

Chapter - 3

Compliance Audit

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Transport, Roads and Buildings Department

3.1 Public Private Partnership (PPP) Projects in Road Sector

3.1.1 Introduction

Public Private Partnerships (PPPs) are aimed at involving private sector in raising capital required for public sector projects, build the projects and deliver quality goods and services at competitive costs. In road sector, there are two variants of PPP projects – (i) Build, Operate and Transfer (BOT) – Toll and (ii) BOT-Annuity.

BOT-Toll: The concessionaire or private partner finances, constructs, operates the project and recovers its investment by collecting toll fees from road users during concession period. Concessionaire offering highest premium or seeking lowest grant is selected through competitive bidding. In this mode, commercial risks are generally borne by concessionaire.

BOT-Annuity: In this mode also, private partner finances, constructs and operates the project during concession period. However, concessionaire receives a fixed sum of annuity payments (determined through competitive bidding) from employer.

3.1.2 Audit scope and objectives

In Andhra Pradesh, there were 33 PPP projects¹ in roads sector being implemented by Transport, Roads and Buildings (TR&B) Department with an estimated project cost of ₹8349.73 crore. Out of these, nine projects² with a total project cost of ₹5379.63 crore were test checked (during July 2012 - January 2013) in audit.

Implementation of these projects was examined in audit by scrutinizing records in Secretariat and offices of Chief Engineer (PPP), Andhra Pradesh Road Development Corporation (APRDC)³ and Divisions concerned. Audit objective was to assess whether (i) selection of projects for PPP was based on proper techno-economic assessment; (ii) procurement process was transparent and ensured economy; (iii) contract management was sound and safeguarded public/Government interest; and (iv) project execution was effective and achieved timely completion of projects and delivery of services to public. Brief profile of test checked projects is given in *Appendix-3.1*. Audit findings were communicated (July 2013) to Government and replies received were taken into account while finalizing this report.

¹ **Source:** Official website of PPP Cell of Finance Department, GoAP

² BOT-Toll projects : 7 and BOT-Annuity projects : 2;
Projects costing more than ₹100 crore : 8 and Project costing less than ₹100 crore : 1;
Road projects : 5 and Bridge projects : 4;
Under operation : 2, Under construction : 3, Partially operational : 1 and Yet to commence : 3

³ A Government Corporation

Audit findings

3.1.3 Contemplation and formulation of PPP road projects

It was observed that there was no standard policy / procedure for identification of Projects to be taken up under PPP mode and those to be taken up with budgetary support. There were cases of taking up projects without establishing their technical requirement and financial viability; changed decisions like switching from BOT mode to conventional mode, Toll mode to Annuity mode and vice versa; revision in scope of project during tender process; unexplained cancellation of tenders; subsequent shelving of projects completely; etc., as discussed below:

3.1.3.1 Taking up project without requirement

‘Indian Road Congress (IRC) code: 64-1990 - Capacity of Roads in Rural Areas’ prescribes the corresponding traffic capacities for upgradation of roads in rural areas. Audit observed that as per traffic studies conducted on Kadapa-Pulivendula Road in July 2007 for preparation of Detailed Feasibility Report (DFR), average daily traffic was about 4,594 passenger car units (PCUs)⁴ per day. Considering the annual traffic growth rate of 7.5 per cent projected in DFR, traffic on this road would reach the corresponding volume of more than 17250 PCUs prescribed in IRC Code⁵ for four-lane roads, only in the year 2026, as shown below :

Table-3.1 – Design service volumes prescribed in IRC Code for two/four lane roads

Type of Road	Design Service Volume (PCUs/day) stipulated in IRC code	Year in which traffic on KP road will reach this volume
2 lane with earthen shoulders	15000	2024
2 lane with paved shoulders	17250	2026
4 lane with earthen shoulders	35000	2036
4 lane with paved shoulders	40000	2037

(Source : IRC code: 64-1990 and traffic data available in DFR)

However, four laning works were taken up and awarded on BOT-Annuity basis with a total financial commitment of ₹812.60 crore⁶, though the existing two-lane road (with earthen shoulders) would be sufficient till 2024.

Government replied (November 2013) that growth rate around Kadapa district would be high due to establishment of industries like Uranium Processing Unit and educational institutions like Yogi Vemana University and hence four laning was taken up. However, reply was not backed by any recorded projections.

⁴ Passenger Car Units

⁵ IRC codes are followed all over the country

⁶ As per agreements the department has to pay an amount of ₹40.63 crore at six monthly intervals for 10 years

3.1.3.2 Non-preparation of project report

Audit observed that no DFR was prepared for 'Two lane bridge across river Musi on Miryalguda – Kodad Road'. Department prepared a cost estimate of bridge work and conducted traffic census to assess expected toll revenues. No financial analysis was conducted to weigh the different options available to department before deciding to entrust the work on BOT-Toll basis. Government did not furnish any reply on this issue.

3.1.3.3 Taking up project without project report and administrative approval

Department entrusted (July 2008) preparation of Detailed Feasibility Report for (i) four-laning of 'Nellore – Gorantla' road (connecting NH-5 with NH-7 via Atmakur, Badvel, Kamalapuram) and (ii) up-gradation of road from Jammalamadugu to Gooty, to a consultant, to develop road from Nellore to Gooty (295 Km). Audit noticed the following:

- Department invited (May 2008) Request for qualification (RFQ)⁷ bids for 'Nellore-Gooty' road even without getting feasibility report and without obtaining administrative approval from Government.
- RFQ bids tenders were again invited (February 2009) and though 12 firms submitted (August 2009) bids, department did not finalize tenders.
- Traffic surveys conducted later (in October 2010 between Marrisipadu in Nellore district and Proddatur in Kadapa district) showed that traffic on this road came down due to ban on export of iron ore and the project was ultimately not taken up (October 2013).
- There were several changes in the scope of project. While the initial tender notice was for 'Nellore-Gooty' road, RFQ was later amended (July 2008) by deleting 40 Km stretch (Mydukuru to Jammalamadugu) from scope of work. When pre-qualification bids were invited in second call (February 2009) the stretch from Jammalamadugu to Gooty was also deleted. This indicates that tenders were invited without firming up scope of work.
- Though viability of the project was not established after reduction in traffic, widening of the stretch from Mydukuru to Jammalamadugu (a part of Nellore - Gooty road) was awarded (January/ April 2012) under World Bank assisted AP Road Sector Project at a cost of ₹118.78 crore.

Government replied that tenders for four laning of Nellore-Gooty road were cancelled due to considerable changes in scope of work based on DFR submitted by consultant and that project was now unviable due to decrease in traffic. Reply was silent on invitation of tenders without preparation of DFR and without administrative approval. Government accepted that there was no standard policy/procedure for identifying Projects to be taken up under PPP mode or with external aid.

⁷ An invitation for pre-qualification of prospective bidders

3.1.3.4 Projects planned but not taken up

(i) Government accorded (February 2007) Administrative Approval for 'construction of High Level Bridge (HLB) across river Krishna in Mahabubnagar district', which was proposed to reduce distance between Kollapur (Mahabubnagar district) and Atmakur (Kurnool district) by 127 km. Tenders were invited (RFQ in November 2007 and RFP⁸ in May 2008) to take up bridge work under BOT-Annuity basis, but lowest bidder did not come forward for concluding agreement. Government later ordered (December 2009) to convert the project as a Plan work instead of PPP basis. However, even after more than six years since administrative approval, bridge work had not been taken up even under plan funds and objective of reducing travel distance between Kollapur and Atmakur was not achieved.

Government did not offer any reply in this regard.

(ii) Tenders for "Four laning of Puthalapattu – Naidupeta Road from km 0.000 to km 41.700 and from km 59.000 to km 116.830" were invited (RFQ in April 2008 and RFP in March 2009) for taking up this project under BOT-Toll basis. However, Government cancelled (June 2010) tenders as the stretch from km 0.000 to km 59.000 of Puthalapattu to Tirupathi road was converted as National Highway (NH-18A) and handed over to National Highways authorities. Widening work of remaining stretch from Tirupathi to Naidupeta had not been taken up so far.

Government replied that DFR for widening of balance stretch from Tirupathi to Naidupeta was got prepared but tenders were stalled as this stretch had now been declared as a National Highway. It is evident from reply that some BOT proposals were being processed even for roads which were under consideration for conversion as NH.

3.1.4 Cost estimations

In PPP projects, accurate assessment of cost of construction and toll revenue projections play a crucial role in assessing the financial viability of projects, fixing the concession period, evaluation of bids and taking informed decisions about taking up projects. Audit noticed the following deficiencies in selected projects :

3.1.4.1 Under projection of traffic

Construction of major four lane bridge across river Godavari connecting National Highway (NH) -5) at Km 197/4 and a two-lane State Highway called Eluru-Gundugolanu-Kovvur (EGK) road at Km 82/4 was taken up under BOT toll system for reducing the distance between Eluru and Rajahmundry by 40 km. While preparing the DFR, the Average Annual Daily Traffic of tollable vehicles was worked out as 11317, based on traffic counts taken at km 197/4 of NH-5 in December 2005. However, for computation of toll revenue projections, only 8320 tollable vehicles were considered without any recorded justification/computations for such reduction, resulting in under projection of revenues.

⁸ Request for Proposal (RFP) - An invitation for obtaining financial proposals from bidders

Government replied that (i) consultant considered certain percentages for assessing tollable traffic and (ii) all the traffic would not go through this bridge alone, as there are so many other towns en-route to Eluru. However, no documentation was available on record. Under projection of toll revenue resulted in longer concession period and consequent extra toll burden on road users.

3.1.4.2 Additional toll burden on road users due to under projection of toll revenues

In respect of the project - 'High level bridge across river Musi', as per departmental records, traffic counts were taken thrice - in November 2006, May 2007 and July 2007, according to which the toll revenue works out to ₹4.15 crore, ₹4.26 crore and ₹3.44 crore, respectively. However, for assessing toll revenues projections in its financial analysis, department adopted traffic data of July 2007 which gives the least toll revenue.

While assessing future toll revenues, department adopted toll revenue of 2007 as the projected toll revenue for 2011, ignoring the inevitable increase in traffic and toll fee rates (annual growth of 7.5 per cent and 5 per cent respectively, as per department's projections) in the intervening four years. This resulted in under-projection of revenues.

As per Concession Agreement, the total concession period was 15 years including the construction period of 18 months. After completion of bridge, the concessionaire would collect toll for the remaining concession period. If construction of bridge is completed earlier, concessionaire would collect toll for longer period, since the total concession period is constant. Audit noticed that in earlier tender calls for the project, department stipulated the construction period as one year. However, in latest tender notice and agreement, longer construction period of 18 months was specified without any recorded justification for the increase. In fact, bridge was completed and opened for traffic within one year only and the concessionaire started toll collection from users six months in advance (from 19 February 2010).

By using the same financial model which was used by department for evaluation of lowest bid, Audit re-computed the cash flows of the project, duly taking into account the actual construction period of 12 months and correct toll revenues. As per Audit calculations, duration of concession period for the project works out to only nine years, as against the stipulated concession period of 15 years. Extra toll burden on road users during excess concession period works out to ₹69.09 crore.

Government did not offer any remarks on the above observations.

3.1.4.3 Provision of lumpsum amounts in estimates without details

As per the Rule 129 of General Financial Rules, detailed estimates should be prepared for all the items of work. Audit noticed that in the cost estimates of 'Kadapa-Pulivendula road' project, taken up under BOT-Annuity basis, lump-sum provisions aggregating ₹70.05 crore were made towards various work items. Of this, ₹56.43 crore was provided towards cross drainage works and cement concrete drains. Neither details of structures and basis for arriving at these costs nor details of structures actually executed/ being executed were on record. Government did not offer any remarks.

3.1.4.4 Incorrect assessment of utilities to be shifted

Scope of services of Transaction Advisor (TA) appointed for ‘Hyderabad-Karimnagar-Ramagundam (HKR) Road’ project included identification of all existing utilities like electrical lines, cables, water supply lines, etc. and plans for their relocation. However, Audit noticed that the Techno-Economic Feasibility Report (TEFR) prepared by TA did not indicate these details, but provided only a lump-sum cost of ₹24.26 crore for shifting utilities. However, during execution, underground water pipelines belonging to Hyderabad Metropolitan Water Supply and Sewerage Board and Rural Water Supply Department were encountered. Cost of relocation of these two pipelines was later assessed (2011) at ₹73.50 crore and works were entrusted to concessionaire with additional cost on nomination basis. This indicates that project was taken up *ab-initio* without accurate assessment of costs involved. Government did not furnish specific reply on this.

3.1.5 Tendering and contract management

In PPP projects, tendering is normally done in two stages – (i) Request for qualification (RFQ) stage in which bidders are shortlisted based on their financial and technical capacity and past experience and (ii) Request for proposal (RFP) stage in which the financial bids are received. In case of PPP-Toll projects, the concession period is fixed by department before tender process and price bids are finalized and awarded to the bidder who offers to pay highest amount to Government or who seeks lowest amount of Grant from Government. During financial evaluation of price bids, department (either independently or through consultant appointed for the purpose) assesses the reasonableness of lowest bid by conducting a financial analysis of lowest bid, duly considering the concessionaire’s investment, future toll revenues and recurring costs of concessionaires during concession period. Audit observed the following deficiencies in selected projects:

3.1.5.1 Acceptance of high bids

Tenders for (i) Hyderabad-Karimnagar-Ramagundam (HKR) road, (ii) Narketpally-Addanki-Medarmetla (NAM) road and (iii) Puthalapattu-Naidupeta (PN) road were invited simultaneously (RFQ: March-April 2008 and RFP: February-April 2009).

Audit observed that 10 bidders were short listed⁹ for each project. However, firms which had ranked high (some of them purchased RFP documents) in RFQ stage did not participate in financial bidding. Only three bidders (ranked among the last four in RFQ) participated in financial bidding, each emerging lowest in one project. Grants sought by them were close to maximum permissible grant of 40 *per cent* of Total Project Costs (TPCs) in all three projects.

⁹ As per initial RFQ conditions, six bidders were to be shortlisted for RFP stage bidding. This was increased to 10 on request of prospective bidders

Table-3.2 – Details of bids received for HKR road, NAM road and PN road

Bidder	'Grant sought' (₹ in crore) and 'percentage of Grant to TPC'		
	HKR Road (TPC: ₹1358.19 crore)	NAM Road (TPC: ₹1196.84 crore)	PN Road (TPC: ₹528.50 crore)
'A'	₹529.00 crore (38.95 per cent) (L-1)	₹476.00 crore (39.77 per cent)	₹210.00 crore (39.74 per cent)
'B'	₹536.50 crore (39.50 per cent)	₹473.95 crore (39.60 per cent) (L-1)	₹208.76 crore (39.50 per cent)
'C'	₹540.00 crore (39.76 per cent)	--	₹203.49 crore (38.50 per cent) (L-1)

(Source : Information as per departmental records)

In bid evaluation report, Transaction Advisor (TA) opined (September 2009) that considering a reasonable Equity IRR¹⁰ of 20.61 per cent, grants sought by L1 bidders in all three projects were in excess over reasonable grants.

Technical Evaluation Committee (TEC) held (December 2009 / February 2010) negotiations with lowest bidders and the firms reduced grants to ₹454 crore, ₹467.02 crore and ₹189.27 crore¹¹ respectively. It was noticed that final negotiated offers were still excess by ₹362 crore, ₹204.02 crore and ₹47.27 crore respectively, over reasonable grants¹² worked out by TA. Government accepted (May 2010) these higher offers for HKR road and NAM road. Bids of PN road were cancelled (June 2010) due to conversion of some portion of road as a National Highway.

Further, during bid evaluation, department asked the TA for revised financial analysis for extreme worst case scenarios (i.e., 15 per cent increase in project cost and 15 per cent decline in traffic). While furnishing revised financial analysis, the TA clarified (December 2009) that scenarios mentioned in revised analysis were presented as per explicit instructions of department and did not represent Consultant's view. TA stated that the bids were still on high side. Finally, department asked (December 2009) another consultant to examine the financial analysis done by TA. The other consultant, while agreeing (16th/17th December 2009) with financial analysis done by TA, stated that Equity IRR of 22 to 25 per cent for such long term projects was reasonable, based on which bids were accepted.

Government replied that TA was asked to furnish revised financial analysis since Financial Evaluation Committee did not agree with the increase in TPC by the TA after opening of price bids based on the justifications given by bidders. However, even in the financial evaluation of second consultant, higher TPCs were considered and projects were awarded with higher grants.

¹⁰ Internal rate of return (IRR)

¹¹ Equity IRR works out to 29.6 per cent, 24.7 per cent and 22.6 per cent respectively (with sensitivity analysis of 10 per cent increase in project cost and 10 per cent decline in traffic)

¹² HKR road: ₹92 crore; NAM road: ₹263 crore; and PN road: ₹142 crore

3.1.5.2 Post tender change in Target Traffic

Target Date (TD) and Target Traffic (TT)¹³ are very important parameters in risk sharing arrangements. On the TD, actual average traffic count would be taken and in case of increases/decreases of actual traffic over TT, concession period would be adjusted as per concession agreement. Thus, TD and TT have a direct bearing on the rates quoted by bidders.

In pre-bid meeting in respect of 'Godavari Bridge' project, prospective bidders pointed out that TD and TT were not stated in tender document. Department replied that probable TD was 2019 and probable TT was 37489 PCUs. This means that if actual traffic on TD exceeds 37489 PCUs, concession period would be reduced. Audit observed that Concession agreement specified TD as 2018 and TT as 49868 PCUs, which was against Government interest.

Government replied that lower TT communicated to bidders was due to arithmetical error and that increase in TT in the agreement was beneficial to Government. Audit however observed that, post tender increase in TT is detrimental to Government interest since if actual traffic on TD is found to be between 37489 PCUs and 49868 PCUs, the concession period would have to be increased rather than reduction.

3.1.5.3 Short collection of performance security and success fee

In the DFR of 'Godavari Bridge' project, TPC was worked out as ₹593 crore. RFP document communicated to bidders also mentioned this TPC. However, after completion of bidding process, department increased the TPC to ₹808.78 crore, which was also mentioned in concession agreement. However, department collected Performance security of five *per cent* and Success fee of one *per cent* on original TPC (₹593 crore) instead of on ₹808.78 crore.

Government replied that modified project cost of ₹808.78 crore was used for evaluation purpose only and collection of performance security and success fee of original TPC was in order. However, Audit noticed that increased TPC was mentioned in the agreement also.

3.1.5.4 Additional toll burden on road users due to reduction in construction cost

After opening of bids in respect of 'Godavari Bridge', for the purpose of bid evaluation, department prepared a revised TPC (₹808.78 crore), which included ₹273.77 crore for 'Well' type foundations for the bridge. Drawings appended to concession agreement also specified well type foundations.

Audit observed that, in execution, concessionaire adopted 'Cast in-situ Bored Concrete Pile' foundation instead of 'Well' foundation. As per rates available

¹³ TD is the date acknowledged by the client and the concessionaire for review of concession period. TT is the traffic estimated to reach on TD. As per agreement, when the actual average traffic on TD exceeds TT, for every one *per cent* of such increase, the concession period shall be reduced by 0.75 *per cent*, subject to a maximum of 10 *per cent*

in department's own estimates, cost of pile foundation in this project¹⁴ works out to ₹70.03 crore. Thus, there was a reduction of ₹203.74 crore in construction cost.

Considering this reduction in construction cost, Audit recomputed cash flows of the project using the same cash flow model adopted by department during bid evaluation. As per Audit computations, concessionaire would get back its investment in just 18 years (with 18 *per cent* return¹⁵ on Equity), as against 25 years concession period allowed in agreement. Thus, concession period was excess by seven years, during which the additional burden on road users by way of toll fee works out to ₹2519.55 crore.

Government replied that consultants proposed well foundations based on Geo-technical investigations and economical consideration as the likely cost of pile foundations was higher than well foundations and accordingly procurement was taken up with well foundations. Audit however noticed that the consultant worked out the cost of pile foundation at ₹35000/₹45000 per meter, where as the rate of pile foundation provided in the cost estimates of the project was only ₹10414 per meter.

3.1.5.5 Acceptance of bid without assessing its reasonableness – unnecessary toll burden

As per departmental estimates for 'Yanam-Yedurulanka bridge', construction cost of bridge was ₹63.99 crore which included a cost of ₹31.08 crore for 'Well' type foundations. It was noticed that the successful bidder had submitted its bid with 'Pile' type foundations. Audit noticed that considering the fact that pile foundation is more economical than well foundation, construction cost of bridge works out to approximately ₹55 crore. However, department did not consider this fact during bid evaluation and accepted lowest bid even though the amount of subsidy (₹69 crore) sought by bidder was more than the entire construction cost. Thus, the department, in effect, paid entire cost upfront to concessionaire and still allowed it to collect toll from road users for 15 years. Department neither obtained any justification from lowest bidder nor conducted any financial analysis on its own to assess the reasonableness of bid before accepting.

Government agreed that project was awarded on the basis of lowest subsidy sought and that well foundations for said bridge would be economical (without any supporting data) in view of the large scour anticipated. However, fact is that pile foundation is more economical.

3.1.5.6 Non collection of performance security

Clauses 13.1 to 13.3 of tender conditions/Terms of Reference (TOR) of 'Yanam-Yedurulanka bridge' provided that Entrepreneur shall deposit with Government 3 *per cent* of project cost as Construction Performance Security

¹⁴ for 696 piles as being executed in this project

¹⁵ During evaluating the lowest bid, department worked out Equity IRR at 13.65 *per cent*. As per assumptions in DFR, an Equity IRR of 14 to 18 *per cent* was reasonable. Audit considered maximum return of 18 *per cent* for the purpose of cashflow analysis

and 0.5 per cent as Maintenance Performance Security. However, these clauses were omitted in the Agreement resulting in non-collection of ₹3.85 crore. Government replied that performance security was not taken and maintenance security was now being obtained.

3.1.5.7 Post tender favour to bidder

TOR of ‘Yanam-Yedurulanka bridge’ did not provide for any concession to bidders for exemption of Sales Tax (ST) on works contract. However, the successful bidder submitted its bid with a condition that it shall be exempted from payment of ST for this project. Though Government rejected (June 1999) this condition initially, it later accepted (August 1999) reimbursement of ST, and an amount of ₹91.49 lakh was reimbursed.

Government replied that this was based on recommendations of Technical Committee, which opined that bridge was not viable without this concession. Fact remains that this was a post tender change which was not offered to other bidders.

3.1.6 Procurement of higher loans by Concessionaires

In BOT projects, finances required for project are met from Grant given by Government, concessionaires’ own equity contribution and balance through loans raised by concessionaires. Audit noticed that concessionaires of HKR road, NAM road and Godavari bridge obtained high amounts of loan from lending institutions, by projecting project costs higher than those mentioned in RFP documents.

Table-3.3 – Details of loans taken by concessionaires vis-à-vis TPCs

(₹ in crore)

	Original TPC as per RFP document	TPC projected by bidders during bid evaluation	TPC projected by Concessionaires to lenders	Grant from Government	Original TPC minus Grant	Loan actually taken
HKR Road	1358.19	1852.89	2209.00	454.00	904.19	1525
NAM Road	1196.84	1424.88	1760.53	467.02	729.82	1060
Godavari Bridge	593.00	861.00	861.00	207.55	385.45	566

(Source : Project related agreements and other departmental records)

As can be seen from above, loans obtained were more than ‘Original TPC minus Grant’ in all three projects.

As per provisions of Concession Agreements, a Substitution Agreement is concluded between lending agency, concessionaire and Government, wherein, Government agrees to the condition that in the event of financial default of concessionaire, lending bank has a right to substitute the concessionaire by another one till realization of outstanding dues. Thus, raising of high amounts of loan by concessionaires increases risk to Government in such event.

Further, as per concession agreement, department has to make termination payments to concessionaire in case of termination of concession agreement before end of concession period in the event of Force Majeure or default of client/ concessionaire. These termination payments are linked to Debt Due to banks. Thus, facilitation of higher loans increases department's liability in event of termination of agreement.

Government replied that as per concession agreement, it had no role in loans obtained by concessionaires and has no obligation to lenders except for signing the substitution agreement. It was also replied that even in case of termination, there is no higher risk to Government due to higher loans, since 'Debt due' used for determining termination payments was linked to only TPC as defined in agreement. While the reply suggests that it was the lending institutions which bear the risk, fact remains that there was an inherent system weakness. There was no mechanism in concession agreements to prevent concessionaire from (i) raising abnormally high loans by inflating the project cost, and (ii) constructing a PPP project only with loan raised and grant paid by Government without its own investment (or getting back its initial investment).

3.1.7 Development agreements concluded by concessionaires

After concluding Concession Agreements, Special Purpose Vehicles¹⁶ (SPVs) of HKR road and NAM road entered into EPC¹⁷ agreements for execution as shown below:

Table-3.4 – Value of EPC contracts concluded by Concessionaires

(₹ in crore)

Project	TPC projected by bidder during bid evaluation	Construction cost* assessed by TA during bid evaluation	Total value of EPC contracts concluded by SPV	Difference
HKR Road	1852.89	1351.27	1750.00	398.73
NAM Road	1424.88	1178.16	1540.28	362.12

* including escalation during construction

(Source : Information as per departmental records)

Audit observed that:

- total values of EPC contracts in these projects were much higher than construction costs worked out by TA for the respective projects.
- SPVs awarded EPC contracts at inflated values to its own member firms (either original members or inducted subsequently).
- in respect of NAM road, one EPC agency did not have experience in execution of highway road projects, as per the experience certificates furnished at RFQ stage. Monthly progress reports indicate that the

¹⁶ SPV is an independent entity created by successful bidder solely for purpose of the project awarded

¹⁷ Engineering, Procurement and Construction

entire work was being executed by this agency and the other consortium member was not involved in execution.

- in HKR road, one EPC agency (which was inducted into the SPV subsequently) had experience in only irrigation and pipeline works and did not have experience in road projects.

Government replied that as per agreements, the concessionaires are free to award works either to members of consortium or to any other EPC contractors and that concessionaire is entirely responsible for quality of works. However, the present system does not address the risk of inflating the values of the development agreements and entrusting them to its own member firms to justify higher loans obtained by the SPVs. The system also does not prevent inexperienced firms forming consortiums with reputed firms, only to increase chance of being selected for the PPP contracts.

3.1.8 Project Execution

It was observed that progress of works was slow in the following four projects:

Project (Due date of completion)	Percentage of progress¹⁸ as of September 2013	Audit observations
Godavari Bridge (May 2012)	82.83	After more than a year from target date, progress of super-structure of bridge was still 86.69 <i>per cent</i> . Progress of approaches on Kovvur side was only 45.31 <i>per cent</i> as five acres of land is yet to be acquired due to court cases. Though the entire land required for approach road on Rajahmundry side was handed over by January 2012 (90 <i>per cent</i> of this handed over before November 2009), progress of this approach road was only 74.57 <i>per cent</i> .
HKR road (August 2013)	67.81	Physical progress achieved was only 67.81 <i>per cent</i> . Out of the total of 105.21 Km road, bituminous concrete was completed in only 57.93 Km. Even embankment was not formed in 17.65 Km. Land Acquisition was 77.41 <i>per cent</i> and water pipelines and electrical lines affecting a stretch of 34.3 Km and 49.86 Km respectively were yet to be shifted. Department entrusted five new bypass roads ¹⁹ which were not part of initial project proposals at additional cost.

¹⁸ As per progress reports submitted by Independent Engineer to department and other departmental records

¹⁹ at Pragnapur, Kukunoorpally, Sultanabad, Peddapalli and Godavarikhani

Project (Due date of completion)	Percentage of progress ¹⁸ as of September 2013	Audit observations
NAM road (July 2013)	Overall progress in percentage terms not available	Out of the total of 212.5 Km road, bituminous concrete work was completed in 172.11 Km only and construction was at various stages in remaining reaches. Even embankment work was not completed for a length of 21.57 Km. 65 structures are in progress and 37 structures (including two Road Over Bridges, designs of which were not even approved) were still to be taken up. 15 <i>per cent</i> of land is yet to be handed over. Water pipelines for 52.58 Km and 659 electrical poles are to be shifted.
Kadapa – Pulivendula road (October 2011)		Three reaches (KP-02, KP-03 and KP-04) were completed and one reach (KP-01) was yet to be completed. Delay in land acquisition affected package KP-01. Original concessionaire defaulted in repayment of loan taken from lenders and was substituted (May 2012) with another agency. Substitute concessionaire also suspended work in October 2012 and there was no progress thereafter. Widening of only 9.545 Km road was completed, out of total length of 13.300 Km in this reach. Two major bridges in Km 3/400 and Km 6/100 and a culvert in Km 3/100 were still incomplete. In other three reaches, though widening of carriage way was completed, handing over of only a partial land resulted in non-completion of roadside drains in village limits, avenue plantation and construction of bus bays and shelters.

Due to non-completion of projects within due dates, intended objective of providing improved level of service to road users was not achieved as contemplated.

3.1.8.1 Non-completion of punch list items

As per agreements of Kadapa – Pulivendula road, Independent Engineer (IE) may issue a provisional certificate of completion of project, even though some works were not yet complete, provided road stretch can be legally, safely and reliably placed in commercial operation. Such a Provisional Certificate shall append thereto a list of outstanding items (Punch List). All Punch List items shall be completed by Concessionaire within 120 days from issue of Provisional Certificate.

Audit observed that IE issued Provisional Certificates for three packages during August 2010 – September 2011 along with Punch List items like construction of CC drains, landscaping, avenue plantation, construction of bus shelters, etc. As Punch List items were not completed even after the lapse of more than one year from issue of Provisional Certificates, the department withheld certain amounts. Audit observed that amounts so withheld were less than their actual cost as shown below:

Table-3.5 – Details of amounts withheld by department towards unfinished punch list items

(₹ in crore)

Package	No. of Semi Annuities/Total Amount paid	Estimated cost of Punch List items	Total amount withheld	Difference
KP-02	4/27.95	1.69	0.49	1.20
KP-03	5/57.61	2.49	1.06	1.43
KP-04	3/34.68	1.15	0.55	0.60
Total		5.33	2.10	3.23

(Source : Information as per departmental records)

Government replied that punch list items could not be taken up due to delay in land acquisition process and to safeguard Government interests, recovery was being affected at proportionate rates. However, fact remains that proportionate amounts were not recovered as shown above.

3.1.9 Conclusion

Department did not have a standard policy / procedure for identification of Projects to be taken up under PPP mode and those to be taken up with budgetary support. There were cases of taking up projects without establishing their technical requirement and financial viability; changed decisions like switching from BOT mode to conventional mode, Toll mode to Annuity mode and vice versa; revision in scope of project during tender process; unexplained cancellation of tenders; subsequent shelving of projects completely, etc. Bidding process lacked transparency, some projects were awarded on lowest bid basis without assessing the reasonableness of bids, resulting in unnecessary toll burden on road users. Projects which were earlier assessed to be viable without or limited funding from Government were awarded at high costs. There was no mechanism to prevent the Concessionaires from raising high amounts of loans by projecting inflated project costs to banks and award of project works to inexperienced EPC agencies by concessionaires. Projects were not completed in time due to non-handing over of lands and non-shifting of utilities.

3.1.10 Recommendations

- **Specific criteria for identification of projects to be taken up (i) through either PPP mode or conventional contract system, and (ii) with budgetary support or with borrowings need to be devised.**
- **A standard and uniform mechanism may be stipulated for assessing reasonableness of bids in PPP projects.**
- **Suitable safeguarding clauses may be incorporated in the Concession Agreements to prevent concessionaires from raising abnormally high amount of loans, to protect Government from higher risks.**
- **A suitable mechanism may be put in place to ensure that project works are entrusted by concessionaires only to agencies with sufficient experience in concerned works.**

Environment, Forests, Science and Technology Department

3.2 Diversion of Forest land for non-forest purposes, Compensatory Afforestation (CA) and CAMPA

3.2.1 Introduction

Andhra Pradesh has a total notified forest area of 63.81 lakh Hectare (Ha)²⁰ (comprising 23.2 *per cent* of total geographical area of the State). Reserved, Protected and Un-classed forests occupy 50.48 lakh Ha (79.10 *per cent*), 12.37 lakh Ha (19.38 *per cent*) and 0.97 lakh Ha (1.52 *per cent*) of the total forest area respectively. The State also has a protected area network of 15.28 lakh Ha (23.9 *per cent* of total forest area).

Forest (Conservation) Act, 1980 (Act) enacted by Government of India (GoI) and Forest (Conservation) Rules, 2003 (Rules) issued there under prohibit diversion of forest land for non-forest purposes, except with prior approval of GoI. Such approvals are granted in two stages:

In Stage-I, proposal for diversion is agreed to in principle, subject to fulfilment of various conditions, which include (i) providing equivalent non-forest land (or) in case non-forest land is not available, degraded forest land to the extent of twice the forest land diverted, for Compensatory Afforestation (CA); and (ii) payment of Net Present Value (NPV) of forest land diverted, cost of CA and penal cost of CA, if any, by user agency. In Stage-II, formal approval is accorded for diversion of forest land after all conditions stipulated in Stage-I have been fulfilled.

Ad-hoc Compensatory Afforestation Fund Management and Planning Authority (Ad-hoc CAMPA) was created (May 2006) at Central level in which amounts paid by user agencies towards CA and NPV of the forest land being diverted were to be deposited. AP State CAMPA was subsequently constituted during September 2009. Funds received by Ad-Hoc CAMPA were released to State CAMPA subject to maximum of 10 *per cent* of accumulated principal amount pertaining to respective States/Union Territories, for utilization as per approved Annual Plan of Operations (APOs).

3.2.2 Scope of Audit

Audit conducted between August 2012 and December 2012 covered a period of five years ending 2012-13. Records of Forest Headquarters, Andhra Pradesh Forest Development Corporation (APFDC) and 17 Divisions²¹ substantially funded by CAMPA were examined. Audit was conducted to ascertain whether diversion of forest land, collection of moneys towards CA and NPV, CA of the non-forest land and various other conditions imposed by

²⁰ As per Andhra Pradesh State of Forest Report, 2012

²¹ Adilabad, Ananthapuramu, Chittoor West, Eluru, Hyderabad, Jannaram, Kakinada, Karimnagar West, Kurnool, Manchirial, Nalgonda, Narsipatnam, Paloncha, Srikakulam, Vishakhapatnam, Vizianagaram and Warangal North.

GoI while approving diversion of forest lands were properly attended to and implemented.

Audit findings are discussed below:

Audit findings

3.2.3 Diversion of Forest land for non-forest purposes

Diversion of forest land for non-forest purposes is subject to prior approval of GoI. State Forest Department is responsible for ensuring the fulfilment of all the conditions stipulated by GoI and reporting the same to GoI. Audit noticed following deficiencies:

3.2.3.1 Incorrect acceptance of CA land

Department diverted (2008) 567 Ha of forest land in Karimnagar East and Kothagudem Forest Divisions to Singareni Collieries Company Limited²² (SCCL) for coal mining. GoI while approving (May/July 2008) stipulated that CA be raised in 401.96 Ha of non-forest land.

Scrutiny of records revealed that 339.34 Ha of land accepted by Forest Department from user agency in Srikakulam Division in fact was un-notified forest land already owned by Forest Department since 1976. Acceptance of its own forest lands from user agency and reporting compliance with the conditions to GoI resulted in according of approval to diversion of forest land without obtaining equivalent non-forest land for CA.

Department replied that approval of diversion was based on reports (November/ December 2000) of DFO and confirmation by District Collector that sufficient non-forest land was available in the 'Land Bank' constituted in the district. However, reply was silent on acceptance of forest land already in possession of department without verification.

3.2.3.2 Unauthorised use of forest land

An extent of 1157.20 Ha of forest land was diverted to I&CAD²³ Department for construction of Pulichintala Reservoir Project across Krishna River consequent on final (Stage-II) approval given by GoI (October 2006).

Scrutiny of records of Nalgonda Division revealed that 102.80 Ha of forest land in Chintalapalem Reserve Forest Block under Miryalaguda Range falling in submergence area of the project was not included in the initial proposals for diversion by user agency. This resulted in unauthorized use of forest land for non-forest purposes without providing equivalent non-forest land for CA and making payment of NPV, which at minimum of rates²⁴, works out to ₹7.2 crore.

²² a Public Sector Undertaking

²³ Irrigation and Command Area Development

²⁴ ₹7 lakh per Ha for crown density between 0.1 to 0.2 as per rates applicable prior to March 2008

Department replied that user agency was requested (November 2012 to January 2013) to verify and send proposals for diversion and to stop the work till the issue is settled.

3.2.3.3 Construction of reservoir without forest clearance

In-principle (Stage-I) approval for diversion of 39.27 Ha of reserve forest land was accorded by GoI (November 1998) for construction of reservoir across Kovvada Kalva in West Godavari District subject to condition of transfer of equivalent non-forest land for CA.

Scrutiny of records revealed that construction of reservoir was completed (September 2004) even without final (Stage-II) approval of GoI.

Department replied that user agency paid NPV recently and submission of compliance report was in process.

3.2.3.4 Non/short-collection of NPV

(i) GoI accorded (July 2010) final approval for diversion of 3731.07 Ha of forest land for construction of Indira Sagar (Polavaram) Multipurpose Project across Godavari River based on the reported fulfilment of conditions stipulated in Stage-I approval (December 2008).

Scrutiny of records at Paloncha Division revealed that diverted forest land included 101.81 Ha falling in 'Papikonda National Park' notified (November 2008) under Section 35 (4) of Wildlife (Protection) Act, 1972. As per orders (March 2008) of Supreme Court of India, NPV of such National Park areas was to be assessed at 10 times of normal rates. However, NPV was collected at five times the normal rate, resulting in short collection of NPV of ₹41.42 crore.

Department replied that the area was under Wild Life Sanctuary at the time of Stage-I clearance and became part of National Park only after completion of Stage-I conditions and hence enhanced rate was not applicable. However, Papikonda National Park was notified (November 2008) even before Stage-I clearance (December 2008). Besides, revised rates are applicable in all cases where final approval was granted after the Court orders.

(ii) Ministry of Environment and Forest, GoI clarified (September 2003/ May 2004/ October 2006) that NPV shall also be charged in all the cases where final (Stage-II) approval has been granted on or after 30 October 2002, irrespective of date of in-principle (Stage-I) approval.

Audit scrutiny revealed that in two cases²⁵, though department issued demand notices to user agencies in August 2007/November 2007 for payment of NPV amounting to ₹40.03 lakh, same was not collected even after more than five years.

²⁵ (i) 4 Ha to a private firm (in Ananthapuramu Division) and (ii) 1.88 Ha to National Highways Authority of India (in Visakhapatnam Division)

Department replied that GoI was requested to cancel mining lease in one case and that in the other case, latest notice was issued to user agency in December 2012 for payment of NPV.

3.2.4 Compensatory Afforestation

CA was one of the most important conditions stipulated by GoI while approving proposals for diversion of forest land for non-forest uses. Audit noticed the following:

3.2.4.1 Acceptance of disputed/encroached non-forest lands for CA

(i) In Mancherial Forest Division, 100 Ha of forest land was diverted (June 1999) in favour of a private company for mining of limestone. Lease granted for a period of 10 years, was later transferred (2001) in favour of another lessee. Mining lease was renewed for a further period of 20 years based on approval by GoI (June 2009). Scrutiny of records revealed that against 100 Ha of non-forest land identified in Pagadapally Village and mutated (September 2000) in favour of department for raising CA, 40 Ha of land was disputed/ under cultivation by villagers for last six to eight years. As a result, CA was not taken up on this land.

(ii) Similar acceptance of disputed/encroached lands by department was noticed in three more cases²⁶ during 1996 to 2004, wherein, out of 8.64 Ha of non-forest land accepted for CA, 5.75 Ha was later found to be encroached/ disputed and hence no CA could be carried out thereon. Even on balance 2.89 Ha, no CA was done so far (June 2013).

(iii) In three²⁷ other cases during period 2001 to 2011, CA stipulated by GoI had not been carried out or only partially carried out for various reasons. In these cases, as against stipulated CA of 154.47 Ha of non-forest land, afforestation was taken up in only 10 Ha so far (June 2013).

Department replied that matter would be pursued with Revenue Department and action would be taken to raise CA in all cases.

3.2.4.2 Non-notification of forest lands accepted for CA

As per guidelines issued under the Act, non-forest land accepted in lieu of diverted forest land for raising CA was to be notified as Reserve/Protected Forest within six months of Stage-II approval. In test checked divisions, Audit noticed that in 35 cases (*Appendix-3.2*) out of 94 cases notification process was not completed (June 2013) even after lapse of a period ranging upto 20 years since final approval by GoI, denying contemplated higher protection to these lands.

²⁶ DFO Vizianagaram – 3.64 Ha, DFO Srikakulam – 3.75 Ha, DFO Vizianagaram – 1.25 Ha

²⁷ DFO Eluru – 39.27 Ha and 4.20 Ha (nil CA); DFO Chittoor East – 110.87 Ha (partial CA)

Department attributed (June 2013) the delay to lengthy process involved in notification and stated that notification process was completed in 78 out of 280 cases of non-forest land accepted. It further stated that efforts were being made to hasten the process by conducting monthly review meetings.

3.2.5 Non-fulfilment of project specific conditions

GoI while according approval for diversion of forest land imposes certain Project specific conditions to be fulfilled by the Department/user agency after commencement of Project. Audit noticed cases of failure of fulfilment of such conditions as detailed in the following paragraphs:

3.2.5.1 CA land not declared as ‘Sanctuary’

GoI approved (March 1993) diversion of 177.47 Ha of forest land in Kurnool District for Srisailam Right Bank Canal on a specific condition that character of non-forest land identified for CA should be maintained as habitat for Great Indian Bustard (GIB) and should be declared as ‘Sanctuary’. Scrutiny of records revealed that non-forest CA land of 246.77 Ha identified and handed over (1990) to department in Rollapadu and Sunkesula villages of Kurnool District is yet to be integrated into existing Rollapadu Wild Life Sanctuary and notified as ‘Sanctuary’ (June 2013). Non fulfilment of the condition stipulated by GoI even after 20 years affected maintenance of area as a habitat for GIB, a bird on verge of extinction.

It was replied that notification proposals were sent to District Collector, Kurnool (April 2013) and matter would be pursued.

3.2.5.2 Canal Bank plantations not taken up

GoI approved (November 2006) diversion of 118.71 Ha of forest land in Ananthapuramu and Proddatur Divisions for Chitravathi Balancing Reservoir (CBR) canal on a specific condition that canal bank plantation should be taken by State Forest Department at the cost of user department. Scrutiny of records of Ananthapuramu Division revealed that stipulated condition is not yet complied with (June 2013) by department even after a lapse of six years.

It was replied that matter would be pursued with user agency to pay amount to take up canal bank plantation.

3.2.5.3 Non establishment of Green Belt in mining areas

GoI approved (May 2002) diversion of 4.05 Ha of forest land in Ananthapuramu Forest Division for mining of Steatite and Dolomite by a private firm on a specific condition that surrounding areas of cluster of mines should be enriched by green belt/ enrichment plantations and Soil and Moisture Conservation (SMC) works at the cost of lease holders. However, no such green belt was established (June 2013) even after a lapse of 11 years.

Department replied (June 2013) that user agencies had since deposited required funds and green belt plantation would be taken up.

3.2.6 Management of CAMPA fund

During 2006-07 to 2012-13, Department transferred ₹2142.22 crore to Ad-hoc CAMPA, received ₹448.69 crore allocated from Ad-hoc CAMPA and spent ₹357.65 crore leaving a balance of ₹91.04 crore (March 2013). Analysis of management of State CAMPA fund revealed the following:

3.2.6.1 Delayed remittance of funds into Ad-hoc CAMPA

Scrutiny of records of State CAMPA revealed that there were delays in remittance of Demand Drafts received by department towards CA/NPV from various user agencies into Ad-hoc CAMPA. Considering 10 days as reasonable time, there were unexplained delays ranging upto 242 days in 476 cases involving an amount of ₹1278.43 crore, resulting in loss of interest of ₹2.64 crore.

Department replied (June 2013) that process of transfer of DDs at various levels involved considerable time and instructions had been issued to ensure that DDs were sent to Head Office within three days of their receipt to facilitate expeditious transfer to Ad-hoc CAMPA.

3.2.6.2 Monitoring and Evaluation by State CAMPA

Audit noticed that only three meetings were held as against stipulated six meetings²⁸ by Steering Committee during period 2009-12. APOs which were needed to be prepared and submitted by Executive Committee to Steering Committee before end of December each year were delayed for periods ranging from three (2011-12) to nine (2009-10) months. This resulted in consequential belated approval of APOs impacting achievement of objectives.

Guidelines issued (July 2009) by GoI on State CAMPA stipulated that an independent system of concurrent monitoring and evaluation of works implemented in the States should be evolved and implemented to ensure effective and proper utilization of funds. However, no such mechanism was evolved by AP State CAMPA so far.

It was replied that though a concurrent monitoring through web enabled portal of e-Green watcher of Central Ad-Hoc CAMPA was launched in October 2012, no independent third party evaluation could be put in place for want of guidelines from Ad-Hoc CAMPA.

3.2.7 Conclusion

There were diversions of forest land without getting required non-forest land for Compensatory Afforestation (CA) from user agencies. There were cases of short/non collection of NPV from user agencies. In a number of cases, non-forest land accepted for afforestation was not notified as Protected/Reserved forest even after passage of one to 20 years from final approval, though Forest Conservation Act stipulates such notification within six months. Project

²⁸ Steering Committee is required to meet at-least once in six months. It met only once in a financial year

specific conditions were not complied with in some cases. CA also suffered due to acceptance of disputed and encroached lands for afforestation and non-obtaining of alternate lands. There were delays in remittance of amounts received from user agencies into Ad-hoc CAMPA, resulting in loss of interest. Prescribed number of Steering Committee meetings were not held and there were delays in holding meetings with consequent delay in approval of Annual Plan of Operations.

3.2.8 Recommendations

- *Government should ensure that the conditions stipulated by Government of India while approving forest land diversions are complied with in all cases.*
- *Government should put in place proper mechanism for verification of non-forest lands identified by user agencies for Compensatory Afforestation, before acceptance by Department.*
- *Government should take stringent action in cases of unauthorised diversion of forest lands by user agencies.*
- *Government should take immediate steps to notify all non-forest lands already accepted for Compensatory Afforestation and ensure notification within the prescribed six months period in future cases also.*
- *Department should avoid delays in transfer of the amounts received from user agencies towards Net Present Value, Compensatory Afforestation, etc. to Ad-hoc CAMPA.*

Irrigation and Command Area Development Department

3.3 Modernization of Irrigation Systems

3.3.1 Introduction

Modernization of irrigation projects involves restoration/improving standards of reservoirs, dams, canals and distributary network of existing irrigation systems deteriorated due to aging, repeated erosion, silt formation and flood damages. GoAP accorded administrative approval (May 2006 to May 2009) for modernization of eight irrigation systems in the State to stabilize 55.76 lakh acres of ayacut under these systems with a cost of ₹15,001 crore (details in *Appendix-3.3*).

3.3.2 Audit scope and objectives

Audit examined (August 2012 to February 2013) implementation of seven modernization projects (excluding Nagavali system, where works were yet to be taken up) in offices of 3 CEs, 12 SEs and 18 EEs. Test check of 48 (13 per cent) out of 369 packages entrusted was conducted to assess whether (i) modernization works were taken up based on scientific assessment of needs and with proper planning, (ii) financial propriety was ensured in tendering and contracting, and (iii) works were executed smoothly and envisaged objectives were achieved in time. Audit findings are discussed below:

Audit findings

3.3.3 Preparation of Detailed Project Reports (DPRs)

As per Central Water Commission (CWC) guidelines (1980), Detailed Project Reports (DPRs) for Modernization of Irrigation and Multipurpose Projects should, *inter alia*, cover agronomic and management aspects such as seepage losses, wastage of water, land potential, cropping pattern and crop water requirement, water management, maintenance, etc; present performance of various components of project and their comparison with proposed features. Audit noticed that no DPR was prepared for Nizamsagar project and Godavari Delta System (GDS).

Commissioner, Godavari Basin stated that a DPR was prepared (not supported by any record) for Nizamsagar modernization. Chief Engineer, GDS on the other hand replied that there was no need for preparing a DPR as GDS was an already existing irrigation system. However, it was essential to study vital aspects mentioned in CWC guidelines for planning specific works to be carried out.

3.3.4 Improper planning in TBPFLC

Tungabhadra Project High Level Canal (TBPFLC) runs for a length of 196.43 km. The initial length of 105.437 km was in neighbouring State under jurisdiction of Tungabhadra (TB) Board. The original designed capacity of

TBPHLC was 4000 cusecs at head reach near Tungabhadra reservoir and 2575 cusecs where it enters AP State.

In August 2005, GoAP decided to allocate 10 TMC²⁹ of Tungabhadra water³⁰ (out of the AP's share of 73.01 TMC³¹) to Pennar Ahobilam Balancing Reservoir (PABR) for drinking and other incidental needs of Hindupur area in Ananthapuramu district. This water was proposed to be drawn by widening TBPHLC.

Audit, however, observed that GoAP took up (November 2007) widening of TBPHLC within the State border to increase its carrying capacity to 4200 cusecs and entrusted six package works (cost: ₹463.50 crore) during May - July 2008, without obtaining acceptance from neighbouring State for widening of TBPHLC on that side. Works were in progress and an expenditure of ₹161.62 crore was already incurred as of March 2013. Unless TBPHLC on other State is also widened, widening of canal on AP side would not serve the objective of providing 10 TMC of water to PABR and expenditure thereon would remain unfruitful.

Government replied (August 2013) that negotiations with Government of neighbouring State and Tungabhadra Board for such widening of canal initiated by GoAP in 2006 and were still on. However, objective of widening TBPHLC at a cost of ₹463.50 crore would not be fulfilled till an agreement is reached and canal in that State is also widened.

Even after more than six years since commencement of negotiations no agreement was reached. In fact, as recently as in April 2011, TB Board entrusted task of preparation of DPR for remodelling and restoration of TBPHLC on other side to its original carrying capacities indicating that there was perhaps no proposal for increasing its capacity. Therefore, utility of widening of TBPHLC at this end taken up at a cost of ₹463.50 crore is doubtful.

3.3.5 Assessment and stipulation of canal closure period

As modernization works were taken up on already existing irrigation systems, its execution was possible only during canal closure periods. Canal closure periods were finalized every year on advice of Irrigation Advisory Board (IAB), chaired by the District Collector concerned. However, there was no documentary evidence to show that department had calculated the canal closure period based on past experiences or had at any time approached IAB for assessing the probable canal closure periods or declaring a crop holiday, before taking up modernization works.

Audit observed that department failed to provide required canal closure period to contractors as a result of which, modernization works were not completed

²⁹ Thousand million cubic feet

³⁰ GoAP initially (in January 2004) decided to allocate 5 TMC of water to PABR. This was later increased to 10 TMC in August 2005.

³¹ TBPHLC (32.50 TMC), TBPLL (24 TMC), Kurnool Cuddapah (KC) Canal (10 TMC) and Rajolibanda Diversion Scheme (6.51 TMC)

as targeted and intended benefits not achieved. Deficiencies in providing canal closure period were as follows:

3.3.5.1 Non-stipulation of canal closure period in agreements

(i) There was no specific mention about working period / canal closure period in agreements of GDS, Pennar Delta System (PDS) and Tungabhadra Project Low Level Canal (TBPLLC) packages.

Government replied that (i) working period provided was 51 months in respect of GDS, (ii) water was released for prolonged periods due to demands from farmers in PDS and due to prevailing conditions in TBPLLC. However, audit observed that in GDS, 51 months was total contract period and not canal closure period. Department should have convinced the farmers about the importance of canal closure and benefits of providing sufficient working period to contractors.

(ii) In Package-39 of PDS (agreement period: 24 months), agency stopped work (March 2009) after executing a meager 6.17 *per cent* work citing non-availability of continuous working period for nearly two years from date of entrustment (May 2007). Department finally proposed (August 2012) to close the contract and to revise estimates for balance work with latest rates. Similarly, department had to propose pre-closure of Packages-34 and 40 (entrusted in May/February 2008) due to continuous release of water and lack of working period.

Further, though Government permitted (December 2012) to close all these three packages (expenditure: ₹12.27 crore), contracts were yet to be closed (June 2013) and re-entrusted, resulting in non-achievement of intended objectives.

Government replied (August 2013) that working period was restricted as water was released for both Rabi and Kharif crops due to availability of abundant water and canal closure was done only partially. Department should have taken up modernization works only after planning canal closure periods.

(iii) In package-2 (entrusted in June 2008) of TBPLLC, contractor stopped work after executing a meagre 7.31 *per cent* work (expenditure: ₹0.92 crore) and requested (September 2011) to stop water in canal for at least six months continuously and make payments with latest rates for balance work, or to close the contract. However, no decision was taken by department so far (July 2013). Government accepted that due to uncertainty in closure period, sufficient working period was not made available and hence closure of contract was proposed. Failure to make available required working period led to non-completion of works and non-achievement of intended objectives.

3.3.5.2 Non-providing of working period as stipulated in agreements

Even in projects, where closure / working periods were stipulated in agreements, department failed to make available the required working period to agencies as discussed below:

- Agreements of Krishna Delta System (KDS) modernization provided for canal closure period of 560 days (out of total contract period of 51 months). As against this, working period actually given was only 300 days.
- In TBPHLC, out of 23 months of working period to be provided (total contract period: 51 months), less than 17 months of working period was made available.
- In Nizamsagar project, out of 12 months canal closure period to be provided as per agreements (contract period: 25 months), department could make available only 182 days within agreement period resulting in non-completion of works.

Government replied that shortfall in providing working period was due to release of water in canals for extended periods, release of drinking water and loss of working period due to rains. However, release of drinking water and rainy season are not unforeseen contingencies and water release periods of previous years should have been taken into account while planning modernization works.

3.3.5.3 Impact of non-providing of working period on future tenders

As per tender procedure followed by GoAP, to qualify for award of a work, bidder should have a bid capacity greater than estimated value of work. During tender evaluation, bid capacity of each bidder is assessed using formula of " $2AN-B$ "³². If agreement period is of short duration, bidder should possess higher bid capacity and *vice-versa*. Therefore, non / improper assessment of working period in modernization works of irrigation systems and consequent stipulation of short agreement duration would restrict the number of eligible bidders and thereby competition. Audit noticed that there was poor response to tenders in many cases, forcing department either to call for tenders several times or to split works into small packages. Non-providing of required working/canal closure period in ongoing works would have further discouraging effect on competition in future tenders also.

3.3.6 Lack of competition in tendering

Audit observed in some cases that works were awarded to single bidders, as shown below:

³² This is the formula used to assess the bid capacity of the tenderers, in which 'A' stood for maximum value of civil engineering works executed in any one year during the last five years, 'B' indicated the value of existing commitments and ongoing works, while 'N' is the number of years prescribed for completion of work for which tenders are invited. Under this procedure, the bidders had to demonstrate that their bid capacity was more than the estimated value of the work for which tenders were called for.

Table-3.6 – Number of works awarded to single bidders

Sl. No.	Irrigation System	Number of packages entrusted so far	Packages entrusted to single bidders (percentage)
1	KDS	56	18 (32)
2	Nizamsagar	16	10(62)
3	TBPLLC	18	15(83)

(Source : Information as per departmental records)

- Out of 18 packages entrusted to single bidders in KDS, 15 were premium bids. Out of these, nine were entrusted in first tender call itself.
- All the 10 packages entrusted to single bidders in Nizamsagar were premium bids and five were in first call.
- Out of 15 packages entrusted to single bidders in TBPLLC, 14 were on premium out of which six were in first call.

Receipt of single bids in large number of cases indicates lack of competition for modernization works.

Government replied that single bids were accepted (i) to complete works early to achieve modernization benefits to farmers and recall to tenders requires revision of estimates which involves extra financial implications (ii) due to urgency and programme works to be grounded before Khariff season and (iii) in view of poor response to earlier calls. However, urgency in entrustment did not ultimately translate into early completion, as only three out of 43 packages entrusted to single bidders were completed so far.

3.3.7 Issues pertaining to bid evaluation

Audit observed several instances where transparency in bidding process and evaluation was not fully ensured.

(i) In KDS, out of 56 packages, one firm bagged 18 packages (**Appendix-3.4**). Audit observed that in 17 out of these 18 packages only two bids were received and in one package single bid was received/accepted. Lowest bids in these 17 packages were at premium ranging from 3.72 to 4.5 per cent while the second lowest bids ranged from 4.59 to 4.98 per cent, close to the permissible upper ceiling of five per cent. Government did not offer any remarks.

(ii) Further, when tenders for Packages-1 and 4 of KDS were invited (December 2007), two and three bids respectively were received. One firm emerged lowest in both cases with bid values of ₹204.67 crore and ₹147.70 crore respectively.

Clause 28.2 of tender stipulated that - "Negotiations at any level were strictly prohibited. However, good gesture rebate, if offered by lowest bidder prior to finalization of bids may be accepted by bid accepting authority". However, department rejected L1 bids and entrusted works to L2 bidder (same firm in

both cases) at L1 rates. While reasons for rejection of L1 bids were not on record, allowing L2 bidder to lower its bid values after opening of bids was in violation of tender conditions.

Government replied that a High Power Committee rejected the tenders of L1 due to technical reasons and recommended award of contract to L2 who met technical and financial requirements. However, reply is contrary to the fact that price bids were opened only after technical qualification.

(iii) As per Government of AP orders³³, to qualify for award of any work, each bidder should demonstrate having executed a minimum specified value of similar works during last five years immediately preceding the financial year in which tenders were invited.

Audit observed that in Packages-10, 11, 12 and 15 of Nizamsagar modernization, Government relaxed (November 2008) this condition after opening of tenders and permitted the department to consider value of similar works executed in the year 2002-03 which was beyond the block period (i.e. from 2003-04 to 2007-08) stipulated in tender documents. In all four packages, single bids received (from the same firm) with a tender premium ranging from 2.52 to 4.86 *per cent* were accepted.

Government replied that tender condition was relaxed only to start work before Kharif 2008. However, Audit observed that by the time relaxation was given, Kharif 2008 had already begun. Also, three out of above four works had not been completed even after more than two years from their target dates of completion. Moreover, relaxing qualification criteria after opening of bids was against the spirit of competitive bidding.

3.3.8 Defining the scope of work in agreement

Work of construction of Sangam barrage cum bridge (package no. 33) of PDS was entrusted to a firm for ₹86.20 crore in April 2007 under Engineering, Procurement and Construction (EPC) turnkey system³⁴. The basic project parameters of agreement stipulated a barrage with (i) a minimum length of 1076 Mts., (ii) 77 vents and (iii) maximum flood discharge (MFD) of 7.50 lakh cusecs at a level of +35.000 M to be constructed as per relevant standards³⁵.

During finalization of designs, department insisted that barrage should be constructed for a length of 846 Mts. with a discharge of 7.5 lakh cusecs with a scour depth of 1.25 times on upstream side and 1.75 times on downstream

³³ GO.Ms.No.23, dated 5 March 1999 (reiterated in GO.Ms.No.94, dated 1 July 2003) of I&CAD Department

³⁴ Under EPC turnkey system, the contractor has to conduct survey and investigation, prepare and submit designs to the department (in line with the basic project parameters broadly defined in the agreement) and execute the entire work including all ancillary and incidental items of work and deliver the project in complete shape. No additional payments would be made for any additional/increased quantities of work under the defined scope of work

³⁵ Standards provided in AP Detailed Standard Specifications (APDSS), Bureau of Indian Standards (BIS) and CWC manuals, Ministry of Surface Transport (MOST) specifications and other Government circulars issued from time to time

side. Contractor contended (September 2007) that design parameters suggested by department were higher than those stipulated in IS codes and demanded extra payments for additional work.

An Expert Committee constituted by Government for examining the issue recommended (February 2008) to close the contract and refund the deposits to contractor and call for fresh tenders on the ground that agency did not agree for scour depths and other technical parameters and that no agreement was reached despite several negotiations. Committee also opined that there was change in scope of work due to reduction of barrage length from 1076 Mts. to 846 Mts. Accordingly, the contract was closed and work was re-entrusted (July 2008) to another firm for ₹122.50 crore.

Government replied that contract was closed as (i) proposal of agency was not in tune with parameters approved by Committee; (ii) agency insisted on additional payments contrary to agreement conditions; and (iii) in view of urgency to complete work within intended period of 30 months.

If agency failed to adhere to agreement conditions, action should have been taken as per agreement conditions/codal provisions and work should have been re-entrusted on the risk and responsibility of first agency. Instead, department took upon itself the additional cost of ₹36.30 crore, involved in re-entrustment.

3.3.9 Progress of works

Progress of works and expenditure (as of March 2013) under modernization projects were as follows :

Table-3.7 – Progress of modernization works and expenditure

Sl. No.	Irrigation System	Total number of packages	Packages entrusted	Target date of completion as per agreements*	Packages to be completed by March 2013	Packages completed	Cost of the agreements concluded (₹ in crore)	Expenditure (₹ in crore)
1	Nagarjunasagar	776	104	September 2016	18	Nil	2194.92	738.07 [#]
2	KDS	68	56	July 2016	12	Nil	2875.81	673.62
3	GDS	211	157	March 2016	8	Nil	1308.17	272.54 [@]
4	TBPHLC	6	6	September 2012	6	Nil	458.42	161.62
	TBPLLC	18	18	October 2012	18	2	174.05	93.72
5	PDS	10	10	March 2012	10	Nil	940.40	367.72
6	Nizamsagar	16	16	May 2015	14	1	550.77	218.28
7	Yeleru Irrigation System	3	2	October 2013	1	1	7.81	3.09
	Total	1108	369		87	4	8510.35	2528.66

* the target date of completion of the latest agreement concluded

[#] Information on Nagarjunasagar pertains to 24 main canal packages. Details of the 80 distributary packages were not furnished by department

[@] Information on GDS pertains to 21 main (EPC) packages. Details of remaining smaller works were not furnished by department

(Source : Data furnished by I&CAD Department)

As can be seen from above table, out of 87 modernization works whose agreement period was over, only 4 works were completed (March 2013).

Audit noticed that delays in remaining 83 works ranged from five to 46 months from original target date of completion.

- Though target date of completion was over in all agreements of TBPHLC, TBPLLC and PDS, only two works in TBPLLC were completed.
- In Nizamsagar project, even though agreement period of 14 agreements was over, only one work (substantial portion of work was deleted from scope of this contract) was completed.

Government attributed delays to inadequate working period, due to extended period of water regulation and stagnation of water in canal prism. These issues should have been taken into account at planning stage itself.

3.3.10 Impact of non-completion of Krishna Delta System (KDS) on Krishna Basin projects

Modernization of KDS envisaged saving of about 29 TMC of water, out of which 20 TMC was proposed to be allocated for the Rajiv Bhima Lift Irrigation Scheme (RBLIS) and remaining 9 TMC was allocated for Dr. K.L. Rao Sagar (Pulichintala) project.

It was noticed that though Pulichintala and RBLIS projects were taken up in 2004 and 2005 respectively and are in advanced stage of execution, modernization works of KDS were taken up only in 2008 and progress was only 23.42 *per cent* (March 2013). Besides, 12 works have not yet been entrusted.

Till completion of modernization of KDS, water needs of RBLIS and Pulichintala projects were proposed to be met by curtailing demands from other projects in Krishna Basin. Thus, delay in taking up and completing KDS works would have an adverse impact on availability of water for RBLIS and Pulichintala/put strain on other projects in Krishna Basin.

Government replied that all efforts were being made to accelerate progress of KDS modernization and achieve the contemplated savings of water.

3.3.11 Encroachments

Work of modernization of PDS package 35, comprising two canals viz., Survepalli canal and Krishnapatnam canal was entrusted to a firm in April 2008. The work involved cement concrete paving lining to bed and side slopes. However, Surveypally canal (km 0.600 to km 5.600) and Krishnapatnam canal (km 0.000 to km 2.000) were encroached in Nellore town limits. As a result, work could not be taken up in Nellore town limits despite completion (April 2010) of agreement periods.

Audit observed that based on suggestions from the public representatives, department proposed (March 2012) construction of retaining walls instead of cement concrete lining on side slopes in these places.

Government replied that modernization works in above canals were taken up anticipating that encroachments would be cleared during execution but this could not be done due to legal complications. It was further replied that to avoid delay in contract and as there were no prospects of clearing encroachments in near future, proposals for construction of retaining walls are contemplated.

This not only indicates lack of monitoring by department in safeguarding canal banks from encroachments but also improper planning and entrustment of packages without ensuring hindrance free site.

3.3.12 Infertuous expenditure on Nizamsagar main canal

Under Jalayagnam programme, Government took up a new lift irrigation scheme viz., Dr. B.R. Ambedkar Pranahita Chevella Sujala Sravanthi (PCSS) and entrusted (November 2008) package nos. 20 and 21 under EPC turnkey mode. After detailed survey and investigations in respect of PCSS project by EPC agencies, department proposed (February 2010) to utilize two reaches³⁶ of the main canal of Nizamsagar project as a common carrier for both projects, to avoid running parallel canals of PCSS and Nizamsagar adjacently. This necessitated widening and deepening of Nizamsagar main canal to increase its carrying capacity from 40 cumecs to 110 cumecs.

Modernization works in above mentioned reaches of Nizamsagar main canal (Package nos. 10, 11 and 12) were, however, already entrusted (in January 2009). As widening work of Nizamsagar main canal was proposed to be taken up under PCSS packages, common reaches were required to be deleted from three modernization packages. Audit observed that department deleted works valuing ₹26.33 crore from the scope of package-11, but no such deletions were effected in package nos. 10 and 12.

Audit also noticed that proposal to share main canal of Nizamsagar with PCSS came up during a joint inspection (February 2010) conducted by CE, Central Designs Organization with Commissioner, Godavari Basin. However, department allowed the contractor of package-11 to execute (November 2011) further work (embankment with borrowed soils for a quantity 1.56 lakh cum³⁷) in common canal reaches and paid ₹2.92 crore for this work. Since widening of canal in these reaches would require removal of embankments, expenditure incurred on embankment in these reaches was infertuous.

³⁶ from km 93.50 to km 102.375 and from km 104.925 to km 118.205

³⁷ Left side : from km 100.000 to km 100.800, km 101.525 to km 101.775, km 105.200 to km 108.200, km 108.250 to km 109.075, km 109.175 to 110.00, Right side: km 105.200 to km 106.300, km 106.375 to km 108.200, km 108.250 to km 109.075, km 109.175 to km 110.00

Government replied that deletion proposals in respect of package nos. 10 and 12 were under process. It was further replied that only accumulated earth in the canal was removed and main component of works were not taken up after joint inspection.

However, Measurement Books of package-11 showed that embankment work valuing ₹2.92 crore was executed (Date of recording measurements: 7 November 2011 and check-measured on 9 November 2011) more than one and a half year after joint inspection.

3.3.13 Conclusion

Modernization works were taken up without proper planning and without ensuring practical execution for timely achievement of intended objectives. A large number of works were entrusted to single bidders at tender premium. There were deficiencies in bid evaluations. Progress of works was poor resulting in non-completion of projects. Existence of encroachments along canals and Government's inability to clear them also hampered works in some projects. Taking up widening of Tungabhadra Project High Level Canal on one side of border without reaching agreement for widening of the canal on other side led to doubtful utility of expenditure already incurred. Due to delayed taking up of modernization of Krishna Delta System and its non-completion, objective of saving 20 TMC of water, intended to be provided to Rajiv Bhima Lift Irrigation Scheme, could not be achieved.

3.3.14 Recommendations

- ***Government should ensure that DPRs, based on scientific studies, are invariably prepared for every modernization project.***
- ***Government should frame suitable guidelines to assess and pre-determine the canal closure period on a realistic basis and ensure that sufficient working period is provided for timely completion of modernization works.***
- ***Government should speed up land acquisition and clearance of encroachments in all ongoing modernization projects to facilitate their early completion and achievement of intended objectives.***
- ***Government should review reasons for low competition in tendering for modernization works and take suitable remedial measures to improve competition to ensure timeliness and economy in award of works.***

3.4 Flood Banks

3.4.1 Introduction

Government of Andhra Pradesh (GoAP) took up restoration of existing flood banks³⁸ on five rivers³⁹ and formation of two new flood banks⁴⁰ in order to minimize damage to human lives, property and crops and have safe disposal of flood waters. During January 2007 to July 2008, 1322.34 kilometres (km) of Flood Bank works at a cost of ₹2312.77 crore were taken up (details in *Appendix-3.5*).

3.4.2 Scope of Audit

Audit was conducted during October-December 2012 in offices of Engineer-in-Chief / Chief Engineers (5), Circles (7) and Divisions (14). Out of 85 packages proposed under flood banks, 66 were awarded (during June 2007 – September 2011) out of which 39 packages were test checked in audit with a view to ascertain whether (i) Flood Bank works were taken with proper planning, (ii) pre-requisites were completed before entrustment, and (iii) works were executed as planned and intended objectives achieved. Audit findings are as follows:

Audit findings

3.4.3 Non-availing of Central assistance

GoAP submitted (December 2006) proposals to GoI seeking financial assistance under the Centrally sponsored scheme 'Flood Management Programme' for taking up flood bank works on Godavari, Vamsadhara and Nagavali rivers.

After scrutinizing proposals in respect of Godavari flood banks, Central Water Commission (CWC) requested (February 2007) GoAP to recalculate Benefit Cost Ratios (BCRs) duly considering the difference between value of average annual flood damages (based on data of last ten years obtainable from Revenue Department) and average annual damage anticipated after execution of flood bank works. However, preparation and submission of revised BCR as sought by CWC was not on record. In respect of flood banks of Vamsadhara and Nagavali rivers also, GoAP did not furnish replies to remarks (February 2007) of CWC as of January 2014. As a result, GoAP could not avail central assistance of ₹844.35 crore⁴¹.

On Godavari flood banks, department replied (August 2013) that proposals were being submitted for central assistance in 12th Plan (2012-17). Department had not furnished any reply on other projects.

³⁸ the bund like formation on river bank to prevent river water from entering the adjacent areas

³⁹ Godavari, Krishna, Pennar, Vamsadhara and Nagavali

⁴⁰ on Kundu and Handri rivers in Kurnool district

⁴¹ GoI share of 75 *per cent* on (i) ₹815.07 crore for raising and formation of flood banks on Godavari; and (ii) ₹310.73 crore for standardisation of flood banks of Vamsadhara and Nagavali

3.4.4 Assessment of necessity of works

Audit noticed improper assessment of scope of works in following cases:

(i) A flood bank protection work (estimated value: ₹51.65 crore⁴²) was proposed and entrusted (September 2009) on Kandaleru right branch canal in Nellore district, presuming discharge of branch canal as 45000 cusecs. After more than two years, department proposed to close the contract as it was found that Kandaleru branch canal was only a supply channel carrying a small discharge of 450 cusecs and did not require any flood bank protection work. This shows that flood bank works were taken up without proper investigations/ studies initially.

(ii) In respect of Vamsadhara Flood Bank (VFB), GoAP accorded a second administrative approval (May 2008) for a portion of work⁴³ for ₹18.50 crore on the ground that it was not included in the original administrative approval (January 2007). However, later, it cancelled (October 2011) the second administrative approval based on information (February 2009) from Chief Engineer, North Coast that the same was, in fact, already covered in VFB-1 package taken up under original administrative approval. This indicates that proposals were not scrutinized properly before approaching Government.

(iii) The item formation of gravel path and subsidiary works were included in both the Flood Bank Package⁴⁴ as well as the Modernization package⁴⁵ of Krishna Delta System. Chief Engineer (KDS) instructed (October 2012) Superintending Engineer, Irrigation Circle, Vijayawada to delete the item from either of the projects. However, records of implementation of these instructions were not found in audit (July 2013).

3.4.5 Non-entrustment of works

Once actual need for taking up flood bank work is established and prioritized, works should be entrusted without delay in order to avoid further damage.

Department invited (during July to December 2008) bids for 12 packages of Pennar Flood bank (PFB) three times. In first call, single bids were received for seven packages and there was no response for remaining five packages. Government ordered for cancellation of tenders for all works and when tenders were invited for second and third times, no bids were received. Subsequently, Government permitted (August 2009) to club 12 packages into two packages. However, works were not entrusted even after that (as of June 2013).

Similarly, there was no response to packages (Nos. 2 to 6) of Swarnamukhi Flood Bank (SFB) despite calling for tenders four times. Government permitted (August 2009) to club all 5 packages into a single package. Though estimate was recast (February 2011), works were not yet entrusted (June 2013).

⁴² Package-1 : ₹25.47 crore and Package-2: ₹26.18 crore

⁴³ formation of flood banks from Kaduma village to Rugada village of Kothuru mandal in Srikakulam district

⁴⁴ KFB -3 from km 65.000 to km 85.400

⁴⁵ No.24 of Krishna Western Bank canal from km 45.200 to km 86.600

Audit observed that though there are existing Government instructions (November 1970) that in case of low competition, work should be entrusted either on nomination basis not exceeding estimate rates or by splitting works into smaller works and inviting fresh tenders, department did not explore these options. Instead of splitting the works department clubbed them into larger packages, which restricts the competition. Due to non-entrustment of these works, intended objective of providing protection from floods was not achieved.

3.4.6 Progress of works

Though all 66 entrusted flood bank works were to be completed by December 2012 as per original agreements, only 18 (10 out of 40 test checked packages) were completed as of March 2013 (status of completion is indicated in *Appendix-3.6*). Delays in completion of packages were on account of delay in land acquisition, non-finalization of designs, non-eviction of encroachments and non-shifting of utilities like electrical and telephone lines.

Thus, main objective of Government of providing strong and reliable protection from submergence and inundation with flood waters was not achieved despite incurring expenditure of ₹927.53 crore during past five years on various flood bank projects. It is pertinent to note that Government initially intended (August 2006) to complete protection works of Godavari, Krishna, Vamsadhara and Nagavali before next flood season. Audit could not assess continued loss due to non-completion of flood bank works as department had not furnished any data on losses occurred due to floods during last five years.

3.4.7 Non-finalization of designs

In the agreements relating to VFB-1, VFB-2 and VFB-3 packages of Vamsadhara flood banks, department specified the observed maximum flood level (OMFL) to be considered by the contractors for designing the flood bank works. However, after award of works a question arose as to whether the OMFL as specified in agreements should be adopted or OMFL of 1980 floods. While department could not take a decision on the issue, contracting agencies of these three packages stopped works since June 2010, March 2011 and July 2010 respectively, citing ambiguity in OMFL.

Meanwhile, eight villages⁴⁶ under VFB-3 package suffered (August 2010) floods. Department requested (October 2010) contractor for rectification of Groynes and other structures for which contractor sought (March 2011) clarification on OMFL. Government constituted (September 2011) a committee to decide on the issue of OMFL. No decision had been taken on the issue (March 2013).

Thus, due to indecision on OMFL, above VFB packages were not completed after incurring an expenditure of ₹5.93 crore⁴⁷ and intended objective not achieved.

⁴⁶ Bhyri village of Srikakulam Mandal and Gara, Arangipeta, Kallivanipeta, Jogupanthulupeta, Buravalli, Vomaravalli, Salihundam of Gara Mandal

⁴⁷ VFB-1: ₹3.85 crore; VFB-2 : ₹1.03 crore; and VFB-3: ₹1.05 crore

3.4.8 Land Acquisition

Main reason for non-completion of projects was non-acquisition of land. As against total requirement of 4732.78 acres of land for all flood bank projects, department could acquire only 774.5 acres (16.36 *per cent*) as of March 2013, leaving a balance of 3958.28 acre still to be acquired, despite completion of agreement period in all projects. The situation was similar in conventional unit price contract packages⁴⁸ as well as in respect of Engineering, Procurement and Construction (EPC) packages⁴⁹. Flood bank wise position of land acquisition is detailed in *Appendix-3.7*. Audit observations are as under:

(a) Kundu flood bank protection works for reach-II were entrusted in March 2009. The amount (₹22 crore) for land acquisition was deposited with Revenue Divisional Officer (RDO) Nandyal in May 2012 i.e., only after completion of agreement period (March 2011) due to non-provision of funds. Government accepted (December 2012) the request of contracting agency for cancellation of agreement. The work was not re-entrusted so far (June 2013).

(b) In respect of Maddileru (Package-III) and Chamakalva (Package-I), department initially decided, before tendering, that works were to be taken up in existing river course and hence issue of land acquisition does not arise. Works entrusted (October 2008) were to be completed within 24 months i.e., by October 2010. However, department later found that 42.12 and 65.27 acres respectively were required for two packages. While department could complete (in 2013) land acquisition in Maddileru package only after more than two years after completion of agreement period, an extent of 10.04 acres was still to be acquired in Chamakalva package as of January 2014. Value of work done in these packages was ₹7.77 crore (53.04 *per cent*) out of ₹14.65 crore and ₹3.3 crore (16.13 *per cent*) out of ₹20.46 crore, respectively. Thus, initial incorrect assessment of land requirement led to delay in completion of these two packages.

In respect of Godavari Flood Banks, department replied that due to resistance by occupants and litigations, there was delay in LA process which were unavoidable and inevitable inspite of coordination with revenue authorities and with encroachers. Department did not furnish reply on other issues. Government had earlier issued orders (July 2003) to the effect that works should be entrusted only after ensuring pre-requisites so as to ensure uninterrupted progress of works. However, department in 33 cases failed to fully acquire and hand over hindrance free land to contractors (in 13 cases, land acquisition was nil) even after expiry of agreement period.

3.4.9 Non-completion in small gap portions

Audit noticed that in certain packages of Godavari Flood Banks (GFB) small gap portions were not completed (April 2013) as detailed in table below:

⁴⁸ Under conventional unit price contract system the department takes total responsibility for identifying the lands required for works, acquiring lands and handing over the same to contractor firms

⁴⁹ Under EPC system, contractor proposes alignment and submits land plans after conducting detailed survey and investigations. The responsibility of acquiring land and handing over the same to contractor for execution of works rests with department

Table-3.8 – Details of unattended gap portions in Godavari flood banks

Sl. No.	Package / Work	Reach (from Km - to Km)	Total length of reach (in Km)	Reaches left unattended (from Km - to Km)	Total length unattended (in Km)	Reason
1	Vasista Right Bank	0.000 to 23.000	23.00	0.925 to 1.350	0.425	Encroachments
2	Vasista Right Bank	68.000 to 90.200	22.20	70.700 to 71.100 and 74.500 to 75.000	0.900	Houses and Electric Poles
3	Vynatheya Left Bank	0.000 to 28.500	28.50	0.000 to 0.225	0.225	Land Acquisition
4	Package-1 (Warangal)	In 6 village limits	25.50	1.375 to 2.300	0.925	Land Acquisition
5	Gowtami Left Bank	20.000 to 40.000	20.00	28.900 to 29.100 and 31.000 to 31.200	0.400	Land Acquisition & Electrical Poles
6	Vasista Right Bank	45.500 to 55.000	9.50	51.025 to 51.350; 52.650 to 52.850; and 53.150 to 53.425	0.800	Houses and Electrical Poles

(Source : Information as per departmental records)

Audit observed that leaving small gaps in works that were almost complete could prove risky during rains / flood and cause damage to portions already executed. Despite spending ₹129.63 crore on the above GFB works, contingent risk to lives and public property still exists.

Department accepted that some gaps were pending due to land acquisition, non-completion of shifting of electric poles, etc.

3.4.10 Treating works mentioned in basic parameters as additional items

Basic project parameters of Package-11⁵⁰ of Godavari Flood Banks (GFB), entrusted (November 2007) to a contractor for ₹34.07 crore under EPC turnkey system⁵¹ stipulated, *inter-alia*, construction of protection walls wherever necessary as per site conditions. System requirements and conditions of basic project parameters also stipulated that all protection works should be executed as per specifications and no extra payment would be made to bidder. However, Audit observed that department proposed two protection works⁵² treating them as additional items. The State Level Standing Committee agreed (October 2008) for entrustment of above works as additional items of work. Accordingly, based on Government orders (June 2009) a supplemental agreement was concluded (July 2009) for ₹4.78 crore with EPC agency. This resulted in avoidable additional financial burden on Government.

⁵⁰ Raising and widening of AGLB to 1986 flood standards from km 0.00 to km 32.00 and AGRB from km 0.00 to 3.025 (new formation) and in between km 0.00 to 40.200 and to protect the neckless bund in Polavaram between km 37.400 to km 40.120 including BT Road, protection works and reconstruction / remodeling of existing structures

⁵¹ Under EPC turnkey system, the contractor has to execute the entire work as defined in the basic project parameters in the agreement including all ancillary and incidental items of work and deliver the project in complete shape to the department

⁵² (a) Construction of retaining wall from km 1.200 to 1.600 on AGRB at Vadapalli village limits and (b) Construction of retaining wall from km 19.100 to 19.300 on AGLB at Bobbilanka village limits

3.4.11 Conclusion

There were instances of taking up flood bank works without proper assessment of need and planning. Department could not avail central assistance for Godavari, Vamsadhara and Nagavali Flood Bank works. Forty eight out of 66 flood bank packages were not completed due to delay in land acquisition, non-finalization of designs, non-eviction of encroachments, non-shifting of utilities, etc. Thus, main objective of providing strong and reliable protection from submergence and inundation with flood waters had not been achieved despite incurring an expenditure of ₹927.53 crore on these projects.

3.4.12 Recommendations

- *Government should ensure that flood bank works are taken up with proper planning and accurate assessment of requirements including designs.*
- *After identification of the need for flood banks, department should facilitate identification of lands, their acquisition, completion of works as per schedules to ensure achievement of objective of safety of people and assets in adjacent areas.*

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