

Accountable Government Workstream

Study on Accountability in Public Works

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In the present Good Governance scenario, we are witnessing an increasing concern for accountability, transparency, responsiveness and stakeholder interventions in public administration. Public Works constitute a major activity of the Government both in terms of huge outlays and additions to infrastructure. This calls for a total application of tools of transparency, accountability and public participation through a holistic process in the departments concerned with public works in the Government of Andhra Pradesh.

The present study on “**Accountability in Public Works**” undertaken by the Centre for Good Governance (CGG) unfolds these key concerns. We are thankful to Sri R. Kondal Rao, Engineer-in-Chief (Retd.), Government of Andhra Pradesh, who was the Lead Consultant for the study and Sri G. Rama Naidu, Joint Secretary (Retd.), Panchayat Raj Dept., Government of Andhra Pradesh and Sri A. H. Phalguna Rao, Superintending Engineer (Retd.), I&CAD Department, who conducted the study. We are thankful to Sri J. Rambabu, IAS (Retd.), who provided many insights into the subject during discussions held with him. We express our sincere thanks to the members of the Experts Committee, who reviewed the findings of the study at various stages and provided additional inputs drawn from their experience and expertise. We are also thankful to Dr. C. S. Rangachari, IAS (Retd.), Workstream Leader, Responsive Governance, CGG, who contributed to the study by way of additional inputs through a presentation made to Sri N. Vittal, IAS (Retd.), Chairman, Commission on People’s Empowerment (CoPE), at the first workshop conducted by this study team. We thank the Principal Secretaries, Heads of Departments, Engineers and all others who assisted the team during the study by providing information and suggestions.

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Hyderabad
10th January, 2004.

VASANTH KUMAR PARIGI
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ABBREVIATIONS

AEE	–	Assistant Executive Engineer
BT	–	Black Top
CE	–	Chief Engineer
CGG	–	Centre for Good Governance
COT	–	Commissionerate of Tenders
DAO	–	Divisional Accounts Officer
Dy. EE	–	Deputy Executive Engineer
EE	–	Executive Engineer
ECC	–	Engineering Civil Construction
E-in-C	–	Engineer-in-Chief
GoAP	–	Government of Andhra Pradesh
HIG	–	High Income Group
HRD	–	Human Resource Development
I&CAD	–	Irrigation and Command Area Development
IIM	–	Indian Institute of Management
ITDA	–	Integrated Tribal Development Agency
JE	–	Junior Engineer
JNTU	–	Jawaharlal Nehru Technological University
L&T	–	Larsen & Toubro
LOC	–	Letter of Credit
P.R	–	Panchayat Raj
PAO	–	Pay and Accounts Officer
PRED	–	Panchayat Raj Engineering Department
PRIs	–	Panchayat Raj Institutions
PWD	–	Public Works Department
RWS	–	Rural Water Supply
S.E	–	Superintending Engineer
SMART	–	Simple, Moral, Accountable, Responsive, Transparent
SO	–	Section Officer (AEE or AE)
SSR	–	Standard Schedule of Rates
T, R&B	–	Transport, Roads and Buildings
V&E	–	Vigilance and Enforcement
V&QC	–	Vigilance and Quality Control

SECTION 1: EXECUTIVE SUMMARY

A. Introduction

1. Public expenditure has played a vital role in the development of Andhra Pradesh over the years. Heavy investments have been made for the provision of social and physical infrastructure in the State and these have contributed to the development of the State.

A number of major roads and buildings, laying of 1,14,052 kilometers of State highways, village roads, bye passes, new office buildings, irrigation projects and housing have been undertaken by the Government of Andhra Pradesh.

2. While the need for public expenditure in public works is realised, the emphasis on good governance has shifted the focus on public expenditure from expenditure per se to transparency, accountability and stakeholder consultation.
3. With this background the Centre for Good Governance (CGG) conducted a study to look into the mechanisms to enhance accountability, transparency and citizen interface in the functioning of the Engineering Departments in the State undertaking public works.
4. The methodology adopted for this study include:
 - a) Discussions with the officers at various levels from the different unit offices of the departments;
 - b) Site visits to selected project sites;
 - c) Regional Workshops at Tirupathi, Visakhapatnam, Vijayawada and Hyderabad to elicit views from the field staff;
 - d) Constituting an expert committee of specialists, academicians, retired engineers and leading private sector executives from the construction industry;
 - e) A structured open questionnaire was given to the participants of the Regional Workshops to assess the attitude, commitment, involvement and identification of issues which help or hinder their effective performance as engineers;

- f) Visits were made to the neighbouring states of Tamil Nadu and Karnataka to obtain an overall view of current perceptions and policies relevant to the study undertaken by CGG.

5. The key deliverables of this study are

- a. Specific strategies and tools for the engineering departments for accountability, transparency, public feedback and stakeholder consultation.
- b. Activities that could be outsourced for improving quality and performance of the engineering departments.
- c. General recommendations for improving public service delivery.

6. Findings and Comments

- a. There is a need for convergence among the different departments engaged in public works to bring in uniformity in tendering processes, procedures, systems and quality control.
- b. Through convergence, synergy can be achieved which will lead to economy and efficiency in the departments. It is suggested that a coordination committee of the heads of all the engineering departments which will meet once in a quarter be formed for achieving convergence in the areas of common interest.
- c. The present 'D' code and other codes are inconsistent with the current construction practices and therefore need revision. A committee of experts may be appointed to bring out a revised 'D' code. The same committee may be entrusted with the preparation of engineering manuals for daily reference and use by field staff.

- 7. While the G.O. No. 94 dated 1-7-2003 of I&CAD Department has laid out a clear procedure in the areas of tenders, preparation of estimates and other systems and procedures, these are not being strictly followed in several of the departments undertaking public works as was observed by the team. It is recommended that a legislation called "Transparency in Procurement Act" may be passed in Andhra Pradesh also as has been done in other states. A legislation of this kind provides for imprisonment up to two years to the Public Servants acting in violation of the act.

A draft of the legislation on public procurement prepared by CGG has been given to the government for approval by the Cabinet Sub Committee of the Government.

8. As a rule, the goals of transparency and accountability are achieved only through a two pronged strategy of external and internal mechanisms. The external mechanisms which should simultaneously be put in place along with the internal systems have been listed in the recommendations in page 29 to 31. The departments need to prepare action plans based on these recommendations.

For improving the performance and also construction standards and quality, it is recommended that the work relating to estimates may be outsourced and an expert committee with representatives both from the Government and outside be constituted for fixing rates under the Standard Schedules of Rates.

9. For major projects it is necessary to decide to outsource the investigation survey and estimation along with execution of the project for better accountability.
10. To improve the architectural beauty of the buildings, better utilisation of space and planning and also landscaping, there is a need for the engineering departments to form a panel of architects for advice in these areas.
11. To ensure objectivity and to avoid multiple authorities in the area of quality certification, it is suggested that an independent quality control and certification authority be set up with its own cadre of staff or alternatively this work may be given to reputed academic institutions/consulting firms.

12. **Training**

- a. From the response of the field staff at the Regional Workshops, it is observed that the engineers are unanimous in the opinion that they lack training, latest knowledge about the development in their field and skills which come along with such knowledge. This is an area of utmost importance for improving the performance efficiency and quality of work by the engineering departments and therefore should

be addressed with a sense of urgency. An aggressive campaign on training of field engineers on priority should be undertaken by the departments. The contents for such a training programme are found in our recommendations in the section on training.

- b. Accountability of engineers and other staff are rendered possible through Job Charts and clarity in their role. This work may be entrusted to a Committee to be constituted by the Heads of Departments.
- c. A HRD unit with a senior engineer should be constituted in each engineering department for developing specialised skills needed for the department and for identification of training needs.
- d. The staff qualification and skill data should be computerised and a ready list of staff who have acquired additional qualification and skills during their service should be entered in these computerised records so that online data is available for using their services and special skills.

13. Procedural delays in the processing of tenders should not affect public works.

To answer this problem, we suggest the use of information technology and software development for tracking of the tender processes and works. The Strategy Planning and Innovation Unit (SPIU) of the I&CAD department, GoAP, which is functioning in the CGG is currently looking into this area and is developing a software which can be used by all the engineering departments. The Karnataka Police Housing Corporation has developed a software package of this nature for the tracking of works.

14. Maintenance manuals should be prepared which will deal with maintenance policy and transparent procedures for establishing priority in the maintenance of works based on the age of the work and need. Maintenance of all public works may be outsourced for better efficiency and saving costs.

The tender conditions are to be modified to include a minimum of three years' maintenance after the defect liability period of two years.

Political influences and political interferences in the management of public works were frequently raised by all the departments as a major hurdle

adversely affecting the performance, progress, efficiency, quality of works and morale of the staff of the engineering departments. This is a major area of concern. We concur with this view and strongly recommend that a code of conduct should be developed by the political parties. An initiative in this regard may be taken up by the government.

15. Projects should be taken up only if funding is ensured. Whenever there is a demand from the elected representative or other local parties for preparation of estimates by the engineers, the cost for preparing such estimates may be fixed and collected from them as user charges.
16. The first workshop conducted by CGG to identify the issues and approaches of the study coincided with the presence of Mr. N. Vittal, IAS (Retd.), former Chief Vigilance Commissioner of GoI and presently Chairman, Committee on People's Empowerment (CoPE), set up by GoAP to advise the Government, among other things, "on control of corruption and service delivery, fixation of accountability norms, and transparent and corruption free administration to the people", was present in the workshop to collect views of the participants on these issues. The issues which were placed before Mr. N. Vittal and corrective steps required to be taken by the Government are separately given in the report as an addendum. The solutions which were suggested in the workshop are now found to be in conformity with the recommendations made in our study.
17. The need for a sea change in the organisational culture of the Engineering Departments through change in the work culture, team spirit, service orientation and commitment to the community through a new set of practices and behavioural change was raised by the engineers who participated in the regional workshops.

This is a priority area to be addressed by the Government. We suggest that a suitable training module may be developed in the first instant for the recruited Engineers in the Departments. CGG can prepare a suitable module for this purpose in consultation with the Heads of the Departments.

SECTION 2: BACKGROUND

Public Works constitute a major part of expenditure and several departments of the Government of Andhra Pradesh (GoAP) are involved in executing public works. About four decades ago, the Public Works Department (PWD) used to be the single agency for the execution of public works. However, with the emergence of the Panchayat Raj Institutions (PRIs) and increased outlays on Housing, Rural Development and Welfare Sectors in the annual plans of the State and Central Governments, Public Works are being carried on an extensive scale by the departments such as Irrigation and Command Area Development, Panchayat Raj, Public Health, Roads and Buildings, Tribal Welfare, Housing and other Corporations. After the 73rd and 74th amendments to the constitution, decentralisation has taken place in the PRIs and local bodies in Andhra Pradesh. The GoAP has recently taken a policy decision to transfer a number of additional functions to the Zilla Parishads, Mandal Parishads and Gram Panchayats, as well as other local bodies. In this new set up, the PRIs and the local bodies will play a major role in the execution of public works. It is estimated that Public Works to the extent of about Rupees Six Thousand crores are being executed as of now by various departments in Andhra Pradesh.

In keeping with the Vision 2020 objectives and the general trend towards greater Accountability and Transparency in the working of the Government and the public bodies, a need has arisen to take an overview of the efficacy of the present administrative procedures and systems to achieve the goals of transparency, accountability and quality assurance to the tax payer, whose monies are being spent by the government. A critical analysis of the present practices and application of widely accepted methods for transparency and accountability will help in preparing a road map on Transparency in Public Works for implementation by the various Departments and Corporations engaged in public works in the State.

SECTION 3: INTRODUCTION

The Centre for Good Governance was established by GoAP in October 2001 to help it achieve the goal of transforming Government in accordance with Vision 2020. CGG coordinates and supports the designing and implementation of GoAP's Governance Reform Programme. CGG undertakes action research, provides professional advice to, and conducts change management programmes for government departments and agencies to help them implement their reform agenda successfully. CGG works closely with policy makers like ministers, officials, experts and other stakeholders, especially citizens, to promote Simple, Moral, Accountable, Responsive and Transparent (SMART) government.

In the work plan prepared by the CGG for the year 2003-04, "Transparency in Public Works" was identified as an important area of study under the "**Accountable Government**" Workstream of the CGG. The 'terms of reference' for the project was to develop an implementable plan for the engineering departments which would result in greater transparency, accountability and quality assurance.

A study was taken up from August to December 2003, with Mr. R. Kondal Rao, Engineer-in-Chief (Retd.), Panchayat Raj Engineering Department, GoAP, as a Lead Consultant and with Mr. G. Rama Naidu, Chief Engineer (Retd.), Panchayat Raj Engineering Department and Mr. A. H. Phalguna Rao, Superintending Engineer (Retd.), I&CAD Department as full time consultants. With a view to benefit from the rich experience of professionals, academicians of repute and leading senior executives of well-known private sector construction firms and serving government officials, an 'Experts Committee' was constituted to identify the issues and review the work done by the Consultants from time to time and to offer comments and additional inputs for the study.

The following were the members of the Experts Committee:

1. Prof. V. S. Raju, Former Director, IIT, Delhi; Professor, IIT, Chennai; and Member, Telecom Regulatory Authority of India.
2. Mr. G. Krishna Murthy, Chief Engineer, Panchayat Raj (NABARD), GoAP.
3. Dr. N. V. Ramana Rao, Director, BICARD and Professor of Civil Engineering, JNTU, Hyderabad.
4. Mr. K. U. Warriar, Regional Manager, L&T Limited, Hyderabad.
5. Mr. R. Kondal Rao, Engineer-in-Chief (Retd.), Panchayat Raj Department, GoAP.
6. Mr. G. Narayana Reddy, Chief Engineer (Retd.), Panchayat Raj, Department, GoAP.

Mr. V.K.Parigi, Workstream Leader, Accountable Government, CGG coordinated the study and prepared the final report from the inputs received from the consultants.

SECTION 4: OBJECTIVES OF THE STUDY

- To review the existing procedures involved in public works and to assess the existing level of accountability in the conduct of such works;
- To identify gaps in accountability mechanisms and suggest measures to fill these gaps;
- Review and assess the existing procedures involved in the conduct of public works through:
 - Mapping of the project delivery process for specific projects undertaken by different departments;
 - Technical aspects: whether project deliverables/assets created match technical specifications agreed to at design phase; and
 - Feasibility of certification of public works by a third party/user group/independent body.

SECTION 5: STUDY APPROACH

- a. The team had detailed interactions with Sri J. Rambabu, IAS, Special Chief Secretary, T, (R&B), for an overview on the issues involved in the area of transparency and accountability in public works and the prevailing practices which need a review. The team received valuable inputs for the study from Sri J. Rambabu.
- b. The team developed the following approach to the study.
 1. Conducting workshops with academics, heads of departments, and outside experts.
 2. Interaction with officials and engineers of the Engineering Departments in A.P. dealing with public works.
 3. Forming an Experts Committee for a review of the study at various stages.
 4. Interaction with officials, engineers and contractors in the neighbouring states of Karnataka and Tamil Nadu.
 5. To take up case studies of medium projects completed by different Engineering Departments in A.P.
 6. To organise regional workshops in the three regions of Andhra Pradesh with the engineers of different departments dealing with public works.

In tune with this plan, the following activities were undertaken.

DISCUSSIONS

A. Discussions with officials and engineers of the following departments in GoAP:

- i. Irrigation and Command Area Development Department
- ii. Transport, Roads and Buildings Department
- iii. Panchayat Raj Engineering Department
- iv. Andhra Pradesh Housing Board

B. Workshop

A workshop was conducted with professors from the engineering colleges, heads of engineering departments and other professionals on 17-9-2003. An Experts Committee was formed during this workshop to guide the team and also to provide the required inputs for the study and to review the recommendations of the study.

The Committee met on 22-9-2003, 7-10-2003 and 22-12-2003 and discussed the vital issues and finalised the recommendations.

C. Interactions

- a. Interaction with Officers of the Public Works Department (PWD) of Government of Tamil Nadu in Chennai.
- b. Interaction with contractors executing public works in Tamil Nadu.
- c. Meeting with engineers of the Karnataka Government.
- d. Interaction with contractors executing public works in Bangalore.
- e. Consultation with senior staff of the Engineering Staff College, Hyderabad.

D. Visits to Selected Projects Completed in Andhra Pradesh

The following case studies were made:

- i. B.T. Road in Annaram Mandal of Nalgonda Dist., Executed by P.R. Engineering Department.
- ii. H.I.G. Independent Houses, Phase IV&V, Kukatpally, constructed by A.P. Housing Board.
- iii. Annamayya Reservoir Project, Cuddapah Dist., executed by I&CAD Department.
- iv. Comprehensive water supply project at Jaggaiahpet, Krishna Dist., executed by P.R. (RWS) Department.
- v. People's Estimate, Construction of Community Hall in Vetlapalem Village, Samarlakot Mandal, East Godawari Dist. Constructed by P.R. Engineering Department.
- vi. Improvement to Vakalapadu, Edatum Road, East Godawari Dist.
- vii. Check Dams in Paderu, proposed by ITDA, in Visakhapatnam District.

E. Regional Workshops

Regional Workshops were conducted with Engineers of I&CAD, PRED, RWS, R&B at Visakhapatnam, Vijayawada, Tirupati and Hyderabad in November 2003. Around 250 participants representing all cadres from AEE/AEs to SEs participated in these four workshops.

SECTION 6: FINDINGS OF THE STUDY

6.01 VISIT TO TAMIL NADU

It was observed that the tendering process in Andhra Pradesh was more transparent when compared to Tamil Nadu. In Tamil Nadu, through an informal process, the contractors have been told to restrict their bid to 5% over the estimated rates. Through fixation of high cost for tender schedule, the number of contractors quoting for the tenders is restricted to those who are genuinely interested to undertake the works. The following are the costs of tender schedules in Tamil Nadu.

	<u>Cost of Tender Schedule</u>
a. Work Costing between Rs. 10 to 25 Lakhs	Rs. 10,000
b. Work Costing between Rs. 25 to 50 Lakhs	Rs. 20,000
c. Work Costing as over Rs. 50 Lakhs	Rs. 50,000

The Tamil Nadu Government has passed a Law on Transparency in Procurement. The quality control work is done by the concerned departments, and there are no independent third party checks on quality of works. The team did not find anything significant to report as a best practice from Tamil Nadu in the area of transparency and accountability. The conventional rules and procedures are being followed.

6.02 VISIT TO KARNATAKA

In Karnataka, it was observed that several public works were being executed through corporations specifically formed by the Government for executing public works. The State has passed the Right to Information Act and also the Transparency in Procurement Act. The Government officials who were interviewed by the team said that these two enactments have improved transparency in the tender process.

The quality inspection work is being done through internal checks by the departments concerned in Karnataka. The Government is looking for grading of contractors as a measure towards quality improvement and timely completion in public works. The Government is examining the possibility of third party inspections in the quality control of public works.

6.03 CASE STUDIES IN A.P.

The observations of the team on the detailed analysis of the projects taken up for scrutiny are given in Appendix 6. Only the vital issues are summarised below:

- a. There was a considerable delay of 54 days between the opening of tenders and submission to tender committee in the works relating to B. T. Road in Annaram Mandalam of Nalgonda District Executed by P. R. Engineering Department. Also, a delay of 62 days was noticed between the date of approval of tenders and signing of tenders.
- b. The visit to the project of the Andhra Pradesh Housing Board, HIG Independent Houses, Phase IV & V at Kukatpally, Hyderabad brought out the following delays in the tendering process:

	<u>Phase IV</u>	<u>Phase V</u>
i. Receipt of Tenders and Submitting to Govt.	5 Months	2 Months
ii. Tenders submitted to Govt. and approved by the Govt.	4 Months	1.5 Months
iii. Acceptance of Tenders and concluding Agreement	2.5 Months	2 Months
iv. Concluding the Agreement and starting the work.	4 Months	Immediate
v. Execution period for completion of the Houses	4 Years as against 1 year as per Agreement	3 Years-10 Months as against 1 year as per Agreement
vi. Total time taken for tender processing	11 Months	5 Months 15 Days
vii. Total time taken between Tender Notice and completion of houses	5 Years & 8 Months	4 Years & 5 Months

- c. While studying the Annamayya Reservoir project, the study team found that there was a delay of 6 years in finalising the recommendations to the Foundation problems. The project completion took 26 years as against the proposed completion period of 5 years, and as a result the project cost went up to Rs.30,635/- per acre as against the estimated cost of Rs. 4067/- per acre.

It was also found that the quality of investigation survey was very poor and this was the main reason for the delay in the execution of project and cost escalation.

- d. The team also noticed during the study of comprehensive water supply projects at Jaggaiahpet executed by the Panchayat Raj (RWS) Department, a delay of 55 days between the opening of tenders and the approval of the tenders. Similarly, a delay of 97 days was noticed between approval of tenders and signing of the agreement.
- e. In respect of the improvement of Vakalapadu to Edatum Road, East Godavari District, executed by R&B Department, it was noticed that the specifications of the BT surface was high when the intensity of traffic was taken into consideration.
- f. While studying the proposals of check dams relating to Paderu in ITDA, Visakapatnam District, a number of irregularities were noticed during the visit of the team to Paderu.

The cost of the project was split up to suit the sanctioning power of the Executive Engineer. Investigation was not carried out as per norms. It was found that except the Assistant Executive Engineer, other officers have not inspected the site.

There are 45 section officers in the three divisions at Paderu, i.e., Tribal Welfare Division, Panchayat Raj Division and Special Minor Irrigation Division. But they seem to be not aware of their role, and in the effective utilisation of man power, and in following the established procedures and Government Orders.

The detailed reports on the above projects are given as Appendices. A number of gaps in the areas of accountability and transparency have been pointed out in these reports.

6.04 REGIONAL WORKSHOPS

During the workshops, Engineers from the I&CAD, PR(ED), PR(RWS) and R&B explained the field difficulties, pointed out the deficiencies in the existing system, and gave suggestions to improve transparency and accountability in Public Works as indicated below:

- Job charts at all levels for role clarity;
- Guidance and decisions on the field problems are lacking from the Heads of Departments;
- Orientation training to fresh recruits and refresher training to in-service engineers is necessary;
- Technical skills of qualified engineers were not being used properly;
- Citizen's charters needs to be implemented seriously by the departments with time frames for each process;
- Outsourcing of projects for preparing project reports;
- Revision of all departmental codes;
- Decentralisation of powers;
- Grading of contractors;
- Strengthening of investigation wing and facilities for the staff deployed;
- Provision for hospitality charges for VIP visits and visits of officials;
- Preparation of Engineering Manual;
- Providing adequate number of computers down to the Dy. EE level;
- Adequate provision for contingencies;
- Adequate provision for T.A. Bills;
- Number of meetings to be reduced to six days in a month and a definite agenda to be given for meetings;
- In some cases, it was reported that the Vigilance and Enforcement officials were issuing instructions regarding specifications contrary to the specifications in the approved design. This was creating problems;
- Delayed payments by PAO;
- To release LOC online and through electronic media;
- Redeployment of surplus staff, transfers and rationalisation of staff;
- Encouragement and incentives to the outstanding engineers;
- Providing latest survey equipment and instruments;
- A third party quality certification agency for conducting impartial checks of works, and quality assurance in the place of existing multiple inspections.

6.05 MAPPING THE PROJECT DELIVERY PROCESS

The existing project delivery process is given in Appendix 1, which shows that several levels of authorities and stages are involved leading to delay. Better accountability can be ensured by reducing the process cycle, eliminating same stages and through decentralisation.

6.06 STANDARDIZATION OF PROCEDURE FOR PREPARATION OF STANDARD SCHEDULE OF RATES

The standard schedule of rates (SSR) is a basic document of approved rates of all items of materials and labour costs with the help of which the estimates of works are prepared. The SSR should reflect the actual market rates prevailing in that area so that the contractor can execute works with these rates, maintaining best quality. During the study it was observed that there was no attempt to fix these rates on a rational basis. A number of discrepancies were found when compared with the local market rates and the SSR.

The construction practices, recent trends in building technology, and the use of mechanised equipment should be also considered when fixing rates under the SSR system. To improve transparency in the preparation of SSR, it is suggested that a committee of experts drawn from within and outside the department may be constituted for public works.

6.07 INVESTIGATION

Investigation is a vital area of activity in any project. A systematic approach in conducting investigation and a detailed study of the data are vital for further planning.

To improve the quality of investigation, only competent staff should be posted and an incentive of 30% of salary is suggested to attract competent engineers, besides providing facilities such as transport to the section officers engaged in investigation work. There is a need to procure the latest survey equipment for correct investigation.

6.08 TECHNICAL AUDIT

The purpose of any audit is to know whether the required procedures, rules and regulations were observed during the conduct of any activity and the desired output

and outcome were fully achieved. There are two types of audits conducted in the implementation of public works.

1. Financial Audit: This audit is taken up under the guidance of Accountant General to know whether the money spent during the execution of a work is in accordance with the guidelines, rules and regulations of the finance department and financial code. Necessary rectifications will be carried out to redress any irregularities. This is being currently done.
2. Technical Audit: This audit shall be carried out under the guidance of a Technical Expert or a Committee of Technical Experts, who are to be appointed for this purpose. The purpose of this audit is to know whether the delivered components of the project are in accordance with those fixed at the time of design phase. If any component of the project is not working with designed efficiency or if any component of the project is not functioning as per the target fixed at the time of design of that component, it is rectified to the required level.

SECTION 7: QUALITY OF PUBLIC WORKS

7.01 This is a major area of concern in Public Works. Currently, the following agencies are involved in conducting checks on the quality of works executed by the Engineering Departments:

- a. In-house quality control staff of the department concerned;
- b. Vigilance and Enforcement Department with Headquarters in Hyderabad, headed by a Senior Officer in the Department of Police;
- c. Lokayukta, on receipt of complaints from the Public;
- d. Chief Minister's Technical Advisor on quality control.

7.02 From the discussions held with the field engineers it was observed that the in-house quality inspection is not being conducted effectively and there is a lack of transparency in the system which gives scope to manipulation and discretion. There are very few inspections by the Senior Officers of the Departments at the project sites due to their preoccupation with meetings and video conferences. It should be mandatory for the Senior Officers from the level of the Chief Engineer to that of Executive Engineers to conduct certain minimum number of inspections of the works at various stages of the project. Currently, there are several deficiencies in this area as reported by the engineers at the regional workshops conducted by the study team.

7.03 The Vigilance and Enforcement Department by the very nature of functions and framework is seen as a policing department rather than a quality assurance agency with expertise, objectivity and efficiency. The very structure of the Vigilance and Enforcement Department with Engineers drawn from the Departments who may lack objectivity in some cases due to professional jealousies and rivalries which are natural seem to be affecting the judgment of the staff involved in the Vigilance and Enforcement Department while conducting quality checks. It was observed that there was lack of trust among the Engineers of the Departments on the quality control reports of the Vigilance and Enforcement Department

7.04 To improve the quality in public works in Andhra Pradesh and to bring in transparency and accountability in quality assurance, it is necessary to develop an independent third party agency as an independent and dependable institution with its own cadre of staff and experts using the methods of non-destructive testing and other objective technical and engineering processes to check the quality and to certify the specifications. This can either be entrusted to a new organisation to be built on a private public participation model or it may be entrusted to a reputed academic institution at a cost of about 0.5 to 1% on cost of works only.

SECTION 8: ORGANISATIONAL CULTURE

In this section the concept of organisational culture and the need to re-shape it in the departments undertaking public works is discussed in the light of the interactions with the engineers at the regional workshops and the replies to the questionnaire that was circulated to them. While the existing structure of the departments may be sound, the culture of the organisation needs to be overhauled to meet the requirements of transparency and accountability.

Organisational culture is “the way the work gets done.” “The Bureaucratic” value system that is pervasive in the Engineering Departments needs modification. Whether weak or strong, culture has a powerful influence throughout an organisation. It affects practically everything — from what decisions are made by whom, productivity and how employees relate to their citizens and the community. A strong positive culture is a powerful management lever for guiding behaviour because it helps employees do their jobs well.

As workplace culture has a profound impact on employees and their productivity, a negative culture will greatly diminish the Department’s capacity for performance. It is for these reasons that the solution to most organisational problems is not restructuring the organization’s hierarchy of duties, but rather restructuring the organisation’s culture.

While there are many strong performers and solid work units within the Engineering Departments, there is a need for culture modification which we find is necessary from the interaction we had with around 250 engineers at regional workshops. The urgent need is training at all levels of the supervisory spectrum to bring in cultural change. An improved work ethic must be developed, accountability must be clearly assigned and honest and objective performance evaluations connected to performance must take place on a regular basis.

A report on the response to the attitudinal survey conducted for engineers of the Engineering Departments at the Regional Workshops at Visakhapatnam, Vijayawada, Tirupati and Hyderabad during November 2003.

I. Introduction

CGG organised four Regional Workshops at Hyderabad, Tirupathi, Vijayawada, and Visakhapatnam, for engineers. A brief questionnaire was distributed to engineers at these workshops to ascertain broadly their views on the goals, beliefs, positive and negative pressures in their work, ethical standards, etc.

Of the 250 engineers who attend the workshops, only 114 responded to the questionnaire

S. No	Region	Districts Covered	No. of engineers
1	Hyderabad	Adilabad, Nizamabad, Medak, Nalgonda, and Mahabubnagar	17
2	Tirupati	Chittore, Nellore, Anantapur, Kurnool, and Cuddapah	27
3	Vijayawada	West Godavari, Krishna, Guntur, Ongole, and Khammam	29
4	Visakhapatnam	Srikakulam, Vizianagaram, Visakhapatnam, and East Godawari	41
	TOTAL		114

II. Salient Points

Most of the respondents did not understand the aim of the study and the questions mentioned although a presentation was made to the participants on the issues being raised and the purpose of the questionnaire. Most answers are casual and not exactly relevant. Some of the salient points that emerged from the analysis of the data are presented below:

1. Goals and Purposes

- Most of the respondents mentioned that their goal is to execute projects on hand efficiently and in time with quality and to serve the public.
- Some have mentioned that their goal is to achieve the targets of their department.
- Some typical goals mentioned are:
 - All roads to be made patch free;
 - Changing the face of rural areas;
 - Improve the image of the Department;
 - Get acceptance of the people and appreciation;

- Providing safe drinking water to all areas;
- Develop scientific temper ;
- Be a successful engineer.
- Respondents were asked why the goal mentioned is important to them. Some typical answers are:
 - Being a civil engineer this is important;
 - Because the goal/target is given by my office/superiors;
 - Because we are meant to do the work;
 - Service to rural poor is service to God;
 - Improves the living standard of rural poor;
 - Job satisfaction;
 - Bring the benefits of development to rural poor.
- Respondents were asked to whom they feel responsible and loyal and 86% responded. Public and people were mentioned by 44% of the respondents. 26% mentioned Superiors, Department and Government. 13% of respondents mentioned that they are responsible for SELF.

2. Beliefs and Values

- **Qualities that contributed to achievement:**

Only 65 respondents (56%) answered. Technical skills, determination and honesty are considered as main qualities that contributed to their achievement. Persistence and hard work were also mentioned.

Qualities that contributed to achievement			
S. No.	Quality	Number	Percent
1	Determination	24	37
2	Technical Skills	27	42
3	Honesty	21	32
4	Persistence	16	25
5	Hard work	5	8
6	Straightforwardness	2	3
7	Sincerity	2	3
8	Belief in subordinates and truthful to superiors	1	2
	TOTAL *	65	100

* Due to multiple answers the total and percent will be higher

- **Qualities that hinder achievement:**

Only 65 respondents (56%) answered. Surprisingly, technical skills or lack of it was considered as an impediment by 38% of the respondents. 8% of the respondents mentioned 'too many meetings and conferences' as impediments to their achievement. 15% of the respondents mentioned 'political pressures and pressures from superiors' as impediments.

Qualities that hinder achievement			
S. No.	Quality	Number	Percent
1	Technical skill	25	45
2	Honesty	13	23
3	Determination	11	20
4	Persistence	4	7
5	Many meetings and conferences	5	9
6	Political interference and pressure from superiors	10	18
7	Communication skills	2	4
8	Independent thinking	3	5
9	Others (lack of encouragement, anger, frequent transfers)	3	5
	TOTAL*	56	100

*Due to multiple answers the total and percent will be higher

- **Personal beliefs that contributed to achievement**

Most respondents mentioned fairness, followed by truth and justice as personal beliefs that contributed to achievement. Some mentioned that their belief in God contributed to their achievement.

3. The Work Process (Personal Level)

- **Most proud of work**

Most of the respondents mentioned specific projects they had executed or were associated with as the work they are most proud of. A few expressed themselves in general terms as below:

- To do things on my own and to get the things done
- To satisfy the public for the work executed
- Work done in tribal areas
- Sincere and hard work
- Being impartial and independent
- To be principled and rule bound

Some typical works mentioned by respondents are:

- Providing potable water to rural areas
- Laying of BT Roads to villages
- Connecting remote villages by roads
- Satya Sai Water supplies scheme in Anantapur District
- Designing and construction of structures
- Communication network during floods
- Preparation of Project Reports

- **Constraints at Work place**

Respondents were asked to mention the constraints at work place that make it difficult to attain their goals. 'Political interference and pressure from superiors' was mentioned as a major constraint followed by 'Non-cooperation and negative attitude by subordinate staff', 'lack of sufficient manpower', 'poor technical knowledge of subordinates', and 'wrong selection of contractors'. Some said that too many and continuous meetings and administrative work take much of their time and as such are not able to devote sufficient time for technical work.

- **Reward for Creativity**

36% of the respondents mentioned that creativity/innovation in work is rewarded.

- **Innovation that has changed the work process**

Very few respondents understood the questions. Some typical innovations mentioned by them are:

- Computerisation
- Good relations with subordinates
- Taking the stakeholders in to confidence

4. Mentors/Training

- **Initial attraction to join the Job**

Only 68% of the respondents answered this question. Most of them mentioned that they joined because they were selected and there was no choice. Some typical answers are:

- Direct public service selection
- Gazetted officer job
- Opportunity to get the job
- Salary
- To lead a good life
- Unemployment
- Respect in society and opportunity to serve people
- As it is a government job
- As the job is in Andhra Pradesh
- Best alternative available at that time

- **Training**

70% of the respondents answered this query. Among them, most mentioned that they were not given any formal training but learnt their work by experience and also learnt from their superior officers.

- **Books and projects that influenced in work process**

Less than 30% gave a relevant answer. Some typical books and projects mentioned are:

BOOKS

- 'You Can Win' by Shiv Khera
- 'Business People' by Rustomji
- Bible
- Maha Bharat
- Mind Power
- Meditation and Methods

PROJECTS

- Comprehensive Water Supply project at Payakaraopet & Yelamanchali
- Housing Project at Yemmiganur
- Nagarjuna Sagar Project
- Telugu Ganga Project
- Works of Sir Arthur Cotton
- Projects in Srikakulam

Role Model

70% of the respondents could not think of any role model. Only 30% answered this question. Sir Arthur Cotton, Sir M. Visweswarayya, Dr. K. L. Rao, S. Satyanarian Singh, S. N. Huda, M. Venkateswara Rao, N. Ramachandra Rao, S. S. Naidu, and NSR Murty are some of the names of well-known engineers mentioned. A few mentioned Mahatma Gandhi, Jaya Prakash Narayan, Sardar Patel, and Mr. Chandra Babu Naidu.

5. Perspectives on the area of work

Kind of work they like

About 70% of the respondents answered. Most of them mentioned that they like to work on construction and execution, supervision, and field jobs. Very few mentioned desk and office jobs.

Work related issues they dislike

About 40% of the respondents answered. Some of the works they dislike are - political interference, superior officer pressures to favour, frequent meetings resulting in waste of time, following up with the Pay & Accounts office for payment of bills, unnecessary paper work and working under Mandal Parishad.

Serving the Public

More than 80% answered. Most of them (97%) mentioned that their work serves the public.

6. Ethical Standards

75% of the respondents have answered. Among them, 71% agreed that the ethical standards in their area of work have come down. Only eight respondents mentioned some experiences. They related to Food for Work programme, sanctions of NC, PC, NSS and political interference.

Respondents were asked how they deal with beliefs/practices that they disagree at work. Only 36 respondents answered. Most of them mentioned that they would try to convince superiors/subordinates by discussion and persuasion and if these fail, they would compromise and accept, as there was no alternative. A few mentioned that they would try to avoid if possible.

7. General observations:

Respondents were asked to give general remarks and suggestions. A few typical remarks/suggestions are listed below:

- There should not be any political interference and pressure from superiors in execution of works.
- Engineers should be given freedom in planning, designing and execution of work. Engineers should be given good facilities and good working environment.
- Political interference should be avoided at all levels.
- Responsibilities should be fixed at all levels - from lower to higher level.
- Political interference and district administration dictating terms and conditions are killing the interest of new generation engineers with the resultant fear of transfer.
- Long, frequent and non-productive meetings and conferences should be reduced.
- Ensure that the engineers do engineering jobs and not accounts jobs. Do not entrust administration and other non-technical jobs.
- Hard working and sincere engineers should be rewarded with promotion/extra increments.
- No non-technical persons should inspect the works.
- Engineers should not be given extra duties like being appointed as nodal officers.
- Transfer policy should be transparent.

SECTION 9: RECOMMENDATIONS

This section contains the recommendations resulting from the study. It addresses issues within departments undertaking Public Works that need attention. The recommendations are to be seen as opportunities for improvement in service delivery by the Departments.

A total of 71 recommendations have emanated from the study. Of these, 24 relate to accountability, 4 relate to transparency, 5 relate to quality assurance and the remaining 38 relate to other issues, but are connected to accountability and transparency. Of these, 30 fall in the area of Government policy, while 41 recommendations can be implemented by the Engineering Departments themselves.

The following table gives the number of recommendations and the areas for implementation by the Government and by the Engineering Departments.

Recommendations at a Glance

S. No.	Items	External Measures			Internal Measures					Total of (5+10)
		General	Specific	Total	Accountability	Transparency	Quality Assurance	Others	Total	
1	2	3	4	5	6	7	8	9	10	11
1	Recommendations to be implemented by Government	2	2	4	7	2	3	14	26	30
2	Recommendations to be implemented by Engineering Departments themselves	2	7	9	17	2	2	11	32	41
		4	9	13	24	4	5	25	58	71

8.1 External and Internal Measures

There are twin processes to ensure accountability and transparency in government. The first one is external and the second one is internal and is concerned with internal procedures and practices. Unless both external and internal processes are harmonised, the objectives of transparency and accountability will not be met.

In the area of Public Works, the external processes are as given below:

8.2 External Measures I: General Action

1. The Right to Information Act Government
2. Transparency in Procurement Act Government
3. Citizen's charters with strict monitoring of service delivery and time frames. Department
4. Public hearings, placing all information relating to public works in the public domain through display boards at public places, websites, handouts and constant dialogue with the citizen's/users/beneficiaries. Department

8.3 External Measures II: Specific Measures for Transparency and Accountability

a. Accountability

1. Social audit Government
2. Public feedback on works Department
3. Dissemination of reports on projects, quality and performance of the works to the public as a regular and routine procedure of the department. Department
4. User Surveys Department
5. Execution of public works by people themselves through people's estimate as is currently in practice in East Godavari District. Department

b. Transparency

- i. Public hearings Department
- ii. Citizen/User Advisory Committees for each Engineering Department Department
- iii. Use of Information Technology with public access to information on tenders, tender awards, specifications, quality, financial outlays and expenditure and project outcome as compared to the objectives Department
- iv. A code of conduct for elected representatives involved in public works such as Ministers, Members of Parliament, Members of Legislative Assembly, Zilla Parishad Chairmen, Mandal Parishad Presidents, and Gram Surpunches Government

to define their accountability and to ensure non-interference in transfers of officers and in the execution of works, investigation, preparation of estimates tender processing and in the appointment of contractors.

8.4. Internal Measures

Internal measures needed for Transparency and Accountability in the Departments.

The following recommendations relate to internal processes and policies.

Internal Accountability measures to be followed by the Departments

Functional Manuals

Background

As of today, there are neither suitable functional manuals nor job charts in any Engineering Department resulting in confusion and inconsistencies in the procedures being adopted in the implementation of works programme. Hence, there is a paramount need to prepare Job Charts and Functional Manuals for the departments.

Recommendations

1. Job Charts should be prepared department-wise and given to every functionary in the department so that staff are aware of their specific roles, responsibilities and procedures to be followed in executing their responsibilities as per the job chart.

Action: Department

2. An Engineering Manual may be prepared department-wise and the Manual may contain two parts in which Part I should relate to the administrative functional aspects of the department and Part II should be relevant to works execution and technical functions which may be common to all departments.

Action: Department

3. A committee of in-service engineers from the Departments and one representative from CGG may take up the task of preparing Job Charts and Manuals.

Action: Department

Standardisation of Rates

Background

It is observed that contractors are quoting as much as 20% below the SSRs, which indicates that the SSRs need to be prepared more scientifically and realistically.

Recommendations

4. A committee of experts consisting of engineers from the departments and independent experts drawn from outside the department, such as universities, engineering consultants and firms may be constituted to prepare the standard schedule of rates.

Action: Department

5. Standard specifications and standard 'DATA' should be revised wherever necessary taking into consideration the latest developments in the construction industry.

Action: Department

6. If the quoted tender is higher or lower between +15% to -15% than estimated rates, it should be substantiated both by the engineer who approves and also by the contractor who quotes such rates. Tenders received beyond -15% should be summarily rejected.

Action: Government

7. The cost of work reduces when machines are used. The rates of items should be standardised where machinery is used instead of manual labour.

Action: Department

8. The fluctuation of rates of critical items like steel and cement should be given due consideration in standardising rates, especially when the work relates to major projects. A conversion factor may be worked out by giving the required weightages.

Action: Government

Investigation of Projects

Background

Detailed investigation planning, designs and estimates constitute a key area in ensuring accountability. Adverse effects of poor investigation, planning, and design are discovered only at the end of the project after the damage is done. Therefore, to ensure accountability, it is necessary to improve the quality of investigation, planning, designs and estimates. Though this is a vital area of engineering, staff who are unwilling or who are unwanted in the department are being assigned to this work as a sort of punishment, whereas this work needs highly competent and committed staff.

Recommendations

9. It is necessary to provide additional incentives to staff, such as additional pay of 30%, conveyance facility to Section Officers, providing latest survey equipments for investigation and adequate budget provision for investigation expenditure.

Action: Government

10. Project proposals of major projects should be cleared by an outside Technical Expert Committee before it is administratively sanctioned. **Action: Government**

11. Engineers involved shall be made accountable for incorrect investigation of the project. **Action: Department**

12. Specific training necessary for engineers involved in the work of investigation should be arranged. **Action: Department**

13. For major projects, it is suggested to outsource the job of investigation, designs, estimation and execution for better accountability.

Action: Government

Technical Audit of completed works

Background

Every engineering work has got a purpose to be fulfilled. This will be decided during the design phase. It is necessary to verify whether the specific purpose for which the project was contemplated was fully achieved or not. A technical audit will answer this requirement by making an input – output – outcome analysis.

Recommendations

14. Technical audit is to be made mandatory for all projects to ensure the final output and outcome, as arrived during design phase. The technical audit should be undertaken by a third party, and if such an audit shows that the designed outcome was not achieved as approved by the technical sanction authority, then the technical sanction authority and engineers involved in the execution shall be held accountable. Such system of technical audit exists in other countries.

Action: Government

15. The frequency of Technical Audit may be decided by the technical sanctioning authority, depending on the size and importance of the project.

Action: Department

Time Frame

It is necessary to fix a time frame to ensure accountability at every level in the department as mentioned below to achieve desired goals with optimum cost.

Tender process

Background

It was found that there was enormous delay in giving approval in respect of tenders and also between the approval of tenders and actual signing of the agreement with the contractor.

Recommendation

16. Time frames are to be fixed from the stage of issuing of tender notice up to entering into agreement with contractor for every stage of operation and included in the citizen's charters.

Action: Department

Execution of Works

Background

It is observed that there is undue delay in recording measurements, check measurements and making payments to contractors. Also, there is no system of monitoring the time frame schedule which is resulting in delay of completion of works.

Recommendation

17. Time frames are to be fixed for recording the measurements, check measurements and payment of bills. Once, time frames are fixed for the various activities for payment of bills for the work done, this needs to be centrally monitored at the level of Superintending Engineer and Chief Engineer of the departments concerned.

Action: Department

Approval of Deviations from Estimates

Background

It is reported by several engineers that there were delays in the approval of deviations in estimates by the competent technical authorities. This was causing delay in making payments and also in completing the projects.

Recommendation

18. Time frame should be fixed for approval of deviations of estimates by the competent technical authority. Similarly, time frames are to be fixed for

administrative approval by the government for approval of deviations.

Action: Department

Payments to Contractors

Background

It is reported that there is abnormal delay in making payments to contractors. Also, there is lack of transparency resulting in corruption at various levels while processing the bills.

Recommendations

19. Work bills should be prepared and presented by the contractors for payment.

Action: Department

20. In respect of payments to the contractors, the cheques should be credited automatically on the assigned dates to the respective accounts of the contractors. This procedure helps avoid corruption and bring transparency in the system. The use of Electronic Credit System (ECS) may be considered by which the payments are electronically made and credited to the accounts of the contractors on the due dates.

Action: Department

Quality Checks

Background

It is observed that there is delay in inspections by the Quality Control Department for issue of certificate for reinforcement for concreting, etc., and it is possible that such delays can be deliberate. Therefore, in order to bring transparency and accountability in these areas, it is necessary to fix time frames.

Recommendation

21. Time frames need to be fixed for Quality Control Checks undertaken by third parties or quality control staff of the Departments.

Action: Department

File Processing at Govt. Level

Background

When the proposals are sent to the Government, it is observed that there is considerable delay while they move from the Sections to the Secretaries.

Recommendation

22. Files may be sent to the Dy. Secretary/Joint Secretary level, from HODs for further processing, while fixing time frame as mentioned above. A criterion may be followed whereby a time limit of 15 days for minor works and 30 days for major works is not exceeded.

Action: Department

Monitoring of time frames

Background

Time frames given can work effectively only when there is strict monitoring at the senior levels.

Recommendation

23. There should be monthly review of the time frames for various operations involved at the level of SEs in respect of districts, by CEs at the state level, by E-in-Cs for all projects, and by secretaries at Government level.

Action: Department

The PWD 'D' code

Background

The 'D' code is considered as a procedure code and also as an Accountability Code for the Engineers. However, with a number of changes having taken place in the execution of work procedures, there is a need to revise the 'D' code to suit the present requirements.

Recommendation

24. An Experts Committee may be constituted to rewrite the 'D' code to suit the present needs and technology, on the lines of Central Public Works Department Code.

Action: Government

Internal Transparency measures to be followed by the Departments

Citizen's Charter

Background

The citizen's charters prepared by the Departments need redrafting with specific standards set for services rendered, complaints redressal, people's participation, etc., which are the life force behind the charters. A note on the drafting of charters is enclosed for guidance.

Recommendation

25. All Departments executing public works should publish citizen's charters and display the charter at a prominent place and create awareness among the staff and the public. The regular monitoring of service deliveries mentioned in the citizen's charter is to be ensured by the Nodal Officers appointed for the purpose by the Heads of the Departments.

Action : Department

Tendering Process

Background

Although the Government has issued instructions on tenders vide G.O. No. 94 Dt.1-7-2003, (I&CAD) it was observed that each department was following its own procedures and there was no uniformity. It was observed that the public works departments, who were dealing with the entrustment of works for execution, were not maintaining transparency in their activities, resulting in corruption at various levels. Hence, it is felt necessary to have a legislation on procurement process.

Recommendation

26. While the present G.O. on tendering process meets the requirement, it is felt that a legislation such as "Transparency in Public Procurement" as passed by the States of Tamil Nadu and Karnataka will have a greater impact.

Action: Government

Time Frames

Background

The finalisation of tenders is getting delayed abnormally. There is no monitoring to check this delay. The process takes place at several levels and thus it could lead to corrupt practices. There is need to specify time limits for each stage to help avoid delay and corruption.

Recommendation

27. Time frames need to be fixed for various stages in the processing of tenders by officials involved at different levels in giving sanctions and approvals. These time frames should be monitored at the level of the Chief Engineer concerned and the time frames should be published and made known to the stakeholders through citizen's charters.

Action: Department

Access to Measurement Book

28. The 'M' Book may be kept in the public domain by providing access to the 'M' Book to professionally qualified members of the public who desire to verify the measurements, specifications of materials used, etc. This is a major requirement to ensure transparency in public works.

Action: Government

Independent Agency for Quality Certification

Background

At present there are several parallel agencies involved in quality certification of works. The existing Vigilance and Enforcement Department consists of staff drawn from various Engineering Departments on deputation. It is observed that Junior Officers drawn from the departments are inspecting the works served by their erstwhile colleagues or senior officers and sometimes their position in the Vigilance and Enforcement Department is used to settle personal scores. At the Regional Workshops conducted by the study team, this opinion was unanimously expressed by the participants.

Recommendation

29. Creation of a new third party quality inspection agency with its own cadre of staff will ensure transparency and accountability and effective quality control in public works. It is suggested that a body such as Lloyds may be thought of, for this purpose. Alternatively, competent technical institutions, universities or the engineering colleges may be entrusted with the quality control work and inspection. The internal quality control mechanisms existing now in the departments may continue to conduct in house inspections as required.

Action: Government

Latest Equipment for Quality Checks and Training for Quality Tests

Background

There is a need to employ the latest technology and equipment in quality control testing of public works, particularly, the method of non-destructive testing should be chosen in testing the quality of public works both for objectivity and better results.

Recommendation

30. The Engineers involved in quality control activities in the execution of public works need to be trained in the latest techniques and use of latest equipments for testing. A training campaign is urgently required in this area.

Action: Department

Appointment of Trained Skilled workers by Contractors

It has been found that contractors engaging skilled workmen trained by institutes such as National Academy of Construction (NAC) ensure better quality of work.

Recommendation

31. While inviting tenders for major projects a specific condition may be laid out for contractors to engage only skilled workers trained and certified by a competent institution such as NAC and other bodies for execution of works.

Action: Department

Grading of Contractors

Background

A system of grading of contractors undertaking public works is in practice in some of the states to improve the quality of works. CRISIL Limited is engaged in the grading of contractors for State Housing Corporation Limited in Karnataka.

The following agencies in India are rating the services of contractors.

1. CARE Ltd.
2. FITCH Ratings Pvt. Ltd.
3. CRISIL Ltd.
4. ICRA Ltd.

Recommendation

32. Grading of contractors may be taken up to improve the quality and time frame which will enhance accountability.

Action: Government

Quality assurance in the execution of works by local bodies, SHGs and CBOs

Background

Works running to several crores of rupees in the State are being executed by the School Committees, Village Development Committees and these works may increase substantially once further works are allotted to the Panchayat Raj institutions under the 73rd amendment to the constitution. Therefore, there is greater responsibility now on all the Self-Help Groups (SHG) and Community Based Organisations (CBO) for ensuring transparency and quality in the works executed. The department should play a supportive role in this area.

Recommendation

33. Third party certification of quality assurance is required for these works also and funds should be released to the various SHGs and CBOs on the condition that they would abide by third party inspection and certification. 'D' code should be applicable to Government corporations, local bodies, Self-Help Groups, and Community Based Organisations also.

Action: Government

TRAINING

Background

The study team found that the engineers in various departments undertaking the execution of public works are not equipped with the latest knowledge of engineering practices due to lack of training and updating of knowledge, specific to their functions. Therefore, the following training may be taken up for ensuring better quality in public works.

Recommendations

34. Orientation Training for new entrants

Training to the new entrants should be given in the following subjects:

- i. Introduction to Department activities
- ii. Investigation and Planning
- iii. Designs
- iv. Standard Specifications, Standard Data, SSRs and Estimating
- v. Tenders processing, Powers and responsibilities.
- vi. Execution – M-Book and its importance
- vii. Quality Testing methods/Equipments – Penal action against Engineers and Contractors
- viii. Powers and Responsibilities of Engineers
- ix. D-code, A-Code and Finance Code
- x. Public Speaking – Presenting Technical Papers
- xi. Local Bodies – Powers and responsibilities
- xii. Behavioral change
- xiii. Citizen’s charter – Engineers and Public relations
- xiv. Training on computer skills and accounting techniques

Action: Department

35. Refresher Training for in-service Engineers

Every engineer shall be trained for 4 to 5 days per year to keep him/her abreast of the latest developments in the field of engineering. To impart such training at project sites or at district level, Senior Engineers are to be trained to act as trainers to train the field engineers at their place of work itself, i.e., at projects and district headquarters.

Action: Department

36. Training of Skilled Personnel

To ensure quality works, it is essential to use the services of skilled personnel like masons, plumbers, welders, electricians and carpenters who are certified by NAC or by such recognised bodies only.

Action: Department

37. Sponsoring Authority for Trainings

It is necessary to decentralise the powers for sponsoring of staff to be sent for training. The following suggestion is made with this in view:

<u>For Training</u>	<u>Authority to Approve</u>
a. Outside the Country ...	Government
b. Within the Country ...	Engineer-in- Chief
c. Within the State ...	Chief Engineer
d. Within the District ...	Superintending Engineer
e. Within the Division ...	Executive Engineer

A training roster should be maintained by each department and the same officer who has once undergone training in a subject should not be nominated again. The study team obtained training policy and modules from Larsen and Toubro (L&T). It is suggested that this module may be used as a basis for developing training programmes for the engineering staff. A note on the training of engineers and other staff in L & T is enclosed.

Action: Department

38. To coordinate training activities, a HRD wing should be established under each HOD to undertake the task of training. The HRD wing should identify the training needs of the department

Action: Department

Maintenance**Background**

There is a need to develop a manual for the maintenance of works category-wise, such as buildings, roads, water supply and drainage schemes, canals and irrigation dams. These may be on the lines of manuals prepared for regular works identifying the needs for undertaking maintenance and periodicity. Apart from a defect liability clause, the contractor may be asked to quote for maintenance of the works for a period of 3 years.

Recommendations

39. Maintenance Manuals should be prepared on the lines of works manual, identifying the need for undertaking maintenance based on periodicity and priority.

Action: Department

40. Item-wise requirement of money may be worked for regular annual maintenance and such provision may be made in the budget.

Action: Government

41. All maintenance works may be outsourced and a uniform policy on this may be developed by all departments. Apart from defect liability period the contractor may be asked to quote for maintenance of the works for a period of 3 years.

Action: Government

OTHER SUBJECTS

People's Estimate

Background

The success of the People's Estimate concept in East Godavari District has brought out the success of mobilisation of source capital, wherein putting together of ideas, money and physical labour by the local community contributed to the success of rural housing projects and rural water supplies.

Recommendation

42. The concept behind the People's Estimate is balancing social forces and reconnecting social interests and enabling the members of the local community to organise themselves in realisation of goals. This concept needs to be extended on a wider basis in all rural public works.

Action: Government

LOC Online

Background

During the regional workshops at Visakhapatnam, Vijayawada, Tirupati and Hyderabad, engineers expressed the difficulties encountered by them in getting the LOCs released in time for making payments. Because of the delay in release of LOC, both at the Government level and CE's level, prompt payment to contractors could not be ensured resulting in delay in works. It was also found that the field engineers were spending considerable amounts for the release of LOCs.

Recommendation

43. The remedy for this problem lies in online issue of LOC. A software may be introduced to release the LOC through electronic media by online system up to the PAO/EE level. **Action: Department**

Rewards for Engineers

44. A merit point system will ensure that only those with better performance are considered for promotion and rewards. Seniority lists of engineers may be updated every year and displayed on the website/internet. **Action: Government**

Maintenance of assets – Avoidance of dual responsibility

(For P.R. Department Only)

45. Gram Panchayats shall be made responsible for proper protection and maintenance of all public assets irrespective of whether the asset is yielding revenue or not. **Action: Government**

46. The grants allocated for this purpose in the budget may be released to the Gram Panchayat to augment the resources of the Gram Panchayats. **Action: Government**

47. Gram Panchayat may be permitted to collect required revenue through taxes if needed, to protect and maintain these assets. **Action: Government**

48. Clear cut guidelines and responsibilities of the Gram Panchayat and line departments may be communicated to avoid ambiguity in the area of accountability for the maintenance of the assets. **Action: Government**

Pay and Accounts Officer System

Background

Pay and Accounts Officers (PAO) system is now functioning in all major departments involved in the execution of public works. The bills passed by the Executive Engineer are sent to PAO for issuing cheques. Presently, for bills received up to 25th of the month, payments are made by the 5th of next month. As payment to the contractors is being made only once a month, the progress of works is getting affected.

Recommendation

49. PAO payments may be made as suggested below:

Bills received during the period	:	Payment to be arranged by PAO
5 th of the month to 25 th of the month	:	Before 5 th of next month
25 th of the month to 15 th of next month	:	Before 25 th of next month

Action: Government

Master plan of works for each District

Background

It is observed that projects undertaken by the departments are not based on actual felt needs of the community.

Recommendations

50. A master plan should be prepared at the Mandal and Zilla Parishad level at the beginning of each year and works should be taken up accordingly, keeping in view the availability of funds and priority of the projects.

Action: Government

Meetings

51. Review meetings for engineers may be confined to 1st week of the month, leaving the following 3 weeks for concentrating on supervision and inspection of works.

Action: Government

Awareness of GOs

52. Workshops may be organised once in 6 months at Circle level to brief engineering staff on the GOs released on both technical and administrative matters which are relevant to their work.

Action: Department

Display Boards

53. Display boards should compulsorily be erected at worksites giving details like description of works, estimated cost, name of the contractor, names of engineers, date of starting and proposed completion date, but at present, this is being followed only in some cases.

Action: Department

Inspection of Works

54. Inspecting officers shall issue inspection notes at the time of inspection itself.

Action: Department

Complaint Boxes

55. It was found that in many offices of Engineering Departments, complaints/suggestion boxes were not seen. For successful feedback, all offices of the

Engineering Departments should provide complaints/suggestion boxes to the visitors and the public at a prominent place.

Action: Department

Powers to incur contingent expenditure on special occasions

Background

It was expressed by several engineers during regional workshops that it was becoming inevitable for them to spend significant amount of money on hospitality charges for VIP visits, etc. This was leading to a situation where the Engineering Departments are depending on the contractors to meet such expenditure. Similar is the case when foundation stones are laid and inaugurations are arranged. This is leading to a compromise on the quality of work.

Recommendations

56. In G.O. Ms. No. 358 Dt. 13-5-1963, all departments in the Secretariat, and Heads of Departments were given powers to incur expenditure for laying foundation stones and opening ceremonies and such other Government functions. In view of the cost escalation, these amounts may now be revised in the range of Rupees Ten Thousand to Rupees One Lakh for each occasion based on the size of the project.

Action: Government

57. To meet the expenditure for conducting other functions involving elected representatives a separate provision may be made in the budgets of the departments as may be required.

Action: Government

Convergence among the Departmental Heads

Convergence among Departments

Background

There is a need for convergence among different engineering departments engaged in public works to bring in uniformity in system, procedures and practices. Through convergence, synergy can be achieved which will lead to economy, efficiency and effectiveness in the public works.

Recommendation

58. It is suggested that a coordination committee of all engineering departments undertaking public works in GoAP is formed with Engineers-in-Chiefs of the departments, which will meet once in 3 months to discuss the issues of common concern and to identify best practices.

Action: Government

ADDENDUM

Section 10: PRESENTATION MADE TO CoPE

Sri N. Vittal, IAS (Retd.), former Chief Vigilance Commissioner, Government of India and presently Chairman, CoPE, was present along with two members of CoPE, namely, Mr. P. V. R. K. Prasad, IAS (Retd.), Director General, Dr. MCR HRD IAP, and Sri A. Raghothama Rao, IAS, Principal Secretary to Government, General Administration Department, GoAP, at the first workshop conducted by the study team on 17th September 2003 at CGG to hear the views of the participants on practices leading to corruption and measures to curb corruption in the departments involved in public works. Dr. C. S. Rangachari, IAS (Retd.), Workstream Leader, Responsive Governance, made a presentation on the subject to the Chairman, CoPE which is enclosed. A number of practices in the execution of Public Works came up during the workshop and our study confirms the prevalence of these practices which result from a lack of transparency and accountability in the departments. In our recommendations we have included the suggestions made by the Chairman and Members of the CoPE at the workshop.

Corruption in Public Works

Presentation made by Dr. C. S. Rangachari, IAS, (Retd.),

to Sri N. Vittal, IAS, (Retd.), Chairman, CoPE,

Government of Andhra Pradesh, on September 17, 2003

Areas of Corruption

- Preparation of estimates
- Process of tendering
- Execution of Works
- Deviations from estimates
- Measurements
- Buying and selling of posts

Preparation of Estimates

'Opportunities' for corruption	Suggested remedies
<ul style="list-style-type: none"> • 'Cushions' in estimated rates (e.g., leads) 	<ul style="list-style-type: none"> • There should be SE level verification of the sources of 'cushions' in the estimated rates
<ul style="list-style-type: none"> • Improper investigations/project designs 	<ul style="list-style-type: none"> • Investigation posts must be made attractive; persons of known merit should be posted by rotation; officer sanctioning the estimate must own responsibility for the investigation
<ul style="list-style-type: none"> • Flaws in preparation of SSR 	<ul style="list-style-type: none"> • GO Ms. No. 94 addresses these issues but needs to be enacted as law, as in other states (Transparency Act)

Process of tendering

'Opportunities' for corruption	Suggested remedies
<ul style="list-style-type: none"> • Collusion among bidders 	<ul style="list-style-type: none"> • Internet bidding will help, but informal barriers may continue (Suggestion?)
<ul style="list-style-type: none"> • Exclusion of potential bidders to reduce potential competition 	<ul style="list-style-type: none"> • One remedy is to limit excess over estimated rates to 5% at the level of tender approving authority (TN example)
<ul style="list-style-type: none"> • Excesses over estimated rates to cover 'rents' 	

Execution of works

‘Opportunities’ for corruption	Suggested remedies
<ul style="list-style-type: none"> • Dilution of quality 	<ul style="list-style-type: none"> • Inspection by professional agencies from outside
<ul style="list-style-type: none"> • Lack of timely inspections of works 	<ul style="list-style-type: none"> • Public awareness effective for local works (Financial participation by public?)
<ul style="list-style-type: none"> • Ineffective implementation of penalty clauses 	<ul style="list-style-type: none"> • Performance appraisal to be linked to effective inspections as per schedule to be fixed
	<ul style="list-style-type: none"> • Agreement authority should be made liable for such failures (Transparency Act?)

Deviations from estimates

‘Opportunities’ for corruption	Suggested remedies
<ul style="list-style-type: none"> • Deviations from estimates due to motivated change of specifications 	<ul style="list-style-type: none"> • Any change in specifications or mode of execution exceeding 5% of the value of that particular item should be subject to approval by the next higher authority
<ul style="list-style-type: none"> • Changes in mode of execution to take advantage of higher rates 	

Measurements

‘Opportunities’ for corruption	Suggested remedies
<ul style="list-style-type: none"> • Delay in recording measurements and preparation of bills 	<ul style="list-style-type: none"> • Schedule of payment should be specified in the contract, eliminating discretion in measurement & billing. It should be subject to periodic reporting and checks
<ul style="list-style-type: none"> • Inflated measurements and over-billing 	<ul style="list-style-type: none"> • Strict implementation of ‘codal’ provisions for super check and measurement on pain of disciplinary action.
	<ul style="list-style-type: none"> • Schedule of inspections for higher officials as well

Buying and selling of posts

‘Opportunities’ for corruption	Suggested remedies
<ul style="list-style-type: none"> Officials pay money for transfers to lucrative posts (e.g. O & M posts in Irrigation department) 	<ul style="list-style-type: none"> Recent efforts at ‘counseling’ have not effectively countered these abuses. The ‘counseling’ process should be re-engineered. Also, EEs and SEs must be covered by ‘counselling’
<ul style="list-style-type: none"> Non-officials’ use of threat of transfers against officials to keep them in line 	

ADDENDUM

Section 11: Procedure for People's Estimate

GUIDELINES AND PROCEDURE TO PREPARE PEOPLE'S ESTIMATE

OBJECTIVES

1. To create/inculcate the social awareness about the sanctioned work in the people/stakeholders of the street or ward where the work is located.
2. To disseminate the minute details of the work, right from quantities of materials like metal, cement bags, and sand to essential techniques like mixing of cement concrete in proper ratio, etc.
3. To make people/stakeholders prepare people's estimate under the guidance of concerned Engineering Official, based on the prevailing local market rate in an easily understandable language.
4. To form a Vigilance Committee consisting of 4 to 5 people/stakeholders of the street to oversee, supervise and monitor the implementation of the work.

PROCEDURE

1. The works sanctioned under various programmes like MPLADS, EAS, JGSY, etc., can be taken up departmentally without allowing any contractors. This system of departmental execution results in 15-20% savings and timely completion of works transparency, people's participation and creation of awareness among public.
2. The works will be sanctioned to Assistant Engineer/Mandal Engineering Officers for Departmental Execution on receipt of detailed estimate for the work in common man's language in Telugu.
3. The AE/MEO will conduct Avagahana Sadassu with the stakeholders of the work at site and distribute a minimum of 100 copies of the people's language estimates to the stakeholders/user groups.
4. The details of work, i.e., name of the work, location of the work, estimated cost of the work, year of sanction, details of metal, sand, gravel, cement in lorry loads and local cost of the material to be purchased, charges for labour, watering, spreading, etc., will be mentioned in the people's language estimate.
5. A comparison of estimate rates and local rates will also be mentioned in the estimate.

6. 75 % of the estimate amount of the work will be released to the AE/MEO along with sanction order to start the work. The amounts released will be deposited in a separate SB account in a Mandal Level Bank Branch.
7. In the Avagahana Sadassu, the AE/MEO will explain the details of the work, various components like labour and material, differences in rates and create awareness among the stakeholders and also to ensure 100% transparency.
8. The stakeholders will be asked to form a Vigilance Committee with a minimum of 5 members for watching the quality and quantity of the material received, quality of work, etc.
9. The Vigilance Committee will maintain a register with them and the details of material, etc., purchased and received at site from time to time will be entered in the register.
10. The Vigilance Commission shall record the expenditure as observed by them for each item in the Register maintained by them. The work will be executed only after the quantity and quality of the material purchased for the work is certified by the Vigilance Commission and stakeholders.
11. The AE/MEO will conduct a second Avagahana Sadassu with the stakeholders of the work when the work is under progress and explain the progress of work, quantity of material utilised on that date, probable date of completion, etc., and record the same in the register.
12. The balance 25% of the estimated amount of the work will be released to the AE/MEO basing on the value of work done after receipt of the status report.
13. The AE/MEO will complete the work in all respects as per the provisions made in the estimate and conduct a third and final Avagahana Sadassu with the stakeholders and explain the item-wise expenditure particulars, saving amount, if any, made on the work and record the same in the register.
14. The AE/MEO will take photographs of the work in different stages, i.e., before execution of work, work under progress, after completion of the work, material purchased, conducting Avagahana Sadassu, and maintain a separate register for each work.

15. The AE/MEO will take up additional work with the savings amount as per the request of the stakeholders and villagers.
16. A model people's estimate in Telugu is enclosed.

APPENDIX 2

SUMMARY OF RECOMMENDATIONS

A total of 71 recommendations have emanated from the study. Of these, 24 relate to accountability, 4 relate to transparency, 5 relate to quality assurance and the remaining 38 relate to other issues, but connected to accountability and transparency. Of these, 30 fall in the area of Government policy, while 41 recommendations can be implemented by the Engineering departments themselves.

The following table gives the number of recommendations and the areas for implementation by the Government and by the Engineering Departments.

Recommendations at a Glance

S. No.	Items	External Measures			Internal Measures					Total of (5+10)
		General	Specific	Total	Accountability	Transparency	Quality Assurance	Others	Total	
1	2	3	4	5	6	7	8	9	10	11
1	Recommendations to be implemented by Government	2	2	4	7	2	3	14	26	30
2	Recommendations to be implemented by Engineering Departments themselves	2	7	9	17	2	2	11	32	41
		4	9	13	24	4	5	25	58	71

8.1 External and Internal Measures

There are twin processes to ensure accountability and transparency in government. The first one is external whereas the second one is internal and is concerned with the internal procedures and practices. Unless both external and internal processes are harmonized, the objectives of transparency and accountability will not be met.

In the area of Public works the external process are given below:

8.2 External Measures I – General

Action

- | | |
|--|------------|
| 5. The Right to Information Act | Government |
| 6. Transparency in Procurement Act | Government |
| 7. Citizen's charters with strict monitoring of service
Department
delivery and time frames. | |
| 8. Public Hearings, placing all information relating to public
Department
works in the public domain through display boards at public
places, websites, handouts and constant dialogue with the
citizen's/users/beneficiaries. | |

8.3 External Measures II -Specific Measures for Transparency and Accountability

a. Accountability

- | | |
|---|------------|
| 6. Social Audit | Government |
| 7. Public Feedback on works
Department | |
| 8. Dissemination of Reports on projects, quality and
Department
performance of the works to the public as a regular and
routine procedure of the department. | |
| 9. User Surveys
Department | |
| 10. Execution of public works by peoples themselves through
Department
people's estimate as is currently in practice in the East
Godavari District. | |

b. Transparency

- v. Public Hearings
Department
- vi. Citizen/User Advisory Committees for each Engineering
Department
Department
- vii. Use of Information Technology with public access to information on tenders, tender awards, specifications, quality, financial outlays and expenditure and project outcome as compared to the objectives. Department
- viii. A code of conduct for elected representatives involved in public works such as Ministers, Members of Parliament, Members of Legislative Assembly, Zilla Parishad Chairmen, Mandal Parishad Presidents, Gram Surpunch to define their accountability and to ensure non-interference in transfers of officers and in the execution of works, investigation, preparation of estimates, tender processing and in the appointment of contractors. Government

8.4. Internal Measures

Internal Measures needed for Transparency and Accountability in the Departments.

The following recommendations relate to internal processes and policies.

S. NO.	AREA OF STUDY	RECOMMENDATIONS	REMARKS
	Internal Accountability measures to be followed by the Departments	<p><u>Functional Manuals</u></p> <p><u>Background</u></p> <p>As on today, there are neither suitable functional manuals nor job charts in any Engineering Department resulting in confusion and inconsistencies in the procedures being adopted in the implementation of works programme. Hence, there is a paramount need to prepare Job Charts and Functional Manuals for the departments.</p> <p><u>Recommendations</u></p>	<u>Action</u>

		<p>1. Job Charts should be prepared department-wise and given to every functionary in the department so that staff are aware of their specific roles, responsibilities and procedures to be allowed in executing their responsibilities as per job chart.</p> <p>2. An Engineering Manual may be prepared, department-wise the Manual may contain two parts in which Part I should relate to the administrative functions aspects of the department and Part II should be relevant to works execution technical functions which may be common to all departments.</p> <p>3. A Committee of in-service Engineers from the Departments and one representative from CGG may take up the task of the preparation of Job Charts and Manuals.</p> <p><u>Standardisation of Rates</u></p> <p><u>Background</u></p> <p>It is observed that contractors are quoting as much as 20% below the SSRs which indicates that the SSRs need to be prepared more scientifically and realistically.</p> <p><u>Recommendations</u></p> <p>4. A committee of experts consisting of engineers from the departments and independent experts drawn from outside the department, such as universities, engineering consultants and firms may be constituted to prepare the standard schedule of rates.</p> <p>5. Standard specifications and standard 'DATA' should be revised where ever necessary taking into consideration the latest developments in the construction industry.</p>	<p>Department</p> <p>Department</p> <p>Department</p> <p>Department</p> <p>Department</p>
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		<p>6. If the Quoted tender is higher or lower between +15% to -15% than estimated rates it should be substantiated both by the engineer who approves and also by the contractor who quotes such rates. Tenders received beyond -15% should be summarily rejected.</p> <p>7. The cost of work reduces when machines are used. The rates of items should be standardised where machinery is used instead of manual labour.</p> <p>8. The fluctuation of rates of critical items like steel and cement should be given due consideration in standardising rates, especially when the work relates to major projects. A conversion factor may be worked out by giving the required weightages.</p> <p><u>Investigation of Projects</u></p> <p><u>Background</u></p> <p>Detailed Investigation planning, designs and estimates constitute a key area in ensuring accountability. Adverse effects of poor investigation, planning, and design are discovered only at the end of the project after the damage is done. Therefore to ensure accountability, it is necessary to improve the quality of investigation, planning, designs and estimates. Though this is a vital area of engineering, staff who are unwilling or who are unwanted in the department are being assigned to this work as a sort of punishment, whereas this work needs highly competent and committed staff.</p> <p><u>Recommendations</u></p> <p>9. It is necessary to provide additional incentives to staff, such as additional pay of 30%, conveyance</p>	<p>Government</p> <p>Department</p> <p>Government</p> <p>Government</p>
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		<p>facility to Section Officers, providing latest survey equipments for investigation and adequate budget provision for investigation expenditure.</p> <p>10. Project proposals of Major Projects should be cleared by an outside Technical Expert Committee before it is administratively sanctioned.</p> <p>11. Engineers involved shall be made accountable for incorrect investigation of the project.</p> <p>12. Specific training necessary for Engineers involved in the work of investigation should be arranged.</p> <p>13. For Major projects it is suggested to outsource the job of investigation, designs, estimation and execution for better accountability.</p> <p><u>Technical Audit of completed works</u></p> <p><u>Background</u></p> <p>Every Engineering work has got a purpose to be fulfilled. This will be decided during the design phase. It is necessary to verify whether the specific purpose for which the project was contemplated was fully achieved or not. A technical audit will answer this requirement by making an input – output – outcome analysis.</p> <p><u>Recommendations</u></p> <p>14. Technical audit is to be made mandatory for all projects to ensure the final output and outcome, as arrived during design phase. The technical audit should be undertaken by a third party, and if such an audit shows that the designed outcome was not achieved as approved by the technical sanction authority, then the technical sanction authority and</p>	<p>Government</p> <p>Department</p> <p>Department</p> <p>Government</p> <p>Government</p>
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	<p>cheques should be credited automatically on the assigned dates to the respective accounts of the contractors. This procedure helps avoid corruption and bring transparency in the system. The use of Electronic Credit System (ECS) may be considered by which the payments are electronically made and credited to the accounts of the contractors on the due dates.</p> <p><u>Quality Checks</u></p> <p><u>Background</u></p> <p>It is observed that there is delay in inspections by the Quality Control department for issue of certificate for reinforcement for concreting etc., and it is possible that such delays can be deliberate. Therefore, in order to bring transparency and accountability in these areas it is necessary to fix time frames.</p> <p><u>Recommendation</u></p> <p>21. Time frames need to be fixed for Quality Control Checks undertaken by third parties or quality control staff of the Departments.</p> <p><u>File Processing at Govt. Level</u></p> <p><u>Background</u></p> <p>When the proposals are sent to the Government, it is observed that there is considerable delay when they move from the sections to the secretaries.</p> <p><u>Recommendation</u></p> <p>22. Files may be sent to the Dy. Secretary/Joint Secretary level, from HODs for further processing, while fixing time frame as mentioned above. A criterion may be followed not to exceed time limit</p>	<p>Department</p> <p>Department</p>
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		<p>of 15 days for minor works and 30 days for major works.</p> <p><u>Monitoring of time frames</u></p> <p><u>Background</u> Time frames given can work effectively only when there is strict monitoring at the senior levels.</p> <p><u>Recommendation</u> 23. There should be monthly review of the time frames for various operations involved at the level of SEs in respect of districts by CEs at the state level by E-in-Cs for all projects, and by secretaries at Government level.</p> <p><u>The PWD ‘D’ code</u></p> <p><u>Background</u> The ‘D’ code is considered as a procedure code and also as an Accountability Code for the Engineers. However, with a number of changes having taken place in the execution of works procedures, there is a need to revise the ‘D’ code to suit the present requirements.</p> <p><u>Recommendation</u> 24. An Expert Committee may be constituted to rewrite the ‘D’ code to suit the present needs and technology, on the lines of Central Public Works Department Code.</p>	<p>Department</p> <p>Government</p>
	<p>Internal Transparency measures to be followed by the</p>	<p><u>Citizen’s Charter</u></p> <p><u>Background</u> The Citizen’s charters prepared by the Departments need redrafting with specific standards set for</p>	

		<p>before the cabinet-subcommittee for approval.</p> <p><u>Time Frames</u></p> <p><u>Background</u></p> <p>The finalisation of tenders is getting delayed abnormally. There is no monitoring to check this delay. The process takes place at several levels and thus it could lead to corrupt practices. There is need to specify time limits for each stage to help avoid delay and corruption.</p> <p><u>Recommendations</u></p> <p>27. Time frames need to be fixed for various stages in the processing of tenders by officials involved at different levels in giving sanctions and approvals. These time frames should be monitored at the level of the Chief Engineer concerned and the time frames should be published and made known to the stakeholders through citizen’s charters.</p> <p><u>Access to Measurement Book</u></p> <p>28. The ‘M’ Book may be kept in the public domain by providing access to the ‘M’ Book to the professionally qualified members of the public who desire to verify the measurements, specifications of materials used etc. This is a very major requirement to ensure transparency in public works.</p>	<p>Department</p> <p>Government</p>
	<p>Quality Assurance and Quality Certification</p>	<p><u>Independent Agency for Quality Certification</u></p> <p><u>Background</u></p> <p>At present there are several parallel agencies involved in quality certification of works. The existing Vigilance and Enforcement department consists of staff drawn from various Engineering Departments on deputation. It is observed that</p>	

		<p>Junior Officers drawn from the departments are inspecting the works served by their erstwhile colleagues or senior officers and sometimes their position in the Vigilance and Enforcement Department is used to set personal scores. At the Regional Workshops conducted by the study team, this opinion was unanimously expressed by the participants.</p> <p><u>Recommendation</u></p> <p>29. Creation of a new third party quality inspection agency with its own cadre of staff will ensure transparency and accountability and effective quality control in public works. It is suggested that a body such as Lloyds may be thought of, for this purpose. Alternatively, competent Technical institutions, Universities or the Engineering Collages may be entrusted with the quality control work and inspection. The present internal quality control mechanisms existing now in the departments may continue to conduct in house inspections as required.</p> <p><u>Latest Equipment for Quality Checks and Training for Quality Tests</u></p> <p><u>Background</u></p> <p>There is a need to employ the latest technology and equipments in quality control testing of public works, particularly the method of nondestructive testing should be chosen in testing the quality of public works both for objectivity and better results.</p> <p><u>Recommendation</u></p> <p>30. The Engineers involved in the quality control</p>	<p>Government</p> <p>Department</p>
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		<p>activities in the execution of public works need to be trained in the latest techniques and use of latest equipments for testing. A training campaign is urgently required in this area.</p> <p><u>Appointment of Trained Skilled workers by Contractors</u></p> <p>It has been found that contractors engaging skilled workmen trained by institutes such as National Academy of Construction ensure better quality of work.</p> <p><u>Recommendation</u></p> <p>31. While inviting tenders for major projects a specific condition may be laid out for the contractors to engage only skilled workers trained and certified by a competent institution such as NAC and other bodies for execution of works.</p> <p><u>Grading of Contractors</u></p> <p><u>Background</u></p> <p>A system of grading of contractors undertaking public works is in practice in some of the states to improve the quality of works. CRISIL Limited is engaged in the grading of contractors for State Housing Corporation Limited in Karnataka. The following agencies in India are rating the services of contractors:</p> <ol style="list-style-type: none"> 5. CARE Ltd. 6. FITCH Ratings Pvt. Ltd. 7. CRISIL Ltd. 8. ICRA Ltd. <p><u>Recommendation</u></p> <p>32. Grading of contractors may be taken up to</p>	<p>Department</p> <p>Government</p>
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		<p>improve the quality and time frame which will enhance Accountability.</p> <p><u>Quality assurance in the execution of works by local bodies, SHGs and CBOs</u></p> <p><u>Background</u></p> <p>Works running to several crores of rupees in the state are being executed by the School Committees, Village Development Committees and these works may increase substantially once further works are allotted to the Panchayat Raj institutions under the 73rd amendment to the constitution. Therefore, there is greater responsibility now on all the Self-Help Groups (SHG) and Community Based Organisations (CBO) for ensuring transparency and quality in the works executed. The department should play a supportive role in this area.</p> <p><u>Recommendation</u></p> <p>33. Third party certification of quality assurance is required for these works also and funds should be released to the various SHG and CBOs on the condition that they would abide by third party inspection and certification. ‘D’ code should be applicable to Government corporations, local bodies, Self-Help Groups and Community Based Organisations also.</p>	<p>Government</p>
	<p>TRAINING</p>	<p><u>Background</u></p> <p>The study team found that the Engineers in various departments undertaking the execution of public works are not equipped with the latest knowledge of engineering practices due to lack of training and up-dating of knowledge, specific to their functions. Therefore the following training may be taken up</p>	

		<p>work itself, i.e., at projects and District Headquarters.</p> <p>36. <u>Training of Skilled Personnel</u> To ensure quality works, it is essential to use the services of skilled personnel like, masons, plumbers, welders, electricians, and carpenters who are certified by National Academy of Construction (NAC) or by such recognised bodies only.</p> <p>37. <u>Sponsoring Authority for Trainings</u> It is necessary to decentralise the powers for sponsoring of staff to be sent for training. The following suggestion is made with this in view.</p> <table border="0"> <tr> <td><u>For Training</u></td> <td><u>Authority to Approve</u></td> </tr> <tr> <td>a. Outside the Country</td> <td>... Government</td> </tr> <tr> <td>b. Within the Country</td> <td>... Engineer-in- Chief</td> </tr> <tr> <td>c. Within the State</td> <td>... Chief Engineer</td> </tr> <tr> <td>d. With in the District</td> <td>... Superintending Engineer</td> </tr> <tr> <td>e. With in the Division</td> <td>... Executive Engineer</td> </tr> </table> <p>A training roster should be maintained by each department and the same officer who has once undergone training in a subject should not be nominated again. The study team obtained training policy and modules from Larsen and Toubro (L&T). It is suggested that this module may be used as a basis for developing training programmes for the engineering staff. A note on the training of engineers and other staff in the L&T is enclosed.</p> <p>38. To coordinate training activities, HRD wing should be established under each HOD to undertake</p>	<u>For Training</u>	<u>Authority to Approve</u>	a. Outside the Country	... Government	b. Within the Country	... Engineer-in- Chief	c. Within the State	... Chief Engineer	d. With in the District	... Superintending Engineer	e. With in the Division	... Executive Engineer	<p>Department</p> <p>Department</p> <p>Department</p>
<u>For Training</u>	<u>Authority to Approve</u>														
a. Outside the Country	... Government														
b. Within the Country	... Engineer-in- Chief														
c. Within the State	... Chief Engineer														
d. With in the District	... Superintending Engineer														
e. With in the Division	... Executive Engineer														

		the task of training. The HRD wing should identify the training needs of the department.	
	Maintenance	<p><u>Background</u></p> <p>There is a need to develop a manual for the maintenance of works category-wise, such as buildings, roads, water supply and drainage schemes, canals and irrigation dams. These may be on the lines of manuals prepared for regular works identifying the needs for undertaking maintenance and periodicity. <u>Apart from defect liability clause, the contractor may be asked to quote for maintenance of the works for a period of 3 years.</u></p> <p><u>Recommendations</u></p> <p>39. Maintenance Manuals should be prepared on the lines of works manual, identifying the need for undertaking maintenance based on periodicity and priority.</p> <p>40. Item-wise requirement of money may be worked for regular annual maintenance and such provision may be made in the budget.</p> <p>41. All maintenance works maybe outsourced and a uniform policy on this may be developed by all departments. Apart from defect liability period, the contractor may be asked to quote for maintenance of the works for a period of 3 years.</p>	<p>Department</p> <p>Government</p> <p>Government</p>
	OTHER SUBJECTS	<p><u>People's Estimate</u></p> <p><u>Background</u></p> <p>The success of the People's Estimate concept in the East Godavari District has brought out the success of mobilisation of source capital, wherein putting together of ideas, money and physical labour by the local community contributed to the success of rural housing projects and rural water supplies.</p>	

	<p><u>Recommendation</u></p> <p>42. The concept behind the People’s Estimate is balancing social forces and reconnecting social interests and enabling the members of the local community to organise themselves in realisation of goals. This concept needs to be extended on a wider basis in all rural public works.</p> <p><u>LOC Online</u></p> <p><u>Background</u></p> <p>During the regional workshops at Visakhapatnam, Vijayawada, Tirupati and Hyderabad, Engineers talked about the difficulties encountered by them in getting the LOCs released in time for making payments. Because of the delay in release of LOC, both at Govt. level, and CE’s level, prompt payment to the contractors could not be ensured resulting in delay in works. It was also found that the field Engineers were spending considerable amounts for the release of LOC.</p> <p><u>Recommendations</u></p> <p>43. The remedy for this problem lies in online issue of LOC. A software may be introduced to release the LOC through electronic media by online system up to the PAO/EE level.</p> <p><u>Rewards for Engineers</u></p> <p>44. A merit point system will ensure that only those with better performance are considered for promotion and rewards. Seniority lists of Engineers may be updated every year and displayed on the website/internet.</p> <p><u>Maintenance of assets – Avoidance of dual</u></p>	<p>Government</p> <p><u>Action</u></p> <p>Department</p> <p>Government</p>
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		<p><u>responsibility</u></p> <p>(For P.R. Department Only)</p> <p>45. Gram Panchayats shall be made responsible for proper protection and maintenance of all public assets irrespective of whether the asset is yielding revenue or not.</p> <p>46. The grants allocated for this purpose in the budget may be released to the Gram Panchayat to augment the resources of the Gram Panchayats.</p> <p>47. Gram Panchayat may be permitted to collect required revenue through taxes if needed to protect and maintain these assets.</p> <p>48. Clear cut guide lines and responsibilities of the Gram Panchayat and line departments may be communicated to avoid ambiguity in the area of accountability for the maintenance of the assets.</p> <p><u>Pay and Accounts Officer System</u></p> <p><u>Background</u></p> <p>Pay and Accounts Officers (PAO) system is now functioning in all major departments involved in the execution of public works. The bills passed by the Executive Engineer are sent to PAO for issuing cheques. Presently, for bills received up to 25th of the month, payments are made by the 5th of next month. As payment to the contractors is being made only once a month, the progress of works is getting affected.</p> <p><u>Recommendation</u></p> <p>49. PAO payments may be made as suggested below:</p> <table border="1" data-bbox="597 1780 1235 1879"> <tr> <td data-bbox="597 1780 873 1879">Bills received during the period</td> <td data-bbox="873 1780 1235 1879">Payment to be arranged by PAO</td> </tr> </table>	Bills received during the period	Payment to be arranged by PAO	<p>Government</p> <p>Government</p> <p>Government</p> <p>Government</p> <p>Government</p>
Bills received during the period	Payment to be arranged by PAO				

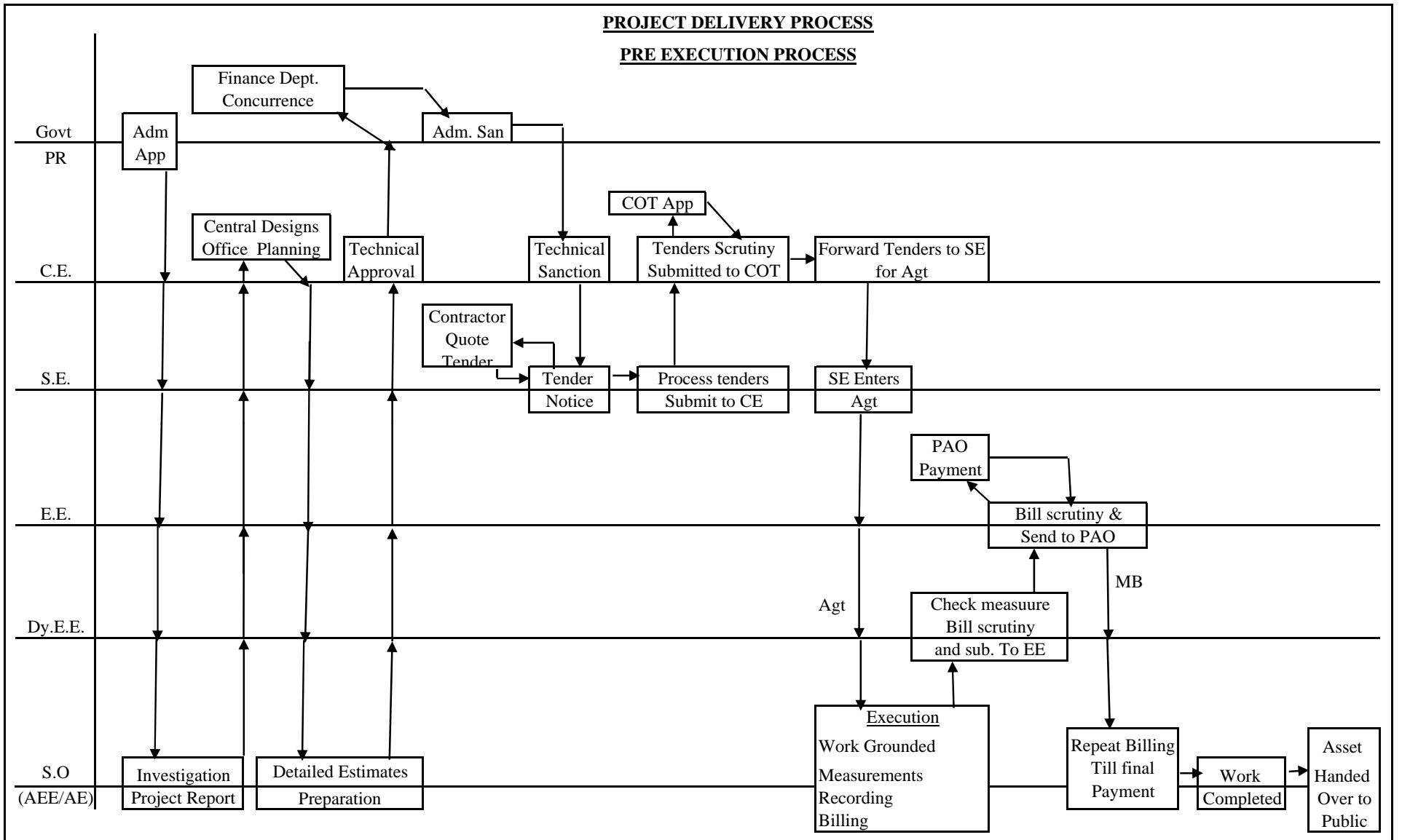
		5 th of the month to 25 th of the month	Before 5 th of next month	
		25 th of the month to 15 th of next month	Before 25 th of next month	
		<u>Master plan of works for each District</u>		
		<u>Background</u>		
		It is observed that projects undertaken by the departments are not based on actual felt needs of the Community.		
		<u>Recommendations</u>		
		50. A master plan should be prepared at the Mandal and Zilla Parishad level at the beginning of each year and works should be taken up accordingly keeping in view the availability of funds and priority of the projects.		Government
		<u>Meetings</u>		
		51. Review meetings for Engineers may be confined to 1 st week of the month leaving them the following 3 weeks for concentrating on supervision and inspection of works.		
		<u>Awareness as GOs</u>		
		52. Workshops may be organised once in 6 months at Circle level to brief engineering staff on the GOs released, in both technical and administrative matters, which are relevant to their work.		Department
		<u>Display Boards</u>		
		53. Display boards should compulsorily be erected at worksites giving details like description of works, estimated cost, name of the contractor, names of engineers, date of starting and proposed completion date. At present, this is being followed only in some cases.		
		<u>Inspection Works</u>		

		<p>54. Inspecting officers shall issue inspection notes at the time of inspection itself.</p> <p><u>Complaint Boxes</u></p> <p>55. In many offices of Engineering Departments, complaints/suggestion box was not seen. For successful feedback of Engineering Departments, all officers should exhibit complaints/suggestion box to the visitors and public at a prominent place.</p>	<p>Department</p> <p>Department</p>
<p>Powers to incur contingent expenditure on special occasions</p>		<p><u>Background</u></p> <p>It was expressed by several Engineers during regional workshops that it was becoming inevitable for them to spend significant amounts of money on hospitality charges for VIPs visits, etc. This was leading to a situation where the Engineering Departments are depending on the contractors to meet such expenditure. Similar is the case when foundation stones are laid and inaugurations are arranged. This is leading to a compromise on the quality of work.</p> <p><u>Recommendations</u></p> <p>56. In G.O. Ms. No. 358 dt 13-5-1963, all Departments in the Secretariat, and Heads of Departments were given powers to incur expenditure for laying foundation stone and opening ceremonies and such other Government functions. In view of the cost escalation, these amounts may now be revised in the range of Rupees Ten Thousand to Rupees One Lakh for each occasion based on the size of the project.</p> <p>57. To meet the expenditure for conducting other functions involving elected representatives, a separate provision may be made in the</p>	<p>Government</p> <p>Government</p>

		<p>budgets of the departments as may be required.</p>	
	<p>Convergence among the Departmental Heads</p>	<p><u>Convergence among Departments</u></p> <p><u>Background</u></p> <p>There is a need for convergence among different Engineering departments engaged in public works to bring in uniformity in system, procedures and practices. Through convergence, synergy can be achieved which will lead to economy, efficiency and effectiveness in the public works.</p> <p><u>Recommendation</u></p> <p>58. It is suggested that a coordination committee of all engineering departments undertaking public works in GoAP is formed with Engineers-in-Chiefs of the departments, which will meet once in 3 months to discuss the issues of common concern and to identify the best practices.</p>	<p>Government</p>

PROJECT DELIVERY PROCESS

PRE EXECUTION PROCESS



APPENDIX 1 SHEET - 1