Gandak High Level Committee (GHLC) for recommending flood control measures to be executed on Gandak river, Kosi High Level Committee (KHLC) for same on Kosi river and for remaining rivers State Technical Advisory Committee (STAC).*

³ *Bhagalpur, Birpur and Muzaffarpur*

⁴ *Barrage Circle, Birpur, Irrigation Circle, Bhagalpur, Head Works Circle, Sitamarhi, Flood Control Circle, Darbhanga, Flood Control Circle, Gopalganj and Mahananda Flood Control Circle, Katihar*

and 16 Divisional Offices⁵ (out of 70) alongwith their sub-divisional offices in the divisions for the period 2007-12 were test-checked during April to August 2012 and further in October 2012. The test-check divisions are selected by using Probability Proportional to Size with Replacement (PPSWR) method for random samplings. Audit methodology included examination of records, issuance of questionnaire, consideration of reply of the department to the audit memos issued etc. In order to explain the objectives of audit, its methodology, scope, coverage, focus and to elicit the departmental views, an entry conference was held in April 2012 with the Principal Secretary of the department. The exit conference held with Principal Secretary, WRD on 1 February 2013 wherein government views/ replies were obtained and incorporated at appropriate places.

Audit findings

2.1.6 Planning

Flood Management Information System



Bihar lies in the Ganga basin as rivers flow through Bihar ultimately meet with the Ganga River. For Ganga basin, Government of India (GOI) set up (April 1972) Ganga Flood Control Commission (GFCC) to prepare comprehensive plans for flood management and to monitor the execution of important flood control schemes particularly those executed under central assistance. Scrutiny of comprehensive plans and recommendations as suggested by GFCC revealed that two types of flood control measures i.e. long term and short term measures were recommended to be carried out for each river.

⁵ Flood Control Division-1, Jhunjhpur; Bagmati Division, Runnaisaidpur; Flood Control Division, Thakraha at Gopalganj, Champaran Division, Motihari, Flood Control Division, Katihar; East Embankment Division, Birpur; East Embankment Division, Supaul, Waterways Division, Biharsharif; Flood Control Division, Naugachia, Waterways Division, Jehanabad and Irrigation Mechanical Division, Birpur; Head Works Division, Birpur; West Embankment Division, Kunauli, East Sone High Level Canal Division, Tekari, Flood Control Division-2, Ara and Flood Control Division – 2, Khagaria

2.1.6.1 Long term measures

Long term measures comprising of non-structural and structural measures were required to be carried out by the department as per the recommendations of the GFCC. The details of recommendations of the GFCC and action taken by the department under non-structural and structural measures are discussed in succeeding paragraphs.

● Non-structural measures

The department failed to enact flood plain zoning bill.

Under non-structural measures, GFCC recommended (2004) to enact Flood Plain Zoning Bill (FPZB)⁶ in all the river system and regulate the developmental activities with the help of flood management maps. Further, the Government was required to set up its own flood-forecasting unit in the uncovered areas and the feasibility of opening a couple of flood forecasting sites in the Nepal territory were also to be explored, so that longer time lag is available for taking required measures to face the oncoming floods.

Scrutiny disclosed that the department had not enacted (August 2012) FPZB in any of the river system. It was further observed that in all the 16 test-checked divisions, flood-forecasting units were not established (November 2012) at field level. The department justified (November 2012) the non-enactment of the bill as impracticable and hindrance in the pace of development of the State. The reply was not in conformity with the recommendations of the GFCC. Besides, of 16 test-checked divisions, in five divisions⁷, the developmental activities like raising & strengthening and construction of new embankments as well as anti-erosion works were hampered due to non enactment of FPZB. Thus, due to non-enactment of FPZB, development activities actually suffered and the reasons given by department for non enactment of FPZB were not the true reasons.

● Structural measures

GFCC recommended construction of dams with flood cushion across the rivers, intra-linking of rivers and construction of detention basins etc. under structural measures of long terms plan for mitigating flood hazards in the State.

Construction of dams

Dams were not constructed though recommended by GFCC since 1986.

To reduce the deposition of silt in river and regulate water flow, GFCC in its comprehensive plan recommended construction of following dams with flood cushion:

- (i) A dam on Barah Kshetra as well as on the tributaries of the river Kosi (1986).
- (ii) A reservoir with adequate flood cushion at Noonthore in Nepal (1991) on the Bagmati river,
- (iii) Three dams in Nepal (2004) on the river Gandak, and

⁶ Discouraging creation of valuable assets/settlement of the people in the areas subject to frequent flooding i.e. enforcing flood plain zoning regulation.

⁷ Flood Control Division No.1, Jhanjharpur; Bagmati Division, Runnisaipur; Flood Control Division, Thakraha at Gopalganj; Flood Control Division, Katihar; Champaran Division, Motihari

- (iv) A multipurpose reservoir at Chisapani in Nepal (2005) on the river Kamla Balan.

However, the department had not prepared even the Detail Project Report (DPR) of above proposed dams. In reply, the department stated (November 2012) that high dams are to be constructed in Nepal territory and it can only be sorted out at the level of Sovereign State. It was, however, stated that a Joint Project Office, Biratnagar (Nepal) was established in 2004 to study the feasibility of proposals of dam on Bagmati, Kamala Balan and Kosi river and the DPR of dam on Barah Kshetra was expected to be prepared by February 2013. Reply was not sufficient as the long term measures to prevent the flood hazards remained un-addressed.

Intra-linking of rivers

DPR for intra-linking of river was not prepared

Intra-linking of rivers was also envisaged in the comprehensive plans of the GFCC. Besides, National Perspective Plan of intra-linking of rivers to transfer water from surplus basin to water deficit basin, 15 intra-linking schemes for the link canals directly related to this State, were identified (May 2006) for preparation of DPR. Of 15 schemes, four⁸ were exclusively identified for flood sector as flood mitigation schemes. The preparation of DPRs for these schemes entrusted to National Water Development Agency (NWDA) in May 2006 (*Appendix-2.1.1*). Out of four intra-linking scheme, DPR for three⁹ schemes was to be completed upto December 2012. However, the department had intimated (September 2012) that the preparation of DPRs of three river intra-linking scheme was under preparation and likely to be completed by December 2013 and Preliminary Project Report (PPR) for remaining one intra-linking scheme has been submitted to Central Water Commission (CWC) by NWDA. It was further observed that neither allotment nor budget provision were formulated by the department for execution of above mentioned work upto 2010-11. Besides, budget provision amounting to ₹ 83.25 crore meant for Burhi Gandak-Noone-Baya-Ganga river link during 2011-12 was surrendered (August 2011: ₹ 80.00 crore and March 2012: ₹ 3.25 crore) due to the fund remaining unspent during the period.

In reply, the department stated (November 2012) that NWDA, a brain child of Government of India (GOI), was mandated for preparation of DPR for intra-linking of rivers. Hence, non-preparation of DPRs was failure in the part of GOI. The reply was not acceptable as State Government even not formulated budget for same upto 2010-11. Besides, the entire fund made available by the Government for preparation of DPR for one river was surrendered by the department during 2011-12.

⁸ *Kohra-Chnadravat Link (Burhi Gangak-Gandak), Burhi Gandak-None-Baya Ganga Link, Kosi – Ganga Link and Bagmati-Burhi Gandak link through Belwadhar*

⁹ *Kohra-Chnadravat Link (Burhi Gangak-Gandak), Burhi Gandak-None-Baya Ganga Link, Kosi – Ganga Link*

Detention Basins

The department had neither identified the sites nor released funds to any division for creation of detention basins.

Detention basins are usually formed by utilising natural depressions/swamps and lakes by improving their water retention and storage capacity by constructing encircling embankments and providing suitable devices for regulating the release of stored water. GFCC, in its recommendations, advised the use of natural detention basin in Mokamah Tal as a major flood detention basin in main Ganga stem river system. Accordingly, the department was to identify suitable sites in other rivers for creation of detention basins to store floodwater, which would help in flood moderation.

This measure was also not implemented by the department as they had neither identified the sites nor released funds to any division for creation of detention basins during 2007-12. In reply, the Government intimated (August 2012) that DPRs of detention basins was under evaluation and would be prepared by December 2012. However, no further progress in this regard had been received from the Government (February 2013).

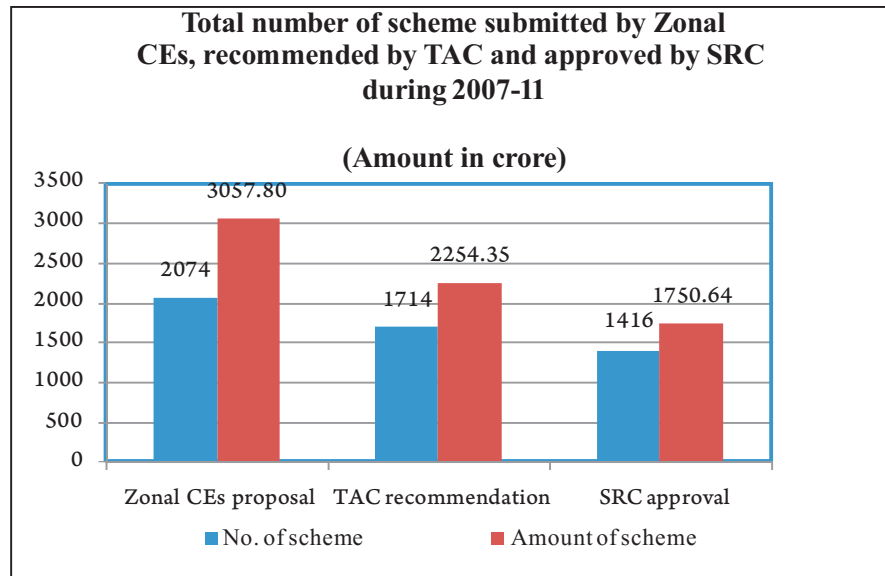
2.1.6.2 Short-term measures

Under short-term measures, GFCC recommended to construct new embankments at un-embanked portion of rivers and maintain the existing embankments by executing various anti-erosion works¹⁰ to safeguard the embankments from erosion. According to the Flood Management Rules, 2003, Zonal Chief Engineers (CEs) were to prepare schemes of anti-erosion works as per actual assessment i.e. based on previous year flood scenario and place the proposals before Technical Advisory Committee (TAC) for their recommendations. Thereafter, the Scheme Review Committee (SRC) was to prioritise and select the most essential scheme, within the fund available, amongst the recommendations of the TAC. The details of total works proposed by CEs, recommended by TAC and finally approved by SRC for the period before flood 2007 to 2011¹¹ (except for 2008 as it was not available in the department) are indicated in **Chart no.1**.

¹⁰ *Raising and strengthening of embankment, Construction of spurs/ studs/ revetment etc.*

¹¹ *Works of "before flood 2007" executed during 2007 -08 similarly, works of before flood 2011" executed during 2011 -12.*

Chart No. 1



(Source: Reports of SRC)

SRC curtailed 32 per cent of Zonal CEs proposal of flood protection schemes.

From **Chart no.1**, it was evident that 2074 schemes amounting to ₹ 3057.80 crore were submitted to TAC by Zonal CEs for execution of flood control works before flood during 2007-2011 (except 2008). Of which TAC recommended 1714 works for ₹ 2254.35 crore and finally 1416 works costing ₹ 1750.64 crore were approved by SRC. The reduction of number of flood protection works by SRC against proposals of Zonal CEs was 32 per cent, while, curtailment in amount was 43 per cent. Reason for curtailment/deletion of schemes was not mentioned either by TAC or SRC.

In reply, the department stated (November 2012) that SRC prioritizes the execution of schemes on the basis of budgetary allocation for that particular financial year. The reply was not acceptable because as per para 4.9.3 of Flood Management Rules, 2003, schemes were prepared on the basis of recommendations of anti-erosion committee consisting of concerned CE, one another CE and one SE from headquarter level after proper site verification and there was consistent savings against provision of funds during the period. Hence, decision for sanctioning of the schemes by SRC was not justified.

2.1.7 Financial Management

The department implemented flood control measures works (Head 4711) through the funds made available under State Plan, NABARD, Flood Management Programme (FMP) in the ratio of 75:25 by GOI and State Government respectively and Central Plan (fully financed by Government of India) for the Kosi river in Nepal portion.

2.1.7.1 Works expenditure (Plan head - 4711)

Based on the budget provision, allotment of funds for implementation of works, expenditure incurred and savings occurred under this head during 2007-12 as provided by WRD are indicated in **Table no. 1**.

Table no. 1
Budget provision, expenditure, surrender and lapse of fund under Plan head
(₹ in crore)

Year	Budget provision	Allotment	Expenditure	Savings		Total savings (percentage)
				Surrender	Lapse	
2007-08	399.42	232.71	221.97	10.74	166.71	177.45 (44)
2008-09	900.71	613.35	539.18	361.52	0.01	361.53 (40)
2009-10	1124.14	895.15	758.98	365.16	0	365.16 (32)
2010-11	931.51	745.16	705.47	226.04	0	226.04 (24)
2011-12	1271.39	1136.67	1136.67	134.72	0	134.72 (11)
Total	4627.17	3623.04	3362.27	1098.18	166.72	1264.90 (27)

(Source: As furnished by department)

As evident from the **table no.1**, total savings of the department ranged from 11 to 44 *per cent* against the budget provision and ₹ 166.72 crore was allowed to lapse during 2007-12. Delay/non-sanctioning of schemes, delay in land acquisition, hindrance by local people and non-passing of bills by treasuries were the main reasons of savings. Further, the allotment of funds and expenditure incurred by 16 test checked divisions are given in the **Table no.-2**.

Table no. 2
Allotment, expenditure and savings in test-checked divisions (₹ in crore)

Year	Allotment	Expenditure	Savings		Total savings
			Surrender	Lapse	
2007-08	124.66	114.46	9.91	0.29	10.20 (8)
2008-09	162.27	157.15	5.12	0.00	5.12 (3)
2009-10	489.50	401.57	87.93	0.00	87.93 (18)
2010-11	414.93	366.26	48.67	0.00	48.67 (12)
2011-12	632.87	542.95	87.05	2.87	89.92 (14)
Total	1824.23	1582.39	238.68	3.16	241.84 (13)

(Source: As furnished by test-checked divisions)

The deficiencies noticed in financial management in the department as well as in the test-checked divisions are discussed in the following paragraphs:

- ***Surrender of fund on last day of financial year and deficient surrender reporting***

In contravention of Bihar Budget Manual, the department surrendered the savings to Finance Department on the last day of financial year during 2007-12.

Bihar Budget Manual, Rule - 112 stipulates, "All anticipated savings should be surrendered to the Government immediately as soon as they are foreseen without waiting till the end of the year, unless they are required to meet excesses under some other unit or units which are definitely foreseen at the time. No savings should be held in reserve for possible future excesses."

Audit scrutiny of allotment letters, surrender reports of the department for the period 2007-12 revealed that the department had been surrendering the savings to Finance Department on the last day of every financial year in contravention of above stated rules. It was further observed that the department allotted ₹ 1136.67 crore to divisions in 2011-12 and showed entire amount as spent in surrender report. However, scrutiny of records disclosed that the test checked divisions surrendered ₹ 87 crore and allowed to lapse ₹ 2.87 crore during 2011-12. Thus, the surrender report of the department pertaining to 2011-12 was incorrect and needed to be investigated and the responsibility fixed for such misleading report.

In reply, the department justified (February 2013) its act by stating March of any year was a month of full working season and expenditure was to be incurred even on the last day of the month. Reply was in contravention of rules of aforesaid budget manual as the department was expected to anticipate saving unless specific rules are revised.

● **Delayed allotment of fund**

The department allotted fund to divisions in the month of March during 2007-12 in contravention of Bihar Financial rules.

Rule 472 of Bihar Financial Rules vol. I prescribes that “the head of each department will be responsible for controlling expenditure from the grant or grants at his disposal, and will exercise his control through the controlling officers, if any, and disbursing officers subordinate to him. Further, Finance department had issued (January 2007) direction to all the head of departments to ensure the release of sanction and allotment orders by the month of January. Scrutiny of records disclosed that in disregard of afore-said rule and orders, WRD released total 388 number of allotments during 2007-12 amounting ₹ 549.10 crore in the month of March, out of which 30 allotment letters amounting ₹ 47.47 crore were released on the last day of financial year (*Appendix-2.1.2*).

In reply, the department stated (February 2013) that the main working season of this department is from October to June of next year and the month of March in any year was a month of full working season. Hence, to facilitate the maximum utilization of available funds and to avoid the occurrence of liabilities, delayed allotment took place. Reply was not acceptable as the department was responsible for adhering to the prescribed financial rules unless it is amended by competent authority for particular department. By timely issue of allotment orders and judicious financial management, the problem of fund crunch in March could be overcome.

2.1.7.2 Expenditure on establishment

Establishment expenditure against works expenditure of department ranged between 18 and 40 per cent during 2007-12 in contravention of BPWD code.

According to Bihar Public Works Departmental (BPWD) Code Rule 212, clarified in Bihar Public Works Account (BPWA) Code rule 5 of Appendix 4, expenditure on establishment of a works department should not exceed 12 per cent of works expenditure. The Budget provision, allotment, expenditure and savings on establishment (under non-plan heads 2711-01-001-0003) during 2007-12 were indicated in **Table no. 3**.

Table no. 3

Budget provision, allotment, expenditure and savings on establishment

(₹ in crore)

Year	Budget provision	Allotment	Expenditure	Savings			Percentage of establishment expenditure over plan expenditure ¹²
				Surrender	Lapse	Total savings	
2007-08	104.47	95.46	89.83	11.78	2.86	14.64 (14)	40
2008-09	131.82	127.74	121.67	7.25	2.90	10.15 (8)	23
2009-10	180.47	141.90	132.82	47.64	0.01	47.65 (26)	17
2010-11	159.82	139.94	124.78	29.08	5.96	35.04 (22)	18
2011-12	150.62	141.66	133.00	17.55	0.07	17.62 (12)	12
Total	727.20	646.70	602.10	113.30	11.80	125.10 (17)	18

(Source: As furnished by department)

¹² Plan expenditure : 2007-08 : ₹ 221.97 crore, 2008-09 : ₹ 539.18 crore, 2009-10 : ₹ 758.98 crore, 2010-11 : ₹ 705.47 crore, 2011-12 : ₹ 1136.67 crore

From above table, it was evident that savings against budget provision of the department ranged from eight to 26 *per cent*. Besides, the establishment expenditure against works expenditure of department ranged between 18 and 40 *per cent* during 2007-11 for which no clarification had been made by the department (February 2013). However, establishment expenditure during 2011-12 was within the prescribed norms.

2.1.8 Implementation of flood protection schemes

During 2007-12, department executed only short term measures like anti-erosion (AE) works, raising and strengthening of existing embankments, construction of new embankments and restoration of zamindari bandhs¹³ etc. Besides, the department also executed flood-fighting works during every flood season.

In 16 test-checked divisions, total 3881 nos. of agreement valuing ₹ 1263.13 crore were executed during 2007-12. Out of these, 138 works of flood protection schemes valuing ₹ 812.96 crore were examined. Audit observations on execution of above works discussed in succeeding paragraphs.

2.1.8.1 Contract Management

Department executed the flood control works by engaging contractors through open competitive bidding system. In this context, rules of BPWDC, clauses of Standard Bidding Documents (SBD) and different circulars of Government were applicable in respect of selection of suitable contractor for executing the works economically and efficiently. Government constituted tender committees at the department level and prescribed competency to accept tender at every level. Scrutiny of tender documents in 16 test checked divisions revealed violation of prescribed rules and clauses in award of contract as discussed in succeeding paragraphs.

● Limited publicity of NIT

BPWDC Rule 159 (iv) specified that normally 10 days time from the date of publishing of tender in paper/internet was to be provided to bidder for submission of tender documents in emergency.

Audit noticed that in six agreements¹⁴ of AE works, only two to six days time was provided for submission of tender documents from the date of publishing of Notice Inviting Tenders (NITs) in newspapers. As a result, only two to three bidders participated in each work. Thus, the purpose of providing wide publicity to attain competitive bidding could not be achieved.

In reply, the department stated (February 2013) that in Champaran Division, Motihari, it was a case of retender and in Head Works Division, Birpur also the tender was published one week before the date of sale of tender in public

The purpose for providing wide publicity to attain competitive bidding could not be achieved.

¹³ During pre-independence period the then Zamindars of locality constructed bandhs to protect villages residing nearby banks of river.

¹⁴ Head Works Division, Birpur : 2, 3, 4 SBD/ 2008-09 : Date of publication of NIT : 19.2.2009 and last date of submission of bid : 21.02.2009
Champaran Division, Motihari : 3, 4, 5 SBD/ 2011 -12 : Date of publication of NIT : 13.4.2011 and last date of submission of bid : 19.4.2011

interest. Reply was not acceptable as even in emergency, minimum ten days was to be provided to bidder for submission of bid documents as per *ibid* rules. Moreover, in the absence of enough bidders due to less time available for submission of tender document the department was deprived of competitive rates.

● ***Allotment of work to ineligible contractor***

The conditions of SBD were not adhered to, in finalisation of tender and work amounting ₹ 498.53 crore was awarded to ineligible contractors, which amounted to undue favour to them.

The conditions of SBD were required to be adhered to while awarding the contract. The conditions included nine¹⁵ compulsory requirements and four¹⁶ other compulsory requirements for qualifying in technical bid under SBD. No opportunity for clarification and modification was to be given to a bidder who did not fulfill the compulsory requirement. It was also specified that if a bidder participated as joint venture, then all the partners of the firm would have to fulfill all criteria/condition individually of technical bid. Further, Para 4.7 of Standard Bidding Documents (SBD) Section 1 : Instructions to Bidders (ITB) stipulates that bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the total bid value. Besides, para 28.1 *ibid* of “F-Award of contract” also prescribed that in no case, the contract shall be awarded to any bidder whose available bid capacity is less than the evaluated bid price, even if the said bid is the lowest evaluated bid.

In course of test check of records, the following cases of violation of contract conditions while awarding the contracts were noticed:

- In 13 cases, works for ₹ 124.97 crore was awarded to contractors who did not meet one or more than one compulsory requirements such as experience of similar work executed, availability of required key plants & equipment, bid capacity and financial turnover as well as other compulsory requirements as indicated in ***Appendix-2.1.3***.
- In two cases¹⁷, works for ₹ 123.80 crore were awarded (August 2009 & April 2010) to a debarred private contractor (M/s JKM Infra Project Pvt. Ltd. New Delhi).
- In one case¹⁸, work for ₹ 7.72 crore was awarded to a private contractor (M/s Nalanda Tubewell Boring Works (P) Ltd, Patna) who submitted false representation regarding submission of bid against other work and having record of poor performance.
- In one case¹⁹, work for ₹ 238.59 crore was awarded to a Joint Venture Company (M/s NCCL-Bashishtha, Hyderabad) one of whose partners did not possess registration, labour license and sales tax clearance.

¹⁵ *Registration, Earnest money, Sales tax clearance, Labour license, Turnover, experience of similar work executed, key plant and equipment, technical person and a affidavit made by contractor.*

¹⁶ *Experience in terms of quantity, Bid capacity, Programme of construction and power of attorney*

¹⁷ *West Embankment Division, Kunauli at Birpur : ₹ 117.35 crore (1SBD/2009-10), Flood Control Division, Katihar : ₹ 6.45 crore (1SBD/2010-11)*

¹⁸ *Flood Control Division, Katihar : ₹ 7.72 crore (4SBD/2011-12)*

¹⁹ *Eastern Embankment Division, Supaul : ₹ 238.59 crore (1SBD/2009-10)*

Further, none of the partners had enclosed the proof of ownership/lease of key plant and equipment.

- In one case²⁰, work for ₹ 3.45 crore was awarded to a private contractor (M/s Kamaladitya Construction (P) Ltd, Bokaro) who submitted documents of other company.

Thus, from the above it was evident that the conditions of SBD were not adhered to in finalisation of tender and work amounting ₹ 498.53 crore was awarded to ineligible private contractors.

In reply, the department stated (February 2013) that conditions of SBD had been followed while awarding the contract. The reply was contrary to facts as the illustrated examples also included violation of SBD clauses. However, Government accepted (February 2013) that the department relied on the statements submitted by the contractors while evaluating the tender documents and a management information system of contractors and works needed to be developed in the department.

- ***Loss to the Government due to undue favour shown to the Private contractor***

During audit of Waterways Division, Biharsharif, it was noticed that EE of the division executed (January 2012) an agreement (3SBD/2011-12) for executing the works of raising and strengthening of zamindari bandh of Paimar River from Kolua to junction point (Muhanae) for ₹ 6.92 crore. Further, scrutiny of works file revealed that on the basis of decision taken by DTC (June 2008), same work was entrusted (June 2008) to JKM Infra Project Pvt. Ltd, New Delhi for ₹ 5.81 crore (6f2/3/2008-09). However, against the decision of DTC, a case was lodged by another firm in the Hon'ble High Court of jurisdiction at Patna. Hon'ble High Court quashed the tender (May 2010) and observed that the decision of DTC was not fair and tilted in favour of a tenderer. Audit observed that in compliance to orders of High Court, EE invited a fresh tender (July 2011) for the same work and entrusted the work (January 2012) to a agency for ₹ 6.92 crore. Further, scrutiny also revealed that due to change of schedule of rates the cost increased by ₹ 1.11 crore. Thus, it was evident that due to injudicious/ unfair decision of DTC, Government would have to sustain a loss of ₹ 1.11 crore.

**Due to injudicious/
unfair decision of
DTC, Government
would have to sustain
a loss of ₹ 1.11 crore.**

In reply, the department stated (February 2013) that due to delay in legal process and follow up action, revised schedule of rates had been applied, hence, cost was escalated. Reply was not acceptable as points mentioned by audit relates to undue favour by DTC to a particular contractor resulting in loss to Government in re-allotment of work.

- ***Loss to government due to undue favour to HSCL in award of contract***

Water Resource Department (WRD) entrusted (December 2005) the work of preparation of Detailed Project Report (DPR), work of raising & strengthening and construction of new embankments (both left and right) of Bagmati river to Hindustan Steel Works Construction Ltd. (HSCL) on nomination basis.

**Work was awarded
to HSCL on
nomination basis
without inviting
tender.**

²⁰ *Flood Control Division, Katihar : ₹ 3.45 crore (3 SBD/ 2010-11)*

Records/files relating to award of contract to HSCL disclosed following points :

- WRD sent offer letter with a copy of model Memorandum of Understanding (MoU) on 31 May 2005 to four Public Sector Undertakings i.e, National Hydro Power Corporation (NHPC), National Thermal Power Corporation (NTPC), National Building Construction Corporation (NBCC) and HSCL for execution of river training works of Bagmati river with instruction to obtain the copy of Detail Project Report (DPR). In response to the department's offer, two agencies NBCC and HSCL had submitted their acceptance in June 2005. Further, the offer acceptance of NBCC was not considered by the department on the ground that this agency did not submit format of MoU and had pending case with commercial tax department.
- NBCC had requested the department to issue the copy of DPR as prepared by the department to have a first hand information of the whole project, so that details of work could be worked out before finalisation of MoU. The request of NBCC was not accepted and issued format of MoU signed between the department and HSCL in December 2005.

Scrutiny revealed that there was no evidence regarding pendency of any case with Commercial Tax Department against NBCC as mentioned by Secretary, WRD in rejecting the acceptance of this agency. Besides, while forwarding the case to Governor for his approval (November 2005) the department did not mention that NBCC was ready to execute this work. The department withheld the necessary documents (DPR) though available with department and the agency was not considered for award of work without having valid reason. Further scrutiny revealed that HSCL was selected on nomination basis without getting consent of Planning department. Further, Secretary of this department also strongly objected for selecting the agency without inviting tender and without judging technical and financial profile as well as past performance profile of the selected agency. He, however, also advised to adopt a transparent selection process while selecting an agency for this work. However, his file was not forwarded to Planning department and on the recommendation of the Chief Secretary, HSCL was selected on nomination basis to execute the works in Bagmati river.

Hence it was evident that undue favour was extended to HSCL. An MoU was executed with HSCL (December 2005) by the Joint Secretary of WRD and the work was awarded to HSCL as executing agency.

Further, scrutiny of MoU disclosed that HSCL, being the executing agency was required to get the entire works executed through sufficient deployment of technical and support personnel for satisfactory execution and timely completion of project. However, it was noticed that M/s HSCL did not have required personnel, plants and machineries to execute such a vast earthwork. As such, the agency subletted the entire work of Bagmati Extension Scheme to M/s AVANTIKA -G H Reddy & Associates (JV) on 23 December 2005 i.e. just after four days of execution of MoU with the Government. Further scrutiny of tender finalisation registers of Chief Engineer (CE), WRD, Muzaffarpur disclosed that both the subletted agencies had separately

Loss of ₹ 103 crore due to non-availing of benefit of competitive bidding

submitted the bid documents (June 2010, February 2011 and May 2012) at 15 per cent below the estimated cost for similar nature of works (raising and strengthening and construction of embankments) under the same division in which they were already executing the works of Bagmati Extension Scheme, at 10 per cent above the estimated cost. However, one work of construction of embankment was entrusted to a subletted agency (G H Reddy & Associates) at 15 per cent below of SoR (17SBD/2010-11 of Bagmati Division No.1, Sitamarhi).

Thus, it was apparent that had the NIT been published, Government would have benefited from the competitive bidding and the aforesaid work could have been executed 15 per cent below instead of 10 per cent above the estimated cost of work. Consequently, department had to suffer an actual loss to the tune of ₹ 103 crore against the total payments of ₹ 453.20 crore made to HSCL by the concerned five divisions²¹ during 2006-07 to September 2012 on execution of Bagmati Extension Scheme.

In reply, the department stated (February 2013) that this work was awarded to HSCL and MoU had been signed with the agency in accordance with stipulated rules and after seeking concurrence of Law as well as Finance department and after approval of Governor having power vested in the Council of Ministers. The department further stated that contention of audit for not tendering the work is not correct as tender rates may not always necessarily be 15 per cent below SoR. Reply of the department was ambiguous as departmental rules prescribed for engaging a contractor by inviting tender, besides proposal of planning department and Development Commissioner regarding selection of agency in a transparent manner was not considered. Thus, the department's decision was not fair and tilted in favour of HSCL. Besides, the executing agency, engaged in this work was already doing the similar nature of work in same division at 15 per cent below SoR as well as it was also noticed in test checked divisions that majority of works were awarded to contractor at 15 per cent below SoR. Hence, it was evident that had the NIT been published and facility for competitive bidding availed, Government could have save an actual loss to the tune of ₹ 103 crore on the payments already made till date (October 2012).

2.1.8.2 Execution of flood protection works

Scrutiny of execution of flood protection works in test check divisions revealed instances of deficiencies like non-adherence of flood calendar, infructuous and avoidable expenditure and excess payment as discussed in succeeding paragraphs.

● Non-adherence to flood calendar

Department prepares a Flood Calendar every year for timely completion of flood protection and flood fighting works. Flood calendar envisages execution period of flood protection work as four and half month.

44 per cent Flood protection works executed without adhering flood calendar specified by the department.

²¹ FCD, Hathauri : ₹ 80.63 crore, FCD, Darbhanga : ₹ 45.09 crore, Bagmati Division, Runnisaipur : ₹ 197.32 crore, Bagmati Division No.1, Sitamarhi : ₹ 53.35 crore and Bagmati Division, Sheohar : ₹ 76.81 crore.

Scrutiny disclosed that of 138 test checked flood protection works, the schedule of flood calendar was not adhered in 61 (44 *per cent*) works in 16 test checked divisions and delay ranging from eight days to more than four & half month was occurred in execution of agreements of works during 2008-12, as indicated in *Appendix-2.1.4*.

As a result, 23 works remained incomplete and execution of 20 works done during flood period, which was in disregard of Rules of BPWD Code Vol. I : Annexure A : State Government Decision no. 55 (February 1988) as well as flood calendar of the department.

In reply, the Government attributed (November 2012) non-adherence of flood calendar mainly to court cases, elections and the delay in granting techno-economic clearance of schemes of value more than ₹ 7.50 crore. Reply of the Government was not acceptable as no record was available in the test-checked divisional offices which could show that the commencement of works were delayed due to pendency of finalization of schemes in the court of law or owing to elections. Besides, of commented 61 works, value of only 15 works (25 *per cent*) was more than ₹ 7.50 crore each, however, in remaining 75 *per cent* of works too, flood calendar was not adhered.

- ***Infructuous expenditure***

An infructuous expenditure of ₹ 68.50 crore was incurred in three test-checked divisions due to non-adherence of the recommendations of technical expert team in construction of pilot channel and delayed/incomplete execution of AE works, as discussed here under:

Infructuous expenditure of ₹ 32.15 crore was incurred on pilot channel due to non-execution of regular dredging.

- The Technical expert team²² recommended (October 2008) to explore possibility of pilot channel²³ in upstream (u/s) and downstream (d/s) of Kosi barrage by regulating the barrage gates. Further, they also recommended studying the possibility of desilting of the u/s and d/s sides of barrage by means of hydraulic model studies. However, without considering these recommendations, Head Works Division, Birpur executed (March 2009) an agreement (4SBD/2008-09) for ₹ 13.99 crore for construction of two pilot channels in upstream (u/s) as well as in downstream (d/s) of Kosi barrage. Scrutiny further disclosed that the work of pilot channel in d/s was completed in June 2009 after incurring expenditure of ₹ 7.13 crore. Later, the pilot channel silted in December 2009 and again an agreement (02SBD/09-10) of ₹ 8.14 crore was executed (March 2010) for its renovation next year. Scrutiny revealed that a sum of ₹ 7.33 crore was again incurred on renovation work and the pilot channel was once again silted (September 2010) due to non-conducting of dredging²⁴ of the channel. However, Central Water and Power Research Station (CWPRS), Pune recommended (December 2009) after hydraulic model test that pilot channel should be suitably bell mouthed and periodical dredging of the

²² Central Water Commission, New Delhi, GFCC, Patna and CWPRS, Pune

²³ To channelize the water flow with a view to activate the flow of river centrally

²⁴ Removing silt, sand and mud from channel

mouth of the pilot channel should be ensured. Thus, it was evident that first time the pilot channel was constructed without conducting model test and despite recommendations of CWPRS, regular dredging was not ensured. This resulted into infructuous expenditure amounting to ₹ 14.46 crore to the government.

Similar cases of silting of pilot channels was noticed in following three cases as periodical dredging were not carried out in Sl. No. 1 and 2 of table below whereas in Sl. No. 3 even pilot channel was left incomplete. However, an expenditure of ₹ 17.69 crore were spent on them. Details are given in the **table no.4:-**

Table no. 4
Infructuous expenditure on pilot channels

Sl. No.	Name of division	Agreement no/ year of the work of pilot channel	Incurrred expenditure (₹ in crore)	Name of river	Remarks
1	Eastern Embankment Division, Birpur	1SBD/09-10	9.45	Kosi	Silted in absence of periodical dredging
2	Flood Control Division Naugachiya	3 SBD/08-09	5.27	Ganga	
3	Flood Control Division Naugachiya	4SBD/09-10	2.97	Kosi	Silted as left incomplete
		Total	17.69		

(Source : records of test-checked divisions)

As shown in the table, the construction of two pilot channels without ensuring the dredging and leaving one pilot channel incomplete resulted in infructuous expenditure of ₹ 17.69 crore.

In reply, the department stated (February 2013) that owing to very high annual sediment load and unavailability of dredging machine the siltation in different location of the bed of river was natural. It further stated that the alignment of the said pilot channel constructed in subsequent years was different depending upon the pattern of silt deposition in the previous flood year. Reply of the department was not acceptable as arrangement for periodical dredging of pilot channel was to be ensured by the department.

Incomplete execution of pilot channel led to infructuous expenditure of ₹ 2.36 crore coupled with avoidable expenditure of ₹ 11.62 crore.

- An agreement for excavation of pilot channel with laying of 303 porcupines between 142.70 Km. and 152.00 Km. of Saran Embankment in river Gandak was executed (15 May 2011), by Flood Control Division, Thakraha at Gopalganj for ₹ 6.89 crore. The scheduled completion date of work was 31st May 2011. As per estimate of the work, the pilot channel was to be constructed in 4.6Km length and 3.5 meter depth entailing excavation of 341295 cubic meter earth. Records of the division disclosed that the work was continued upto 20th July and after excavation of 115755 cubic meter earth (34 per cent) the work was stopped and porcupine could not be constructed due to increase of water level and payment of ₹ 2.36 crore was made (August 2011) to the contractor. Scrutiny disclosed that the work was

awarded to contractor after a delay of 135 days from the schedule of flood calendar, which resulted into incomplete execution of work, and the contractor could excavate upto the depth ranging from 2.5 to 2.75 meter only. This resulted in accumulation of silt in the incomplete pilot channel and the division was compelled to execute flood fighting work of ₹ 4.79 crore during flood 2011 and AE work worth ₹ 6.83 crore (19SBD/2011-12: ₹ 3.49 crore and 21SBD/2011-12 : ₹ 3.34 crore) before flood 2012 between the said length of embankment.

The department accepted (February 2013) and stated that action has already been taken against erring official. Hence, the expenditure of ₹ 2.36 crore incurred on construction of pilot channel remained infructuous coupled with avoidable expenditure of ₹ 11.62 crore on flood protection works.

Expenditure of ₹ 29.81 crore incurred on incomplete execution of flood protection & flood fighting works proved infructuous

- Flood Control Division, Naugachiya constructed (September 2009) embankments of 10 km. length from Ismailpur to Bindtoli situated at downstream of Vikramshila Bridge over river Ganga and seven spurs with boulder pitching work. The agreement (2SBD/ 2008-09) for this work commenced on 2.3.2009 and was to be completed on 31.5.2009. However, only 61 *per cent* earthwork and 27 *per cent* boulder pitching on spur could be completed as on due date of completion. The remaining work²⁵ shown as completed upto July 2009 and payment of ₹ 27.77 crore²⁶ was made (September 2009) by the division. From above, audit observed that commencement of this work was delayed by one and half month as per flood calendar (21.1.2009) resultantly period of execution reduced to three months instead of four and half months. It was further observed that the work was executed during flood period, which was not suitable for execution of anti-erosion work as per norms of the department. Resultantly, the boulder-pitching works of spur no. 2 to 7 got damaged during flood 2009 and the division had to execute flood fighting works worth ₹ 3.05 crore on the same sites in flood 2010.

Thereafter, the division executed (April 2011) an agreement (1 SBD/2011-12) for restoration of damaged spur of Ismailpur to Bindtoli and made a payment of ₹ 4.90 crore (July 2011). It was again observed that only 38 *per cent* boulder pitching work could be executed. As a result, spur no.-6 started sinking and the division had to execute flood-fighting work of ₹ 6.73 crore to save these spurs during flood 2011. In continuation of previous executions, FCD, Naugachiya again executed agreement (18, 29, 30, 31 SBD of 2011-12) for restoration of damaged spurs of Ismailpur to Bindtoli which was to be completed before flood 2012 valuing ₹ 32.23 crore. Thus, from the above, it was evident that department/division did not complete these works in any of the three years as per flood calendar, resulting in infructuous expenditure of ₹ 29.81 crore²⁷ on AE works.

²⁵ Construction of embankment : 90 *per cent*, Earthwork of spur : 100 *per cent*, Boulder pitching on spur : 91 *per cent*

²⁶ Construction of embankment : ₹ 10.47 crore, Earthwork of spur : ₹ 2.17 crore, Boulder pitching on spur : ₹ 15.13 crore add 9 *per cent* (above estimated cost)

²⁷ Infructuous expenditure: ₹ 15.13 crore + ₹ 3.05 crore + ₹ 4.90 crore+ ₹ 6.73 crore = ₹ 29.81 crore

In reply, the department stated (February 2013) that contractor had been black listed for non-completion of agreed work in time for the work of the year 2011. Reply of the department was self explanatory that work could not be completed as per flood calendar.

Expenditure of ₹ 4.18 crore incurred on incomplete AE works became infructuous

- The Flood Control Division, Thakraha at Gopalganj executed an agreement (199 SBD/2010-11) for anti-erosion work between 0.3 km to 1.80 km of Patahara Chharaki for ₹ 7.00 crore. Audit observed that due date of completion of this work was 31 May 2011 but work was left incomplete (June 2011) and payment of ₹ 5.68 crore was made by the division (July 2011). Further observation revealed that quantity of incomplete work ranged from 0 to 58 per cent²⁸. Items of work like taking out disturbed boulder, boulder pitching under water and turfing were not executed and only 20 per cent porcupine was laid. Thus, earthwork and boulder pitching were not protected by laying porcupine. Resultantly executed boulder pitching work damaged in the flood during 2011 and division had to execute anti-erosion work before flood 2012 on same location at 0.6km to 1.80 km (21SBD/2011-12). Thus, an infructuous expenditure of ₹ 4.18 crore²⁹ was incurred on execution of incomplete anti-erosion work.

In reply, the department stated (February 2013) that only earthwork was done in the river side and turfing was not done as there were water pocket and houses in the countryside adjacent to the embankment, even house were on the top of the embankment, due to all of these bank shifting of embankment was not possible. Thus, Reply of the department was improper as boulder pitching under water, turfing and laying down of porcupine as well as taking out of disturbed boulder, could not be attributable to population adjacent to the embankment which caused damages to the executed work.

Excess payment of ₹ 6.25 crore made due to allowance of higher rate for dredging work

- **Excess payment**

The dredging work of removal of silt/shoal/earth from pilot channel at 48 Km of Champaran Embankment was executed (2SBD/2011-12) by Champaran Division, Motihari before flood 2011. According to the agreement, 375000 cubic meter earth was to be dredged at the rate of ₹ 210 per cubic meter. As per agreement/ proceeding of departmental tender committee of this work, dredging work was to be executed by a dredger and accordingly rate was derived.

Scrutiny of measurement book (MB no 5891) disclosed that the contractor had executed 215110 cubic meter of earthwork up to 20 May 2011 by Rajsthani tractor and division paid ₹ 4.51 crore (Ist A/C bill) at the agreement rates derived for excavation by dredger. As the rate of excavation of earth by Rajsthani tractor in schedule of rates was ₹ 75.90 per cubic metre, the division had made excess payment to the tune of ₹ 2.88 crore³⁰. Similarly, in Flood

²⁸ Earthwork : 44 per cent, Earthwork by mechanical means : 58 per cent, Taking out disturbed boulder : 0 per cent, Boulder pitching under water in apron : 0 per cent, Turfing : 0 per cent, Porcupine : 20 per cent

²⁹ Payment made on boulder pitching work (199SBD/2010-11): 11647.73 cubic metre @₹ 4226.90/cubic metre less 15 per cent of agreed cost

³⁰ ₹ 210 – ₹ 75.90 = ₹ 134.10 × 215110 m³ = ₹ 2.88 crore

Control Division, Thakraha at Gopalganj, the work of excavation of pilot channel in between 117.05 K.M. and 124.25 K.M. of Saran Embankment was to be executed through dredger before flood 2011. Accordingly, agreement was executed (3SBD/11-12 dated 15 May 2011) at the rate of ₹ 202 per cubic metre for excavation of 415300 cubic metre. Scrutiny of records (measurement book no. 1407) revealed that 267497.67 cubic metre of earthwork was executed by the Rajasthani tractor and the contractor was paid at agreement rates. Thus, excess payment amounting to ₹ 3.37 crore³¹ was made to the contractor.

In reply, the department stated (February 2013) that with respect to Champaran Division, Motihari, the agreement rate was for excavation work above water level by excavator and below water level by dredger which had been done by the contractor. Reply was not acceptable as analysis of rate schedule, the basis on which payment had been made to contractor, indicated that rates were allowed for entire work done by dredger and not by excavator. Besides, rate for earthwork executed by Rajasthani tractor was much lesser than that of dredger. However, with respect of work of FCD, Thakraha at Gopalganj, the department agreed with the audit observation and intimated that action against respective erring officials had been taken by the department.

● ***Loss to Government due to deployment of backhoe dredger without assessing its capacity***

Executive Engineer, Irrigation Mechanical Division, Birpur purchased (February 2010) a backhoe dredger for the river Kosi and other basin. Accordingly, the division made payment of ₹ 1.80 crore to the supplier firm upto May 2012.

Dredger costing ₹ 1.80 crore sunk as it was deployed against its operation manual

Scrutiny of operation and maintenance manual of this machine disclosed that the procured dredger was designed for deployment in shallow water and working with this dredger for any other purpose/activities would be at the sole discretion and risk of the owner. Further, the firm had also cautioned that as the silt quality in Kosi was of very fine sand, it might get solidified and stuck on the Lead Screw and bearings of the dredger and affect the operation of the dredger.

From the above facts, it was evident that according to design and specifications, the procured dredger was not suitable for Kosi river. This was further substantiated by the fact that when this machine was put to use before flood 2010, it sank in the river on 24 August 2010. After recovery, the dredger was again put to use (before flood 2011) and it again sank (1 July 2011) in the Kosi river. It was noticed in audit that dredger remained untraced as of May 2012. Hence, it was evident that department had not assessed the capacity and usage of dredger in Kosi river and put it into operation on total risk and cost of the department which resulted into loss of ₹ 1.80 crore to the Government.

On being pointed out, EE of the division stated (May 2012) that as per direction of higher officer, the dredger was put into operation against the norms of manufacturing company in public interest. Further, the department

³¹ ₹ 202 – ₹ 75.90 = ₹ 126.10 × 267497.67 m³ = ₹ 3.37 crore

replied (February 2013) that this dredger was very good for Kosi river and suitable for all types of soils/ sands/ roots/ weeds and any other purposes/ activities. Department further stated that after procurement of backhoe dredger, it worked successfully in 2010-11 and 2011-12 in the Kosi river. The reply of the department was incorrect as the dredger did not work successfully and sank during flood 2010 and 2011. Besides, deployment of dredger was not in conformity with the design and specification of the dredger as the operation of dredger should have been strictly adhered to within the parameters of operation and maintenance manual for this machine and due to wrong decision of department, the machine drowned and remained untraced till date (February 2013).

● ***Injudicious purchase of inspection vehicles***

High cost inspection vehicle purchased by division out of FMP fund and transferred to higher officer

Chief Engineer, WRD, Muzaffarpur sanctioned the estimate (May 2010) and made provision to purchase of 10 nos of inspection vehicles from the funds of Flood Management Programme (FMP) at an estimated cost of ₹ 65 lakh by Bagmati Division, Runnisaipur. During scrutiny in audit, it was noticed that on the telephonic direction of Under Secretary of the department, the division purchased (28 March 2012) one Toyota Fortuner FB 4/4 costing ₹ 21.45 lakh for official use of Principal Secretary of the department. Further, scrutiny revealed that around 80 to 90 *per cent* of FMP works were completed upto March 2012 in the division. Even though at the fag end of the financial year unnecessary/unwanted purchase was made by the division and the vehicle was transferred (June 2012) to the Principal Secretary of the department for his official use. Thus, the funds of FMP were injudiciously spent on purchase of inspection vehicle.

In reply, the department intimated (November 2012) that purchase of big and spacious vehicle had been made for attending the dignatories during the visit of Bihar and also to facilitate the Pr. Secretary to discuss strategy of management of flood with the departmental officers during the tour in work interest. However, the status of unavailability of vehicle for high dignatories of the Government had not been intimated to audit.

● ***Construction of new embankment***

Marginal growth in construction of embankment during 2007-12 inspite of availability of fund

Based on the scrutiny of recommendations of comprehensive plan made by GFCC for Bagmati, Mahananda, Burhi Gandak, Kamla Balan and Punpun rivers, audit observed that during the year 1991 to 2008 GFCC had indicated necessity for urgent construction of embankment on these rivers. However, it was further noticed that Ministry of Water Resources, Government of India principally accorded its consent to construct 1535 km embankment on Bagmati, Mahananda and Chandan rivers under FMP during Eleventh Five Year Plan period (2007-12) in order to protect 25.84 lakh hectares of flood prone area in the State.

Status of flood prone area, target and achievement for construction of embankment, percentage of protected areas of flood prone region in the State are indicated in **Table No.5.**

Table no. 5
Status of embankment, flood prone area and protected areas

Item	Status as of March 2007	Target to increase as proposed in eleventh five year plan (2007-12)	Achievement as of March 2012	Status as of March 2012
Total length of embankment (in km)	3430.00	1535.00	61.47	3491.47
Flood prone area (in lakh hectare)	68.800	25.84	4.839	63.961

(Source: flood report of 2008 and data furnished by the department)

From **Table no. 5**, it would be clear that the department could construct only 61.47 km of new embankment against the target of 1535 km during 2007-12. Consequently, only 4.839 lakh hectare flood prone area could be protected against floods leaving a shortfall of 21 lakh hectare as of March 2012. Hence, total length of embankment in the State increased to 3491.47 km showing a marginal growth of four *per cent* during 2007-12. Consequently, areas that were under flood threat before 2007-08, remained under risk of flood as of 2011-12.

In reply, the department attributed (November 2012) non-achievement of target for construction of new embankment to not obtaining mandatory techno-economic clearance and investment from GoI. He further stated that Mahanada Flood Management Scheme-Phase II in the area of 199.95 km of embankments was submitted to GFCC, a GoI body in April 2011, which was yet to be cleared by GoI (November 2012). Reply of the department was not acceptable as techno-economic clearance for construction of 1195.87 km, had already been given by GoI in November 2007 but no construction work had been carried out in this regard till date. Besides, for Bagmati Flood Management Project Phase-II, clearance was accorded by GoI (June 2011) for 71 km of embankments but due to non-acquisition of land by Special Land Acquisition Officers (SLAO) of the department, the scheme suffered despite that the funds of ₹ 232.60 crore were made available to SLAO as of March 2012.

2.1.9 Execution of Zamindari bandh

With a view to create and conserve water resources facilities for development of agriculture, repair and maintenance of zamindari bandh³² under the Revenue and Land Reforms Department was transferred (February 2006) to WRD. It was envisaged that the WRD would execute the work of repair and maintenance of Zamindari Bandh to provide relief to flood and draught prone areas. During scrutiny of records at WRD, it was noticed that 372 number of Zamindari Bandh of total length of 2628.36 kms were sanctioned by the department in four phases³³ during 2007-12. Further, only six out of 16 test checked divisions were executing the works of Zamindari bandh. Scrutiny

³² *During pre-independence period the then Zamindars of locality construct bandhs to protect villages residing nearby banks of river.*

³³ *Phase I: 186 nos., 1183.12Km; Phase II: 102 nos., 1160.87Km; Phase III; 70 nos., 263.27Km and Phase IV; 14 nos., 74.10Km*

revealed cases of unfruitful expenditure due to closure, postponement/abandonment of works, substandard execution of works, excess payment due to doubtful measurement and extra payment as discussed in succeeding paragraphs:

2.1.9.1 Unfruitful expenditure on incomplete, closed/postponed work of zamindari bandh

Unfruitful expenditure of ₹ 20.21 crore incurred on 10 nos. of incomplete Zamindari bandh, though started during 2008-10

Scrutiny of agreement register and progress reports of Water Ways Division, Biharsharif (eight works) and Jehanabad (two works), it was noticed that 10 works of Zamindari Bandh, started between March 2008 and July 2010, were either closed, postponed, or left incomplete as of August 2012 after expenditure of ₹ 20.21 crore (*Appendix-2.1.5*). It was observed that the work of Zamindari Bandh included earth work and construction of outlets to regulate water for flood protection and irrigation. It was further observed that the progress of earthwork among these incomplete works ranged between 45 and 100 *per cent* and the required number of outlets were not constructed in these bandhs except one work though they are necessary to protect the bandh from flood hits as well as to regulate the water flow for irrigation purposes. However, the divisional office did not initiate any penal action against defaulting contractors.

Hence, the envisaged purposes for which ₹ 20.21 crore was spent was not fulfilled and entire expenditure remained unfruitful.

In reply, the department stated (February 2013) that action had been taken against the defaulting contractor for non-completion of two works. It was further stated that some of outlets could not be constructed mainly due to public objection. Reply of the department shows that effective action was not taken by the department to convince the people for whose benefit works were undertaken.

2.1.9.2 Substandard construction of Zamindari Bandh

Expenditure of ₹ 72.94 crore incurred without adhering stipulated technical specification resulted into substandard execution of work

As per Indian Standard (IS) Guidelines for planning and design of river embankment (Levees)-(First revised I20:2000), the laid down criteria for construction of embankment is (i) top width of the embankment should be of 5.0 m. (ii) for slope protection works, the side slopes and 0.6 m wide in top from the edges of the embankments should be turfed with grass sods. Besides the government also stipulated (December 2008) that provision of compaction should be ensured while executing the work of Zamindari Bandh.

During scrutiny of 43 works of zamindari bandh (*Appendix-2.1.6*) of test-checked divisions, audit observed that the top width of the all the test-checked zamindari bandh was taken up for only 3.66 m. The protection of slopes by turfing with grass sods was executed in only four works³⁴. In remaining 39 works, protection of slopes by turfing with grass sods was not carried out. Besides, the layer wise compaction was not executed in 30 zamindari bandh.

Hence, it was evident that in raising and strengthening work of zamindari bandh, only mound of earth was placed along the riverside without carrying

³⁴ *Kulti to Gobindpur (100 per cent), Raghauli to Sandullahpur & Singhia (65 per cent), Pali (25% turfing), Ganga Prasad Zamindari bandh (8 per cent)*

out proper compaction ensuring protection of slopes by turfing with grass sods to avoid erosion which indicated that works were carried out in disregard of stipulated specification. As a result, the expenditure incurred on 43 works amounting to ₹ 72.94 crore was made on sub-standard execution of restoration of zamindari bandh during 2007-12.

In reply, the department admitted (February 2013) that no specific guidelines for construction of zamindari bandh was formulated by the department and stated that steps were being taken to formulate criteria with regard to work of zamindari bandh.

2.1.9.3 Excess payment due to doubtful measurement

Payment of earth work made on the stretches, though already excluded in the estimate of work

The work for raising and strengthening of Zamindari bandh (left and right) of Kumbhari River in Nalanda district was awarded (June 2008) to M/s JKM Infra Projects Pvt. Ltd. During scrutiny, it was found that of the total length of right zamindari bandh of 34.80 km from Nouwama to Jehanabigha, anti-erosion and raising and strengthening work had been executed before flood 2007 between 24.70 and 29.80 km by the division. Hence, this portion was not included in the calculation chart of quantity of earthwork at right zamindari bandh. However, scrutiny of MB disclosed that quantity of 144630 cubic metre earth work was shown as executed between 24.75 km and 29.34 km and payment of ₹ 54.54 lakh was made (May 2009) for this quantity vide 4th running account bill.

From the above, it was quite evident that the division made payment of earthwork for 24.75 to 29.34 km stretch of right zamindari bandh though the stretches were excluded from the estimate. Thus, an excess payment of ₹ 54.54 lakh was made to the contractor.

In reply, the department stated (February 2013) that the final measurement of the work was yet to be done and discrepancies, if found, would be rectified. Reply of the department was not satisfactory as work was completed by the time of audit (August 2012). However, even after lapse of six months the final decision had not been taken by the department as of February 2013.

2.1.10 Manpower management

Acute shortage in the key cutting edge manpower position of the department

The Assistant Engineer and Junior Engineer cadre in flood management plays a vital role in framing departmental plan as well as implementation, as responsibility of all the field/site works from survey and investigation stage to supervision of ongoing works lies with them. The overall sanctioned strength and men-in-position of Assistant Engineers (AE), Junior Engineer (JE) with Bandh Khalasi/Chaukidar and Work Sarkar in the test checked 16 divisions are shown in **Table No 6**.

Table no. 6
Sanction strength and men-in-position of test-checked divisions
as on 31 March 2012

Sl.No	Name of the post	Sanctioned Strength	Men-in-position	Vacancy (percentage)
1.	Assistant Engineers	89	65	24 (27)
2.	Junior Engineer	278	170	108 (39)
3.	Bandh Khalasi/ Chaukidar	79	13	66(84)
4.	Work Sarkar	21	04	17(81)

(Source: Furnished by test-checked divisions)

It was evident from the table that the vacancy position of AE and JE was 27 and 39 *per cent* respectively. Further, shortages in the post of bandh khalasi/choukidar and work sarkar were 84 and 81 *per cent* respectively. However, except in two divisions³⁵, no post of work sarkar was sanctioned in any of the test checked 14 divisions. Thus, there were shortages in the key cutting-edge manpower positions of the department.

The department agreed (February 2013) with audit observations that there was an acute shortage of manpower in different cadre of post and these vacancies require to be filled up.

2.1.11 Impact analysis

In absence of long term plan, despite spending ₹ 3362.27 crore on flood protection work, government had to incur ₹ 1799.15 crore on flood relief

During performance audit it was noticed that the department failed to execute long term plan as well as in increasing the length of embankment as envisaged in Eleventh Five Year Plan. Cases of loss/ damages caused by flood and heavy expenditure on flood relief noticed in audit during 2007-12 are indicated in **Table no. 7.**

Table no. 7
Status of damages caused by flood and expenditure incurred on flood relief in the State

Year	No. of districts affected	No. of persons affected (In lakh)	No. of animals affected (in lakh)	Value of damaged crops (₹ in crore)	Value of damaged house (₹ in crore)	No. of lives lost (in number)	Expenditure incurred on flood relief (₹ in crore)
2007-08	22	244.42	27.13	768.38	831.45	1287	756.53
2008-09	18	50.93	10.10	167.30	314.93	626	792.83
2009-10	16	22.03	1.35	21.83	5.28	125	152.92
2010-11	9	7.16	3.57	3.12	7.05	32	34.09
2011-12	25	71.43	6.63	102.96	69.07	249	62.78
Total		395.97	48.78	1063.59	1227.78	2319	1799.15

(Source: Disaster Management Department)

From **Table no.7**, it would be clear that during 2007-12, total value of losses was for ₹ 2291.37 crore (crops: ₹ 1063.59 crore and houses: ₹ 1227.78 crore). Besides, number of live lost during the period was 2319 and extent of flood affected districts increased from 22 of 2007-08 to 25 in 2011-12. Despite spending ₹ 3362.27 crore on flood protection works (as indicated in **Table no.1**) State also incurred ₹ 1799.15 crore on flood relief during 2007-12.

The department could not construct dams with flood cushion with a view to reducing deposition of silt in the river, as a long-term measure for combating threats of flood. Thus, due to non-construction of dams, silt continued to deposit in riverbed which disturb the central flow of river and department was compelled to execute flood protection/anti-erosion works of ₹ 3362.27 crore to keep safe the embankments during 2007-12.

³⁵

Head Works Division, Birpur and Eastern Embankment Division, Birpur

2.1.12 Monitoring and evaluation

The monitoring circle headed by a Superintending Engineer under Engineer-in-Chief was responsible for co-ordination and monitoring of schemes with the assistance of four Executive Engineers at headquarters level. In addition, GFCC was also entrusted to monitor implementation of different schemes.

Though the department had an established mechanism for monitoring, however, delayed sanction of work, undue award of work to contractor, execution of work without model test, delay in execution of work, avoidable expenditure, infructuous expenditure, excess payment, unfruitful expenditure, less execution of zamindari bandh could not be avoided indicating lack of monitoring control.

The department stated (February 2013) that from headquarter to field level, monitoring work was being done to the extent possible with available manpower. Department further stated that introduction of Flood Management Information System (FMIS) would help in formulation of its scheme. However, no explanation was given as to how the activities of monitoring and evaluation of the department could be improved with FMIS when department was suffering from acute manpower shortage.

2.1.13 Conclusion

Despite increase in plan allocations after 2008, the department did not execute long term plans, ignored the enacting of Flood Plain Zoning Bill in State and relied solely on short term measures. The financial management of the department was not effective, as the Government could not utilise 11 to 44 *per cent* of available fund due to delayed/non-sanctioning of schemes, delay in land acquisition and non-passing of bills by treasury during 2007-12. The implementation of short term measures was also not free from deficiencies like irregular award of contract, non-adherence to flood calendar, infructuous expenditure, excess payment, loss to Government etc. There was significant shortage in strength of working cadre like Assistant Engineer and Junior Engineer as well as Bandh Choukidar though they were essential for flood control measures. Besides, the department could construct only 61.47 km embankment against the target of 1535 km fixed in 11th plan. Further, the State had to suffer substantial losses due to flood during 2007-12 though a large amount on flood relief had been spent during the period. Hence, the reliance on ineffective short term measures by department did not provide solution to minimize the recurring flood as well as its devastations in the state.

2.1.14 Recommendations

The department may examine and consider the followings recommendations:

- The rational method of flood management in Bihar should include a judicious mix of structural and non-structural measures;
- As regards structural measures it should have an appropriate combination of short-term measures like embankments and long-term sustainable measures like reservoirs with adequate provision of flood cushion and Natural detention basins;

- Under non-structural measures, enactment of flood plains zoning bill, evolving of flood forecasting and warning system, disaster preparedness and response planning, etc should be implemented;
- Execution of works should be completed within the working season prescribed in flood calendar;
- The construction of pilot channel should be ensured with prescribed periodical dredging for intended results;
- The working staff strength like AEs/JEs etc. should be optimally filled up at the earliest.

ROAD CONSTRUCTION DEPARTMENT

2.2 Major District Roads in Bihar

Executive Summary

Introduction

The Major District Roads (MDRs) are infrastructural link enabling the easy communication of people with the areas of production and market within a district and connecting it with the major towns, villages, areas of cultural, historical, tourist interest and with national and state highways passing through the district. The performance audit of MDRs revealed deficiencies from planning to implementation stage.

(Paragraph 2.2.1)

Planning

Road Construction Department had not planned construction of new MDRs according to the need of increased traffic load and population in coming years and mainly executed widening and strengthening works and Improvement of Riding Quality Programme (IRQP) works on MDRs. The department had also not formulated a maintenance policy for the constructed MDRs.

(Paragraph 2.2.6)

Financial Management

During 2007-12, the department had utilised 92 *per cent* of its plan allotment and surrendered the remaining eight per cent. However, in test checked 12 divisions, expenditure of ₹ 1328.47 crore out of allotment of ₹ 1468.86 crore was incurred and ₹ 140.25 crore (9.5 *per cent*) was surrendered.

(Paragraph 2.2.7)

Programme Implementation

The MDRs were technically approved for up-gradation without conducting any traffic census in 39 works of seven divisions and traffic census was conducted for only three days in 19 works of three divisions as against for seven days required under IRC:37-2001

(Paragraph 2.2.8)

(a) Contract management

Contract management of the department was deficient as cases of less publicity of tender, allotment of work to ineligible contractors and allotment of work without submission of work programme were noticed in violation of codal provision in test checked divisions.

(Paragraph 2.2.8.2)

(b) Execution of work

The execution of MDRs revealed instances of deficiencies like incomplete works, excess payments, execution of work without technical sanction and non recovery of penalty/advances etc in test checked divisions. It was further observed that the execution was delayed in 332 out of 591 agreements of MDRs during 2007-12, of which 16 agreements were rescinded and 158 works were still in progress.

(Paragraph 2.2.8.3)

Manpower management

There were vacancies to the extent of 26 and 47 *per cent* in the post of Assistant Engineer (AEs) and Junior Engineer (JEs) respectively, who were directly responsible for proper execution of work. Further, at the top level there were vacancies in the posts of CE/SE too. This was indicative of deficient man power management in the department.

(Paragraph 2.2.9.1)

Conclusion

Though the Road Construction Department had comparatively improved its performance from Tenth five year plan period, there were still shortcomings in various areas viz. there was no defined criteria for selection of MDRs as well as planning to meet the challenges of increasing traffic. There were instances of non-utilisation of available funds and surrenders. The contract management was defective as the works were awarded to debarred and ineligible contractors. The other deficiencies such as irregularities in advances, deficient manpower management and shortcomings in quality control mechanism were also noticed.

(Paragraph 2.2.11)

Recommendation

The department should evolve a reliable and transparent selection criteria before designating any road as 'major district road'. While the planning for upgradation should be need based depending upon the increase in the traffic volume, it should be carried out in accordance with the specifications as prescribed by Indian Road Congress/Ministry of Road, Transport and Highways with full transparency and adherence to department code. The monitoring of scheme should be strengthened at field level and quality control of works should be duly ensured.

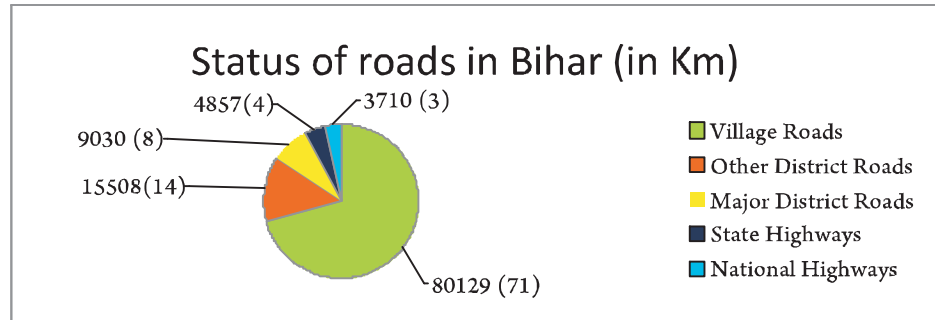
(Paragraph 2.2.12)

2.2.1 Introduction

The development of roads is a basic component of the infrastructural development in a State. The industrialisation and marketing of agricultural produce cannot be imagined without developed roads. The Indian road network consisting of National Highways (NH), State Highways (SH), Major District Roads (MDR), Other District Roads (ODR) and Rural Roads is one of the largest in the world which carries 65 *per cent* of the country's freight and 80 *per cent* of its passenger traffic. MDRs are infrastructural link enabling the easy communication of people with the areas of production and market within a district and connecting it with the major towns, villages, areas of cultural, historical, tourist interest and with national and state highways passing through the district. The SHs and MDRs, which together account for about 13 *per cent* of the total road length of the country, carry 40 *per cent* of the total road traffic. In Bihar, as on 31st March 2012, the total road length was 113233.98 km of which MDR was 9030.10 km (eight *per cent*) while other district roads were 15508 km (14 *per cent*).

The position of all roads in Bihar is given in the chart below:

Chart-I

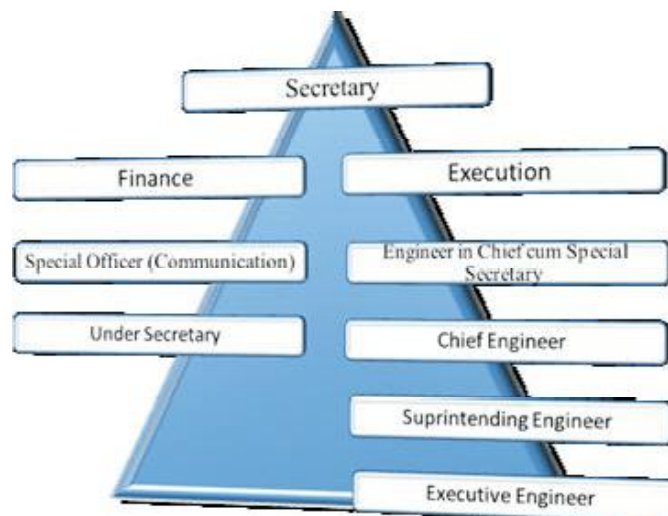


The maintenance and up-gradation of MDRs was within the jurisdiction of Road Construction Department (RCD) of the State.

2.2.2 Organisational set-up

Secretary, RCD, Government of Bihar is the overall in-charge of the department assisted by Engineer in Chief (EIC) cum Special Secretary, eight Chief Engineers (CEs), one Director (Purchase) and one Special Officer (Communication) who is responsible to release budget and exercise financial control over budget allotted to the divisions for execution of the works. The works of MDRs are executed through 39 divisions of 38 districts headed by the Executive Engineers (EEs) under the supervision of nine Superintending Engineers (SEs) in respective circles.

Chart-II



2.2.3 Audit Objectives

The audit objectives were intended to assess whether:

- the planning process for the construction of district roads was need based and efficient;
- the financial management was efficient and effective;
- the implementation of MDR construction programmes was efficient, effective and economic; and
- the organisational control and quality control to ensure the quality of roads was in place and effective.

2.2.4 Audit Criteria

Following were the sources of audit criteria:

- Bihar Public Works Account (BPWA) Code;
- Bihar Financial Rules (BFRs);
- Bihar Public Works Department (BPWD) Code;
- Specification of Indian Roads Congress (IRC), Ministry of Road Transport and Highways (MORTH);
- Departmental instructions, circulars issued from time to time; and
- Eleventh five year plan.

2.2.5 Audit scope and methodology

The performance audit of MDRs for the period 2007-12 was conducted between May and August 2012. Records of the RCD at headquarters and 12 divisions¹ out of 39 divisions were test-checked. The selection of 10 divisions was done by adopting the Stratified Random Sampling Method and two divisions based on high volume of execution. An entry conference was held in April 2011 with the Secretary, RCD to discuss the criteria for the performance audit. The departmental inputs, views and concerns were appropriately considered while conducting this performance audit. Questionnaires and memos were issued and their replies were taken into account before finalising the audit report. Thereafter, on completion of field visits, an exit conference was held in January 2013 with the Secretary, RCD, wherein the audit findings were discussed in detail. The reasons and justification furnished by the department were kept in view while finalising the performance audit. The reply of department was received in January 2013 and suitably incorporated in respective paras.

¹ (i) Aurangabad (ii) Banka (iii) Bettiah (iv) Bhagalpur (v) Chapra (vi) Darbhanga (vii) Lakhisarai (viii) Nawada (ix) New Capital, Patna (x) Patna West (xi) Purnea (xii) Siwan.

Audit findings:

The deficiencies noticed during the performance audit of MDRs are discussed below:

2.2.6 Planning

The plan of road construction starts with a detailed project report comprising necessity, developmental potential, area, road features, source of construction materials, equipments and others, Schedule of Rates and quality control. For the design of pavements, IRC and MORTH guidelines are used for the traffic census and CBR tests. Planning is also required for maintenance, upkeep and development of the road network. Proper road maintenance contributes to reliable transport at reduced cost, as there is a direct link between road condition and vehicle operating costs (VOC).

In Bihar, RCD had not planned construction of new MDRs reflecting the need of traffic in coming years and mainly executed widening and strengthening works and Improvement of Riding Quality Programme (IRQP) works on existing MDRs. The department had also not formulated a maintenance policy for the constructed MDRs so far (January 2013). A comparative analysis with national data revealed that Bihar was far behind from the national average in terms of its capacity to cater to the needs of its population as evident in the **Table -1** given below.

Table -1
Comparative analysis with national data

Sl. No.	Items	National	State
1	Population (in lakh)	12202	1040
2	Road Length per lakh population (in km)	347.05	108.06
3	Area (Sq km)	3287263	98940
4	MDR (in km)	467763	9030.10

(Source- Annual report of department)

While Bihar was lagging behind in road length per lakh population, the registration of new vehicles recorded a phenomenal increase of around five fold in Bihar, from around 0.80 lakh in 2005-06 to 3.53 lakh in 2011-12 (up to January 2012). Further, MDR's percentage in respect of the total area of the country was 14 *per cent* while it was only nine *per cent* in Bihar. It was, however, observed that RCD had not prepared a need based plan for up-gradation of MDRs to accommodate the ever increasing traffic load.

In reply, the department refuted the audit observation by stating that this kind of population based analysis was fallacious and the State road density on basis of unit area was at par with that for the nation.

The reply was not in conformity with the facts as the increasing population and vehicles should be the main consideration in formulation of a need based plan but it remained unnoticed in absence of a plan formulation.

The other deficiencies noticed in connection with planning are discussed in succeeding paragraphs:

2.2.6.1 Identification of MDRs

The selection of roads under MDRs for the purpose of up-gradation should be done by using reliable and well defined parameters.

Scrutiny of records disclosed that the department had no defined criteria for identification of roads to be taken under MDRs.

On being asked, the Engineer-in-Chief had replied (December 2012) that preparation of criteria/ guidelines for identification of roads to be taken under MDRs was under process. Thus, the department did not have any transparent parameters for inclusion of a road in MDR.

Department had no defined criteria for identification of roads to be taken under MDRs

However, the department while accepting that there was no approved objective criteria for selection of roads as MDRs stated that they had reliable parameters for the same. The facts remains that department has no approved parameters/criteria for identification of MDRs.

2.2.6.2 Deficient planning

Target of Eleventh five year Plan was not achieved. 10 years Perspective Plan was not prepared

The department had 8158.07 km of MDR as on 1st April 2007, out of which 6566.06 km was of single lane (80 *per cent*) (i.e. 3.05 to 3.50 meter wide). In the Eleventh five year plan (2007-12), 7714 km of MDRs was targeted to be upgraded, which included the widening and strengthening of single lane MDRs as well as strengthening of other MDRs².

Scrutiny revealed that the department could upgrade only 5420.97 km (70 *per cent*) of the targeted length of MDRs in Eleventh plan period. Thus there was short achievement of target by 2293.03 km (30 *per cent*) during the plan period.

It was also observed that 4774.47 km of MDRs were still required to be upgraded into intermediate lanes from the 9030.10 km length of MDRs with the department as on 31st March 2012.

Further, it was observed that the department had not prepared any perspective plan for 10 years so far, despite decision taken in this regard in February 2009.

In reply, the department stated that the Eleventh five year plan period was the period of transition for the department in the context of resource mobilisation as well as planning. This was evident from the fact that the achievements of Eleventh five year plan were nine times higher from Tenth five year plan. It was further assured that the balance MDRs would be upgraded in a phased manner on need based priority and according to availability of funds. However, the fact remains that the department could not upgrade the targeted lengths of MDRs of Eleventh five year plan and also failed to prepare the perspective plan for ten years.

2.2.6.3 Non implementation of proposed strategies

Prior to the beginning of Eleventh five year plan, Government had prepared (2006) strategies to achieve the targets of up-gradation of MDRs. Scrutiny

² Intermediate lane, double lane and four lane MDRs.

disclosed that the department did not follow the suggested strategies as discussed below:

- The State Government was required to set up a flexible autonomous body as Project Development/Management Unit (PMU) having comprehensive delegated powers and regulations such as power to hire consultants/experts for preparing DPRs for construction and monitoring of road works and also to facilitate quick decision making. It was observed that such a body for MDR works had not been established.

In reply, the department stated (January 2013) that the said flexible autonomous body authorized for project development/management and delegated powers as outlined in the audit comment had been set up in the form of Bihar State Road Development Corporation (BSRDC) (Established in April 2009). The reply was not acceptable as the MDRs works were being carried out by the concerned divisions and not by the BSRDC.

Maintenance policy was not prepared.

- A comprehensive policy for proper maintenance of all roads in the State was proposed to be framed to replace the current practice of cyclic phased maintenance over a period of four years with maintenance of entire road length in one go. However, the department was yet to finalise such policy for maintenance of MDRs.

In reply the department stated that the said Road Maintenance Policy had been framed and was in the process of formal approval by the Government.

- In order to finance the up-gradation programmes, the State Government proposed to establish a Non Lapsable Road Fund from the allocations of plan/non plan funds and impose road cess. Scrutiny disclosed that department had not initiated any proposal in that respect and as such had not created any such fund.

In reply, the department stated that the idea of establishing of Non Lapsable Road Fund was subsequently examined from point of view of funding source and it was found that the envisaged funding through application of additional cess on motor fuel would not be feasible in a welfare State like Bihar. Also, such a mechanism would not be in consonance with the prevailing accounting practice of Government funds.

Thus, the planned strategies of Government broadly remained unimplemented during 2007-12.

2.2.7 Financial Management

The department had been receiving funds from the State Plan, National Bank for Agriculture and Rural Development (NABARD), Central Road Fund (CRF), Roads of Economic Importance (EI), Inter-State Connectivity (ISC), Bihar Vyapar Vikas Kosh (BVVK, Road), Scheduled Caste Component (SC component) and Border Area Development Project (BADP) along with grants-in-aid from the Twelfth Finance Commission. During 2007-12, ₹ 7646.17 crore was allotted for MDRs out of the total allotment of ₹ 17337.78 crore of the department. The allotments *vis-à-vis* expenditure during 2007-12 are as under:

Table no. 2
Allotment and Expenditure of MDRs

(₹ in crore)

Year	Allotment			Expenditure			Surrender (Percentage of surrender)		
	Plan	Non Plan	Total	Plan	Non Plan	Total	Plan	Non Plan	Total
2007-08	945.93	163.82	1109.75	800.23	132.01	932.24	145.70 (15)	31.81 (08)	177.51 (16)
2008-09	1481.31	128.58	1609.89	1228.30	104.88	1333.18	253.01 (17)	23.70 (18)	276.71 (17)
2009-10	1200.05	273.99	1474.04	1160.43	268.39	1428.82	39.62 (03)	5.60 (02)	45.22 (03)
2010-11	1577.20	210.14	1787.34	1497.41	198.54	1695.95	79.79 (15)	11.60 (5.5)	91.39 (05)
2011-12	1324.21	340.94	1665.15	1306.60	320.93	1627.53	17.61 (1.1)	20.01 (06)	37.62 (02)
Grand Total	6528.70	1117.47	7646.17	5992.97	1024.75	7017.72	535.73 (8.2)	92.72 (08)	628.45 (08)

(Source: RCD, Bihar)

Department spent 92 per cent of allotment As evident from the table above, the department had utilised 92 per cent of its plan allotment and surrendered the remaining eight per cent during 2007-12. However, in test checked 12 divisions, expenditure of ₹ 1328.47 crore out of allotment of ₹ 1468.86 crore was incurred (**Appendix-2.2.1**) and ₹ 140.25 crore (9.5 per cent) was surrendered. Further, scrutiny revealed following shortcomings in financial management:

Transfer of funds to the divisions to avoid lapse of grant of ₹ 72.25 crore during 2007-12

- Out of the total expenditure of ₹ 7017.72 crore during 2007-12, department had transferred ₹ 389.16 crore³ to Bihar Rajya Pul Nirman Nigam Limited (BRPNNL), Patna for MDR works and the utilisation certificates (UCs) from BRPNNL were not received till date of audit.
- The department transferred funds of non plan amounting to ₹ 72.25 crore to the divisions in the month of March to avoid lapse of grant in respective years during 2007-12. The transfer of fund by the department was in contravention of the provisions of Rule 177 of Bihar Treasury Code.
- In addition to this, an amount of ₹ 59.00 crore was given to BRPNNL during 2004-06 for construction of flyover on Baily Road near Hartali More and R Block, Yarpur, Patna. However, BRPNNL had neither constructed these flyovers nor submitted the utilisation of this amount till date (January 2013).

In reply, the department assured to obtain UCs regularly and stated that the amount given to BRPNNL for construction of flyover on Baily Road was utilized against construction of other sanctioned Railway Over Bridges (ROBs) under plan head for which funds would have to be made available anyway.

³ Plan-₹ 307.67 crore + Non plan-₹ 81.49crore= ₹ 389.16 crore

2.2.7.1 Revenue not deposited in the concern Head

As per BPWA code (Rule 414) and accounts code volume III 73 (E), note -2 of Public works deposit the head “miscellaneous deposit” should also accommodate until clearance, all item of receipts, the classification of which cannot be determined at once or which represents error in accounting awaiting adjustment.

Miscellaneous deposits amounting to ₹ 36.30 crore were not deposited into the concerned revenue heads.

Scrutiny of records of 12 test-checked divisions revealed that the deduction in respect of royalty and penalty from the contractors amounting to ₹ 36.30 crore⁴ during 2007-12 was kept in miscellaneous deposit (8443 part V) instead of their concerned revenue heads (0853, 1054). The Accountant General (A&E) Bihar, Patna had also suggested (March 2009) to the Secretary, RCD to deposit the revenue realised from fines into concerned revenue head.

In reply the department stated that due to non receipt of ‘M’⁵ & ‘N’⁶ Form/ ‘M’ & ‘N’ verification report, the amount was kept in miscellaneous deposit. However, the concerned divisions had been instructed to deposit the amount under proper head.

2.2.8 Programme Implementation

The process of work on MDRs starts with proper survey of traffic census conducted for at least seven days, drawing and design of the road based on soil test results as per California Bearing Ratio (CBR) followed by preparation of estimates on the basis of traffic census and drawing and design of the road. Thereafter contract was to be executed and finalised as per the provisions of Bihar Financial Rules and conditions of contracts. Further, execution of roads should be according to specifications and the payment of bills should be in line with codal provisions.

The department had executed 591 agreements worth ₹ 3277.00 crore during 2007-12, Out of these, 172 agreements worth ₹ 1003.67 crore were scrutinised in course of performance audit of MDRs. The deficiencies noticed in programme implementation are discussed in the succeeding paragraphs.

2.2.8.1 Inadequate traffic census and CBR Tests

Indian Road Congress (IRC:37-2001) envisages that to obtain a realistic estimate of design traffic, due consideration should be given to the existing or anticipated traffic based on possible changes in the road network and land use of the area served, the probable growth of traffic and design life. Estimate of the initial daily average traffic flow for any road should normally be based on at least seven days and 24 hours classified traffic counts.

⁴ (i) Aurangabad - ₹ 1.85 crore (ii) Banka - ₹ 0.55 crore (iii) Bettiah - ₹ 2.08 crore (iv) Bhagalpur - ₹ 8.53 crore (v) Chapra - ₹ 2.88 crore (vi) Darbhanga - ₹ 2.84 crore (vii) Lakhisarai - ₹ 0.63 crore (viii) Nawada - ₹ 2.41 crore (ix) New Capital, Patna - ₹ 2.32 crore (x) Patna West - ₹ 5.82 crore (xi) Purnia - ₹ 2.67 crore (xii) Siwan - ₹ 3.72 crore

⁵ ‘M’- An affidavit submitted by contractor regarding lift of minerals to the works division.

⁶ ‘N’- An affidavit submitted by leaseholder of Mines to the contractor regarding sale of minerals.

Traffic census was done for only three days despite prescribed period of seven days.

Scrutiny revealed that the MDRs were technically approved for up-gradation without conducting any traffic census in 39 works of seven divisions (*Appendix-2.2.2*) and traffic census was conducted for only three days in 19 works of three divisions (*Appendix-2.2.3*). It was further observed in one case⁷ that the survey data pertaining to a road was also used for preparing estimate of other road.

In reply the department stated that seven days traffic census was not mandatory according to the Indian Road Congress guidelines; however, the field units and the authorities empowered to grant technical sanction had been instructed to conform to the IRC guidelines of seven days traffic count to calculate Average Daily Traffic.

The reply was not convincing with facts as to obtain realistic estimate of design traffic, due consideration should be given to existing traffic (IRC para 3.3.1.3).

Further, Indian Road Congress (IRC: 37-2001) also envisages that the design should be based on the California Bearing Ratio⁸ (CBR) value of the weakest soil type proposed to be used for sub-grade construction or encountered extensively at sub-grade level over a given section of the road, as revealed by the soil surveys. Pavement thickness on new roads may be modified at intervals as dictated by the soil changes. Scrutiny revealed that 37 road works were taken up without carrying out the CBR test in nine test checked divisions (*Appendix-2.2.4*).

In reply the department stated (January 2013) that the CBR value for a particular stretch of road was a measure of the quality of earth along the alignment and its value did not change with the passage of time. It was a permanent characteristic of soil which was normally known to the field units on basis of earlier recorded tests. The reply was not in consonance with facts as no such earlier record was available in the divisions.

Thus, the estimates prepared for up-gradation of MDRs were based on inadequate traffic census data and unrealistic CBR value.

2.2.8.2 Contract management

Department executed the construction of MDRs by engaging contractors through open competitive bidding system. In this context, the provisions of Bihar Public Works Department Code, clauses of Standard Bidding Documents (SBD) and different circulars of Government were applicable for selection of suitable contractor for executing the works economically and efficiently. Government prescribed competency to accept tender at every level. Scrutiny of tender documents in test-checked divisions revealed violation of prescribed rules and clauses in award of contract as discussed in succeeding paragraphs.

⁷ *Jokihat Dalmalpur Gerua Road, Purnea*

⁸ *It is the ratio of force per unit area required to penetrate a soil mass with standard circular piston at the rate of 1.25 mm/min to that required for the corresponding penetration a standard material.*

● **Inadequate period provided for sale of Bill of Quantity (BOQ)**

Less time given for sale of BOQ.

The department had instructed (July 2000) all CEs/ SEs/EEs to ensure the availability of BOQ⁹ in the division/circle/district control room seven days prior to the date of sale so that seven days period might be available for sale of BOQ. Further, in case of un-availability of the same, the date of receipt of tenders was to be extended.

Scrutiny disclosed that only one to five days period was allowed in 95 cases of sale of BOQ in test checked divisions as shown in **Table no. 3** below:

Table no. 3
Period taken in Sale of BOQ

Sl. No.	Name of division	No. of road works test checked	No. of road works in which less period given for sale of BOQ	No. of road works of single tender	Agreement value of single tender (₹ in lakh)	No. of days given
1	Aurangabad	12	4	2	1859.97	3-5
2	Banka	14	1	1	967.62	5
3	Bettiah	17	15	4	2298.57	1
4	Bhagalpur	13	8	6	5073.88	1
5	Chapra	12	1	-	-	3
6	Darbhanga	20	13	6	4232.55	1-3
7	New Capital	18	14	-	-	3-5
8	Patna west	14	4	3	1970.53	4-5
9	Purnea	20	18	7	3188.92	1
10	Siwan	16	8	-	-	1-5
11	Nawadah	11	7	4	1029.59	2-5
12	Lakhisari	5	2	2	484.47	2-5
	TOTAL	172	95	35	21106.10	

As evident from the table above, 15 out of 17, eight out of 13 and 18 out of 20 test-checked road works in Bettiah, Bhagalpur and Purnea divisions respectively, only one day period was given for sale of BOQ. Even in New Capital Division Patna, in 14 out 18 test-checked road works, 3-5 days period was given for sale of BOQ. Out of test-checked 172 road works, 35 road works valuing ₹ 211.06 crore were awarded on a single tender basis which goes against the spirit of competitive bidding. In reply, the department stated that the sale of BOQ for relatively lesser periods, in no way hindered the competitive bid process since the economics of the bid depended upon publicity and more participation. It was further stated that since the bids were advertised through e-tendering process, the problem of sale of BOQ for lesser period had been eliminated.

The reply was contrary to the provisions of Bihar Financial Rules (Rule 131H) and the instructions of department.

● **Work awarded to ineligible contractors**

The provisions of clause 4.8 of SBD provided that even though the bidders meet the qualifying criteria, they are liable to be disqualified if they have made

⁹ It is a document used in tendering in the construction industry in which materials parts and labour (and their costs) are itemized. It also details the terms and conditions of the construction or repair contract and itemises all work to enable a contractor to price the work for which he or she is bidding.

misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or have record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc; and/or participated in the previous bidding for the same work and had quoted unreasonably high bid prices and could not furnish rational justification to the employer, and who were debarred, could not participate in another tender till the completion of allotted work. The Rule 163 of BPWD Code requires that in case of single tender, the approval of the next higher authority will be taken. Further, the department had directed (March 2009) all CEs/SEs/EEs to disqualify the contractors who did not start the work after allotment, responsible for improper and inordinate delay in completion of works, having litigation history or financial failure and the debarred contractors at the stage of evaluation of technical bid. These conditions were required to be adhered to while awarding the contract. In the course of test check of records, following cases of violation of contract conditions in award of contract were noticed:

Works awarded to ineligible/debarred contractors.

- Ten works amounting to ₹ 121.83 crore were awarded to two debarred private contractors (M/S JKM Infra Project Pvt. Ltd. and M/S Ganesh Ram Dokania) in four test checked divisions (*Appendix-2.2.5*).

The department stated that the matter of M/S JKM Infra was being investigated and proper disciplinary action would be ensured while the debarment of M/S Ganesh Ram Dokania was released vide MD Bihar Rajya Pul Nirman Nigam letter no 3377 (We) dated: 24.11.2009.

The reply regarding debarment of M/S Ganesh Ram Dokania was not acceptable as vide letter dated 24.11.2009 the debar was released only for one¹⁰ out of two works¹¹. The agency was made free from debar in February 2012.

- The work valuing ₹ 5.98 crore was awarded to M/S Umashankar & Co.¹², despite being disqualified in the technical bid under New Capital Division, Patna.

The department assured that proper action would be ensured on receipt of detailed report.

Work awarded to unregistered contractors.

- Further, two works amounting to ₹ 14.22 crore were awarded to two private contractors M/S Krishna Prasad & Co.¹³, and M/S Ganesh Yadav¹⁴, who were not registered in the department, the violation of para 9 of the Bihar Contractors Registration Rules, 2007.

In reply, the department stated that the work was awarded to M/S Krishna Prasad & Co within six months period after expiry of registration, hence award of work to agency was valid. The reply of the department was not

¹⁰ Bridge on Bilasi river on Kendua Road,

¹¹ Bridge on Bilasi river on Kendua Road, Bridge on Dwarbhasan river in Sauri - Hirna.

¹² (3 SBD/2009-10)

¹³ 8F2/2007-08: ₹ 4.74 crore

¹⁴ 2 SBD/2006-07: ₹ 9.48 crore

acceptable as the agency had remained unregistered even after admissible period of six months.

- Three cases (valued ₹ 1.41 crore) of single tender were finalised without approval of the next higher authority under two divisions in violation of Rule 163 of BPWD Code (*Appendix-2.2.6*).

In reply, the department, during exit conference assured appropriate action in this regard.

- The Government order (March 2009) was violated in allotment of work valued ₹ 0.57 crore to a private contractor (M/S R K Constructions, Aurangabad) at higher rates who had refused previously to execute same work awarded under Road Division, Aurangabad.

In reply, the department stated that the work was invited on quotation basis, in which there was no provision to deposit earnest money. Hence, no penalty was deducted.

Thus, 17 road works worth ₹ 144.01 crore were awarded to ineligible contractors.

- **Non-submission of work programme**

As per the special condition of contract mentioned in BPWD Code, the contractor should furnish his programme for construction/execution of work within the stipulated time schedule along with the methodology of construction of each item or work and obtain the approval of the Engineer-in-Charge prior to actual commencement of work.

Work programme were not obtained from contractors.

In contravention of above stated special condition, 64 road works (59 per cent) costing ₹ 291.59 crore were started without obtaining the work programmes from the respective contractors in seven divisions as shown in table below. Audit also observed that in three divisions¹⁵ 84 per cent of the test checked road works were started without obtaining work programme, out of which 33 per cent works were delayed.

Table no. 4
Work Programme not submitted by the Contractors

SI. No.	Name of division	No. of road works test checked	No. of road works in which work programme not submitted	Agreement value of road works in which work programme not submitted (₹ in lakh)	Remarks (Delay in work)	Range of delay (in months)
1	Aurangabad	12	5	2194.19	5	9-14
2	Banka	14	2	1399.39	-	Work going on
3	Bettiah	17	16	7162.74	1	1-4
4	Darbhanga	20	13	6225.82	7	4-38
5	Patna West	14	4	1056.42	3	11-32
6	Purnea	20	19	9816.03	8	6-24
7	Nawada	11	5	1304.82	5	8-36
	Total	108	64	29159.41	29 cases	

¹⁵ (i) Bettiah (ii) Darbhanga (iii) Purnea

As evident from above, 29 cases were delayed from the scheduled completion period. This indicated poor contract management and also placed the department on a weak footing in the event of rescinding the contract due to unsatisfactory progress of the work.

In reply, the department stated that it was now being ensured that new work would not be started without a detailed work programme and such requirement shall henceforth form part of the agreement.

2.2.8.3 Execution of MDRs

Scrutiny of execution of MDRs in test-checked divisions revealed instances of deficiencies like initiation of work without forest land clearance, encouragement of illegal mining, execution of work without technical sanction and non recovery of penalty/advances etc as discussed in succeeding paragraphs. It was further observed that out of 591 agreements (State level) executed during 2007-12, 332 works were delayed for period ranging from four to 44 months, of which 16 agreements were rescinded and 158 works were still in progress.

Other deficiencies in execution under test-checked divisions are discussed in succeeding paragraphs.

- **Incomplete road works due to not obtaining prior approval for use of Forest Land.**

Forest (Conservation) Act, 1980 stipulates that notwithstanding anything contained in any other law for the time being in force in a State, no State Government or other authority shall make except with prior approval of the Central Government, any order directing that any forest land or any portion thereof may be used for any non forest purpose.

Work started without forest clearance which resulted into non completion of work.

Scrutiny disclosed that the work of Improvement of Riding Quality Programme (IRQP) of Lauria Sikarpur Thodi (41 to 46 km) was started in September 2010 with agreement value of ₹ 2.58 crore and scheduled completion period of one year. Since the road was lying in Balmiki Tiger Project area, prior approval of National Wildlife Council, New Delhi was required to be obtained. However, the work was started without prior approval of the same and subsequently stopped (March 2011) after incurring expenditure of ₹ 1.15 crore due to non clearance of Forest Department to use forest land for road construction purpose.

In reply, the department stated that the total length of Lauria-Sikarpur-Thodi road was 46.8 km. Out of this, the road work in only 3.9 km was held up due to the protected forest zone. However, the vehicles were plying over the whole road. The fact remains that due to initiation of work without obtaining required clearance from National Wildlife Council, the work remained incomplete even after incurring expenditure of ₹ 1.15 crore.

- **Excess payment on fake invoices**

Excess payment on fake bitumen invoice

Audit scrutiny in Road Division, Darbhanga revealed that in a case of IRQP work of "Keoty-Raiyam Road (0 to 7.5 km) the contractor submitted invoices for utilisation of 162.602 MT of bitumen against consumption of 163.768 MT as per booking made by concerned Junior Engineer in the measurement book (MB). Cross verification of the genuineness of those bitumen invoices from

Indian Oil Corporation Limited (IOC) and Hindustan Petroleum Corporation Limited (HPCL) revealed that the contractor had lifted only 98.14 MT of bitumen. Payment of ₹ 22 lakh by the EE for 65.62 MT of bitumen without verifying the genuineness and correctness of bitumen invoices resulted in excess payment to that extent.

In reply the department stated that the F.I.R. had been lodged against the erring contractor.

The reply was not sufficient as department had not intimated regarding action taken against the erring officials.

● **Inadmissible payment against price neutralisation for bitumen**

Clause 10 CC (a) of the SBD provided that price adjustment shall apply for the work done from the start date to the end of the initial intended completion date or extensions granted by the Engineer but shall not apply to the work carried out beyond the stipulated time for reasons attributable to the contractor. Department's resolution (March 2008) further stated that the price neutralisation for the increase and decrease in the cost of bitumen was payable to contractor in F2¹⁶ agreements where the works were completed within the prescribed or within the approved extension of time.

**Inadmissible
payment on
price
neutralisation**

Audit scrutiny of two road works under Nawada division revealed that inadmissible price escalation of ₹ 38.18 lakh were allowed against works which were not completed in the stipulated time and where the time extension was also not granted as given below in **Table No. 5**:

Table No. 5
Statement showing price neutralisation given without time extension
(₹ in lakh)

Division	Name of Road /Agreement Number	Agreement Value	Schedule completion date	Amount	Completi on date
Nawada	W/S of Pakribarawan Warsaliganj Road in Km 0 to 12.50/5 F2/ 07-08	450.33	30.07.2009	28.97	30.6.2011
	Strengthening work of Atari Jethian Tapovan Banganga Road in Km 22.7 to 33.30/21 F2/ 06-07	179.71	15.03.2008	9.21	9.4.2008
TOTAL	Two road works	630.04		38.18	

Thus, undue benefit was given to the contractor in violation of clauses of agreement. No responsibility was fixed on the erring officials.

In reply, the department stated that price neutralisation was paid to contractor in anticipation of grant of time extension and recovery would be ensured in cases where time extension was not granted.

The reply was not acceptable as the rule did not provide for payment of price neutralisation in anticipation of extension of time.

● **Irregularities in advances**

Advances to contractors are to be provided as per the conditions of the contract. Such advances would be secured non-perishable materials advance,

¹⁶ Form2-the agreement paper of the work

mobilisation advance and plant and machinery advance. Scrutiny disclosed following irregularities in recovery of advances:

Mobilisation advance

Clause 10(B) (II) of SBD provides that mobilisation advance (MA) not exceeding 10 *per cent* of the tendered value may be given, if requested by the contractor in writing within one month of the order to commence the work. In such a case the contractor shall execute a Bank Guarantee/Bond from scheduled Nationalised Bank as specified by the Engineer-in-charge for the full amount of such advance before the advance is disbursed. Further, the entire advance is to be recovered by the time 80 *per cent* of the gross value of the contract is executed and paid together with interest due on the entire outstanding amount.

Scrutiny revealed that work of Khaira Mehsauni via Manikpur Road under Lakhisarai division was rescinded in July 2008 and mobilisation advance paid to contractor amounting to ₹ 82.70 lakh was not recovered.

In reply, the department stated that the instructions had been issued to recover the amount.

Plant and machinery advance

Clause 10 B(III) of SBD stipulates that an advance for plant and machinery may be given if requested by the contractor in writing within one month of bringing such plant and machinery to site and subject to the condition that such plant and equipment are hypothecated to the Government. Further, the entire advance is to be recovered by the time 80 *per cent* of the gross value of the contract are executed and paid together with interest due on the entire outstanding amount.

Rupees 2.25 crore was not recovered in plant and machinery advance.

Audit scrutiny revealed that, plant and machinery advances of ₹ 2.25 crore including interest was not recovered despite completion of the work as detailed in the table below:

Table no. 6
Short or non-recovery of Plant and Machinery advances
(₹ in lakh)

Name of division	Name of work	Agreement Number	Unrecovered amount of P & M advance and interest	Remarks
Banka	Package	01F2/06-07	174.82	Work completed
	Package	01F2/06-07	49.82 (Interest on P&M)	-do-
		Total	224.64	

In reply, the department stated that the advance as pertaining to Road Division Banka would be adjusted from the final bill of contractor.

The fact remains that P and M advance was not recovered from the contractor as required under clause 10 B(iii).

Unadjusted temporary advance

Rule 100 of the Bihar Public Works Account Codes stipulates that accounts of temporary advances given for payment against passed vouchers should be closed as soon as possible.

Temporary advance amounting ₹52.58 lakh was outstanding against 41 officials for more than five years.

Test check of selected eight divisions revealed that contrary to the above stated provision, temporary advance amounting to ₹ 52.58 lakh were outstanding against 41 officials for more than five years. It was also observed that the controlling officers had not taken any action to recover/adjust these advances from the officials during these years. The details of advances are given in the **Table no. 7** below:

Table no. 7
Outstanding Temporary Advance

(₹ in lakh)

Sl. No.	Name of division	No. of persons	Outstanding Temporary Advances			Total
			Transferred	Retired	Death	
1	Aurangabad	3	-	0.08	15.84	15.92
2	Bhagalpur	7	2.86	-	0.16	3.02
3	Chapra	7	0.06	-	-	0.06
4	Darbhanga	8	19.83	-	1.00	20.83
5	Nawada	7	0.92	-	-	0.92
6	New Capital	1	-	-	4.02	4.02
7	Patna West	3	-	0.85	0.04	0.89
8	Purnea	5	6.92	-	-	6.92
		41			TOTAL	52.58

As evident from the table that 35 officials were transferred to other divisions, two retired and four expired during the period. The non-adjustment of advances from the concerned officials was fraught with risk of misappropriation.

In reply, it was stated that departmental instructions had been issued according to the advices of Finance Department. It was assured to take action for recovery by the divisions.

- **Compensation not recovered**

Clause 2 of the SBD stipulates that if the contractor fails to maintain the required progress mentioned in terms of Clause 5 or to complete the work and clear the site on or before the contract or extended date of completion he shall without prejudice to any other right or remedy available under the law, pay to the Government on account of such breach, an agreed compensation.

Compensation of ₹ 58.45 lakh were not recovered from contractors

It was observed that the divisions failed to recover the imposed compensation on account of delay in execution of five road works amounting to ₹ 58.45 lakh¹⁷ in three test-checked divisions (August 2012).

In reply, department assured that it would be realised in final bill.

¹⁷ (i) Approach Road to Ganga Bridge, Bhagalpur-₹ 3.83 lakh.(ii) Bhagalpur Agarpur Kotwali Road Bhagalpur-₹ 10.54 lakh (iii) CMDG Road, Chapra -₹ 7.52 lakh (iv) Tilka Manjhi Champagnar Road Bhagalpur -₹ 33.21 lakh, and (v) Warsliganj Katarpur Road, Nawada -₹ 3.35 lakh

● **Encouragement of illegal mining by the Divisional Officers**

Rule 40 (10) of Bihar Minor Minerals Concession Rules, 1972 required works contractor to purchase minerals from lessee/permit holder and authorised dealers only. The works department was required not to receive the contractor's bills unless accompanied by an affidavit in Form 'M' with particulars of minor minerals used in works in Form 'N' along with a photocopy of the said affidavit and particulars. The photocopy of the affidavit with full particulars was to be sent for verification to the District Mining Officer/Assistant Mining Officer within whose jurisdiction the mineral was allegedly purchased. If the said affidavit on verification was found to be false, either wholly or partly the department/division was to assure that the mineral was obtained by illegal mining and District Mining Officer/Assistant Mining Officer was to take action as prescribed in these rules against the maker of the said affidavit.

Irregular payment of ₹42.65 crore without getting the Form 'M' and 'N'.

Audit scrutiny revealed that in violation of the above provision six divisions allowed payment of ₹ 42.65 crore (including carriage charges of ₹ 16.27 crore) in 33 road works involving minor minerals without getting the Forms 'M' and 'N' and transport challans (*Appendix-2.2.7*) from the contractors.

Further, a contractor (M/S C K Infrastructure Ltd., New Delhi) had submitted false form 'M' and 'N' for utilised minerals in Patna West division. The above instance revealed that due care was not being exercised by the EEs before release of payment. Such action would encourage illegal mining in the State.

In reply the department stated that now the payment were being made after obtaining form 'M' and 'N'. It was further stated that the matter regarding M/S C K Infrastructure Ltd., New Delhi was under investigation.

● **Works not conforming to the specification**

Section of MORTH were not followed in execution of work

According to Section 504.5 of the MORTH specifications, the Bituminous Macadam (BM) was to be covered either with the next pavement course (Semi Dense Bituminous Concrete) or wearing course as the case may be within a maximum of forty-eight hours to protect the layer of BM. If any delay was anticipated the course was to be covered by a seal coat as prescribed under Clause 513 of MORTH before/opening to any traffic. The seal coat in such cases was to be considered incidental to the work and was not to be paid for separately.

Audit scrutiny revealed that in six divisions, the next wearing courses were done after delays ranging from six to 287 days after the execution of BM works in case of 24 road works (*Appendix-2.2.8*) costing ₹ 129.65 crore. Even the protectionary seal coat works was not done in these cases of delay as there was no such entry in the MBs. Thus, the executed works were not conforming to the specifications.

In reply, the department stated that normally the immediate laying of the next layer was ensured, but in few cases due to unavoidable circumstances at site, the delay occurred. Spraying tack coat was ensured in such cases.

The reply was not in conformity with MORTH specifications as seal coat was required in case of delay.

- **Loss due to non disposal of bitumen**

Rule 276 of BPWD code stipulates that EE should dispose the unused stock i.e. lying without transaction since two years, by the order of SE.

Loss of money due to non disposal of bitumen

Audit scrutiny revealed in three divisions¹⁸ that 327.328 MT of bitumen was lying unused since 2004-05. Though this bitumen was declared obsolete, no action was taken for its disposal. Non-utilisation and non-disposal of the bitumen resulted to the department suffering a loss of ₹ 57.88 lakh¹⁹.



(Bitumen lying in the stores of Road Division, Nawada)

In reply, the department stated that matter had been taken up by the headquarters on priority basis. The quality test had been completed and accordingly its usefulness and utilization would be ensured shortly.

- **Expenditure in excess of Administrative Approval**

Administrative approvals were not revised

As per clause 183 of BPWD Code a revised estimate must be submitted when a sanctioned estimate is likely to be exceeded by more than 20 *per cent*, either owing to the rates being found insufficient, or for any cause whatever or when there were material developments or deviations.

Scrutiny of records revealed that the expenditure on 17 road works was increased from 20 to 121 *per cent* more than the sanctioned amount of AA (*Appendix-2.2.9*). The AAs were, however, not revised even after lapse of period ranging from three to 51 months (June 2012).

In reply, the department stated that action would be taken after verification.

- **Technical Sanction not obtained before commencement of work**

Seven road works amounting to ₹ 30.42 crore were commenced without obtaining the required technical sanction.

As per Rule 126 of BPWD code- for every work which is proposed to be carried out, except petty works and repairs, the cost of which is not likely to exceed by the competency of the SE, a properly detailed estimate must be prepared for the sanction of the competent authority. This sanction is known as technical sanction of the estimate and it should be obtained before the commencement of the work.

¹⁸ (i) Aurangabad (ii) Nawada (iii) Siwan

¹⁹ Rate of IOC effective on 1st August 2005 = ₹ 17683.37/MT x 327.328MT = ₹ 57.88 lakh.

Scrutiny of records revealed that seven works valued ₹ 30.42 crore under three divisions were commenced without obtaining the required technical sanction as shown in the **Table no. 8** below:

Table no. 8
Commencement of works without technical sanction
(₹ in lakh)

Sl. No.	Name of division	Name of work	Agreement No.	Agreement Value	Date of Agreement/work order
1.	Darbhanga	IRQP work in Road Old Alignment of NH-57 Delhi More to Ekvinda	49 SBD/2011-12	447.41	26-03-12/ 03-03-12
2.	Darbhanga	Widening and strengthening of Benipur Bishanpur Road in 0 to 12.5 Km for the year 2011-12	31 SBD/11-12	1055.13	26-12-11/24-12-11
3.	Siwan	IRQP work of Mairwa - Darouli Road (Km 0-14)	SBD 2(S) 2011-12	330.14	21.12.11
4.	Siwan	PR work of New Siwan Hasua Road (Km 2-12)	23F2 2011-12	175.87	21.12.11
5.	Siwan	PR work of Siwan Andar Road (Km 0 - 16.25)	1 SBD 2011-12	254.27	21.12.11
6.	Siwan	Zeradei Narendrapur Road (0 to 5 km)	7F2 2011-12	52.94	17.12.11
7.	Patna West	Improvement of Saguna More Junction (Baily Road and Danapur khagaul road junction)	38 SBD/09-10	726.66	13.07.09
		Total		3042.42	

Thus, the codal provisions were not being adhered to, before commencement of works.

In reply, the department admitted that in some cases due to exigency of the work, the work was taken up in anticipation of technical sanction of the project and technical sanction was taken later on. The adherence to the codal provision was being ensured.

The fact remains that codal requirement were not complied with.

2.2.9 Organisational Controls

The organisational control such as manpower management, conducting of inspections and maintenance of control registers i.e. Road Register etc. were rendered weak due to factors discussed below:

2.2.9.1 Man Power Management

Efficient functioning of the department depends upon the availability of requisite manpower and proper management of the available manpower. The

There was vacancies in the post of JEs to CEs which was indicative of deficient manpower management

sanctioned strength and Men in position of technical manpower of department are given below:-

Table no. 9
Sanction strength and men in position as on March 2012 (Technical staff)

Sl. No.	Name of post	Sanctioned strength	Men in position	Shortfall (Percentage)
1.	Chief Engineer	8	3	5 (62)
2.	Superintending Engineer	39	36	3(8)
3.	Executive Engineer	123	123	0 (0)
4.	Assistant Engineer	614	452	162(26)
5.	Junior Engineer	1067	565	502 (47)

As evident from the table above there was vacancies to the extent of 26 and 47 *per cent* in the post of Assistant Engineer (AEs) and Junior Engineer (JEs) respectively, who were directly responsible for proper execution of work. Moreover, at the top level there were vacancies in the posts of CE/SE too. This was indicative of deficient man power management in the department. Further, the shortage of manpower affects the progress of works adversely.

In reply, the department stated that promotion to the post of CE was in process, for direct appointment of AE, post had been advertised and examination had been conducted by BPSC. Further, the process of appointment of JEs was on through Water Resources Department.

The fact remains that the department is functioning with significant shortage in technical posts.

2.2.9.2 Inspections

As per Government order (July 2008), the SE was required to conduct detailed inspections at least three days in a week.

Inspection not done as per norms

Audit scrutiny revealed that during August 2008 to March 2012 only 715 (16 *per cent*) out of required 4512 inspections²⁰ were done by the SEs in divisions. Further, there was nothing on record to show that on reports of the conducted inspections any follow up action was taken. Thus, the works were not adequately inspected by the SEs.

The matter was intimated to the department (August 2012). However, no reply was received so far (February 2013).

2.2.9.3 Measurement Book

BPWA Code (Rule 234) stipulates that the Divisional Officer should check and measure not less than 10 *per cent* of the measurements recorded by his subordinates.

MB not checked by the divisional officers

Audit scrutiny of records revealed that the measurements recorded in 20 measurement books (MB) were not checked by the divisional officers in eight test checked divisions²¹. This indicated the compliance failure of codal provisions and is beset with the risk of wrong measurement.

The department stated that this was being ensured.

²⁰ 188 week X 3 days X 8 circle = 4512 inspections.

²¹ (i) Aurangabad(3) (ii) Banka(2) (iii) Bettiah(1) (iv) Darbhanga(1) (v) Lakhisarai(2) (vi) Nawadah(3) (vii) Patna West(3) (viii) Purnea(5).

2.2.9.4 Non-maintenance of Road Register

Road registers were not maintained

Appendix-A, 3 (11) of BPWA Code requires the divisions to maintain “a road register” in which the details of road, executed maintenance works there upon and the headwise details of fund spent is to be mentioned.

Audit scrutiny revealed that eight²² test-checked divisions did not maintain road register while one division²³ had not updated the same.

In reply, the department stated that maintenance of road register was being ensured.

2.2.10 Quality Control Assurance

The quality aspects of road were not given its due importance as the required quality tests were not being done and contractors did not established quality test laboratory at site.

Quality control is a very important part of any work or production. Besides, it leads to construction of improved quality and uniformity, ensuring a more economical utilisation of materials. It also affords a significant reduction in users cost, in terms of lower cost of vehicle operation, transportation and maintenance. Scrutiny disclosed following shortcomings in quality control assurance of department:-

- The contractors did not establish quality test laboratories at site in 44 road works valuing to ₹ 261.57 crore under three divisions, though it was required according to contract conditions (*Appendix-2.2.10*).

The department stated that the report of the quality tests performed by the contractor were generally not kept as records in the divisional office and the non availability of such reports in the divisional office might not be the only proof that the contractors did not establish laboratories/perform the test/required number of test.

The reply was not acceptable as department had not any other proof to give assurance of quality tests in road works.

- Section 903 of MORTH Specifications for Road and Bridge Works provides the number of quality test required to be done during construction works. Test check revealed that the required number of the quality tests were reduced below the specification in 62 road works of five divisions (*Appendix-2.2.11*).

The department stated that so far as the less number of tests done is concerned, the frequency of test prescribed was only advisory.

The reply was not acceptable that the department had not done the quality tests during the execution of work as per MORTH specifications and also had not initiated its own norms for testing.

- The test laboratories were non functional in Purnea division and circle office at Darbhanga. It was also observed that eight test-checked divisions did not have the required staff strength for quality test laboratories as only 25 personnel were posted in the said laboratories against the sanction post of 62.

²² (i)Aurangabad (ii) Banka (iii) Bettiah (iv) Bhagalpur (v) Chapra (vi)Patna West (vii) New Capital Patna (viii) Siwan.

²³ Purnea

The department stated that upgradation of field laboratories was being ensured.

The above facts reveal that quality aspects of roads were not given its due importance in the department.

2.2.11 Conclusion

Though the Road Construction Department had comparatively improved its performance from Tenth five year plan period, still shortcomings remained in various areas. The department had no defined criteria for selection of MDRs as well as planning to meet the challenges of increasing traffic. The target of upgradation of Eleventh five year plan, which included the widening of single lane MDRs into intermediate lane, could not be achieved. Further, the upgradation of selected MDRs was done without conducting required traffic census and CBR test. There were instances of non-utilisation of available funds. The contract management was defective as the works were awarded to debarred and ineligible contractors. The other deficiencies such as excess payment to the contractors, irregularities in payment of advances and tacit encouragement of illegal mining were noticed. Manpower management and quality control mechanism was not at the optimum level. Thus, department had to make a lot of extra effort for accommodate the continuous increase of traffic density on the major district roads.

2.2.12 Recommendations

- Department should plan the up-gradation of MDRs according to the requirements of continuous increase in traffic;
- Reliable transparent and objective selection criteria must be evolved by the department before designating any road as a “major district road”.
- Works should be awarded to contractors in a transparent manner as stipulated in departmental code;
- Up-gradation of MDRs should be carried out effectively and in accordance with prescribed specifications of Indian Road Congress/Ministry of Road Transport and Highways;
- Manpower management must be strengthened; and
- Monitoring of scheme should be strengthened at field level and quality control of works ensured.