

# Audit of Infrastructure Projects– Lessons from Audit Reports

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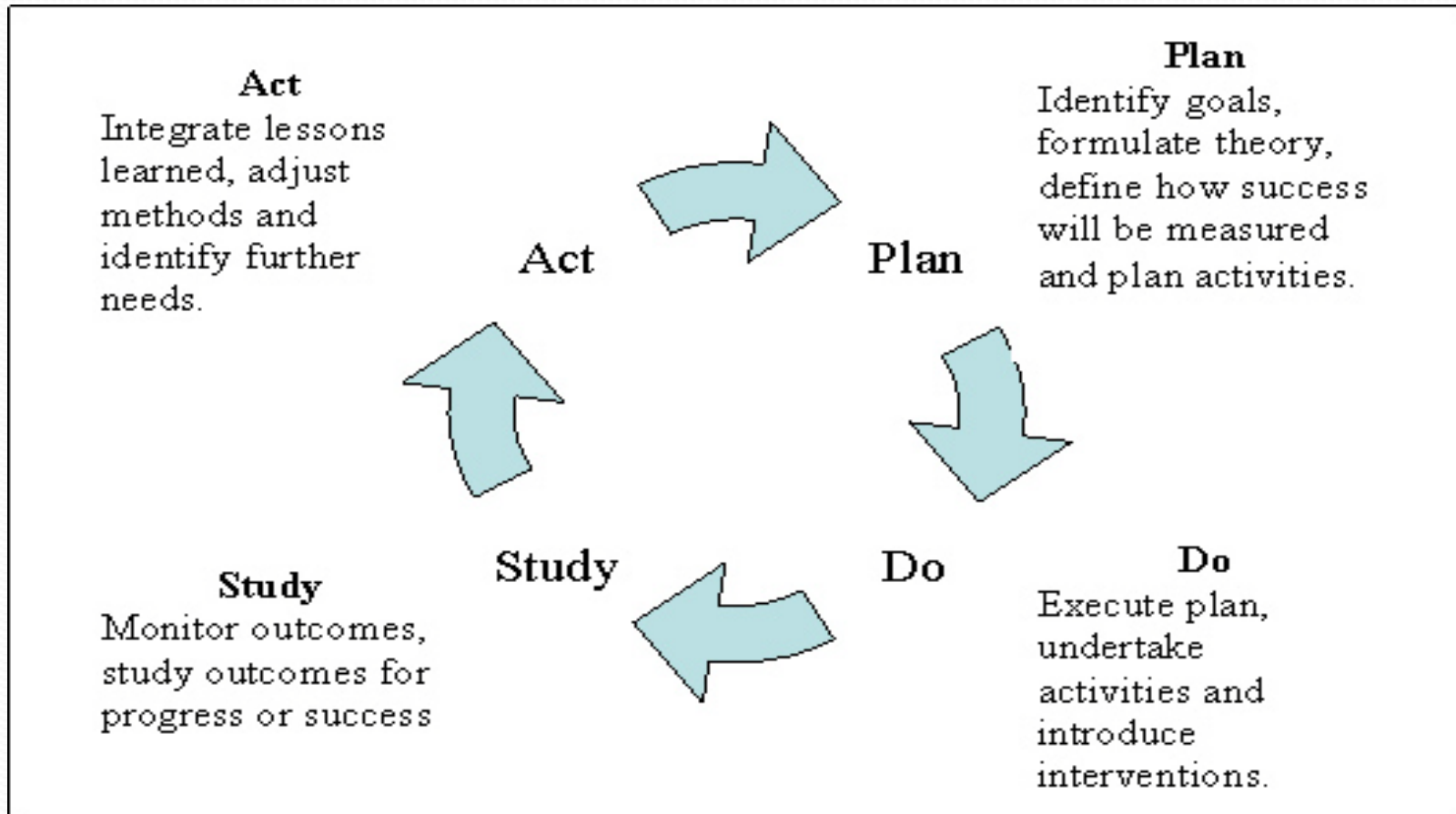
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- Session focuses on the following themes:
- Project Management-Key Issues [72 common questions.docx](#)
- Project Management and Audit Interface
- Case Studies – CAG’s Audit Reports on Audit of Infrastructure Projects – Lessons from Audit Reports for Effective Project Management

# Project Management – Deming Wheel



# What is Project management?

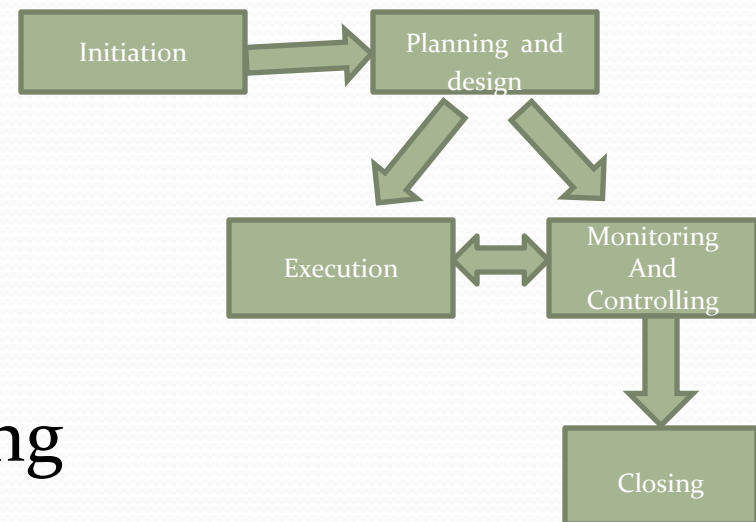
**Project management** is the discipline of planning, organising, securing and managing resources, to bring about the successful completion of specific project goals and objectives. A project is a temporary endeavor, having a defined beginning and end undertaken.

# Project management

- To meet unique **goals and objectives**.
- The primary challenge of project management is to achieve all of the project goals and objectives while honoring the preconceived project **constraints such as scope, time and budget**

# Project management

- The project management, specially for an Infra structure project, includes a number of elements detailed below:
- Initiation of Project
- Planning and Design
- Execution
- Monitoring and Controlling
- Closing



# Project management

- Initiation of the project should include
- Analysing the Business needs in a measurable goals
- Reviewing of current operations
- Analysis of cost and benefits
- Analysis of stakeholder, including users and support personnel
- Project charter including costs, tasks, deliverables and schedule

# Planning and Design

- Planning and Design: after initiation stage the project is planned to an appropriate level of details in respect of **time, cost, and resources to manage risks** during execution.
- Project planning generally consists of
- Determining how to plan
- Developing the scope statement

# Planning and Design

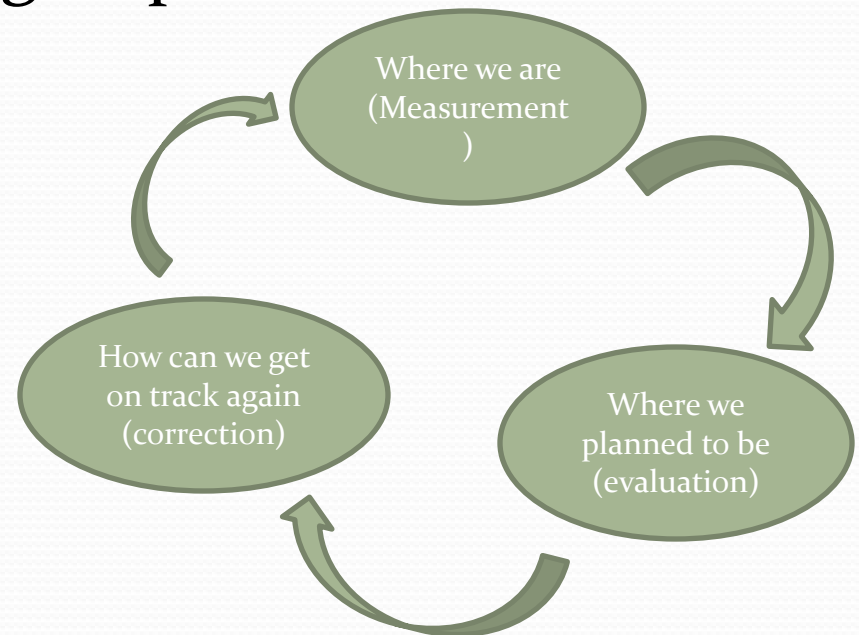
- Selecting the planning team
- Identifying the deliverables
- Identifying the activities needed to complete those deliverables
- Estimating the resources requirement for the activities
- Estimating the time and cost and
- Risk planning

# Execution

- Execution: execution consists of the processes used to complete the work defined in the project management plan to accomplish the project's requirements. It involves coordinating people and resources, as well as integrating and performing the activities of the project in accordance with project management plan. The deliverables are produced as output from the activities as defined in project management plan.

# Monitoring and Controlling

- Monitoring and Controlling: monitoring and controlling of execution of the project includes following steps
- Measuring the ongoing Project activities (Where we are)



# Monitoring and Controlling

- Monitoring the project variables (cost, effort, scope etc.) against the project management plan and the project performance baseline (Where we should be)
- Identify **corrective actions** to address issues and risks (How can we get on track again )

# Closing

- Closing: Closing includes the formal acceptance of the project and the ending thereof.
- This phase consists of
- Project close: finalise all activities across all of the process groups to formally close the project
- Contract closure: complete and settle each contract and close each contract applicable to the project.

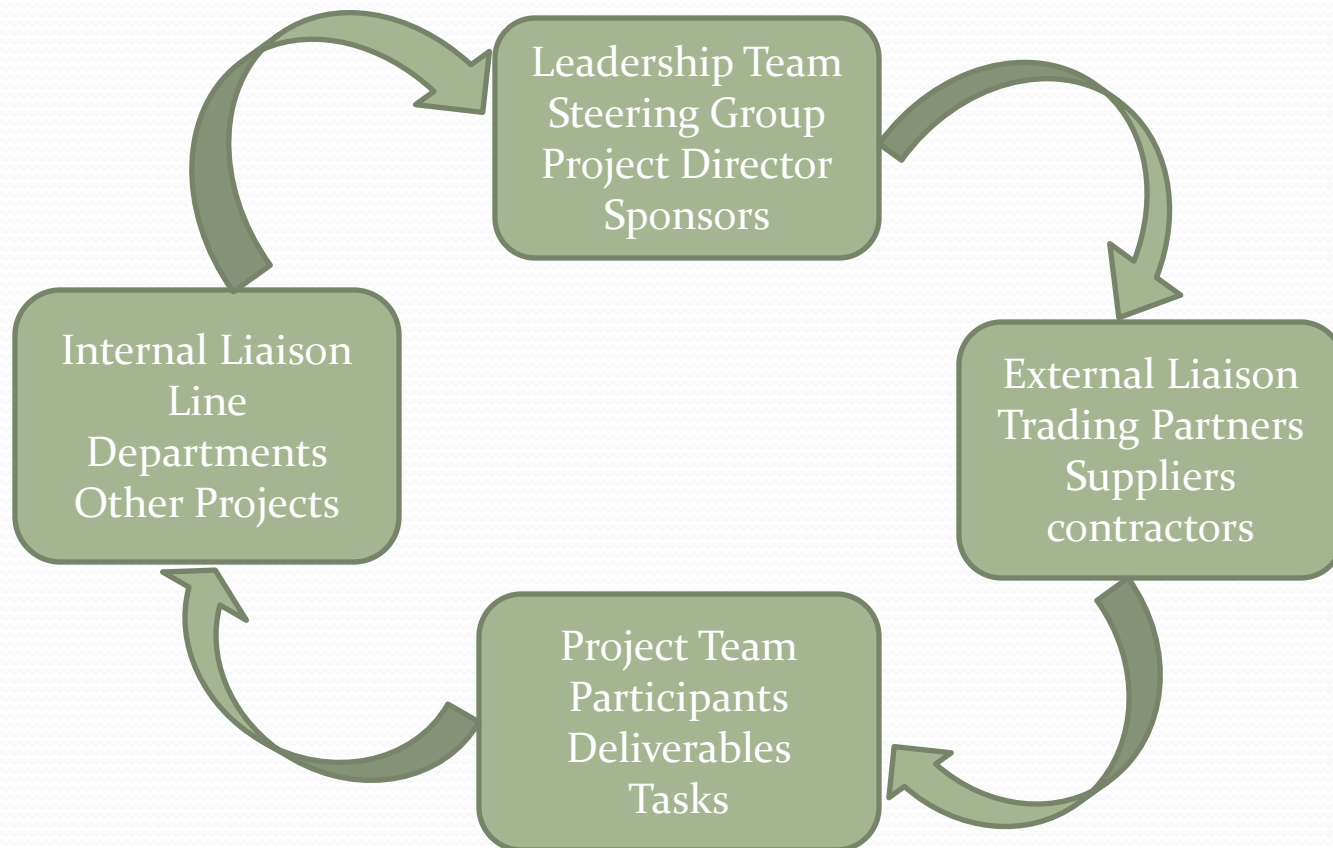
# 360° Responsibility of the Project Manager

- The project manager is responsible for every thing that required to make the project a success. The project manager is at centre of every thing relating to the project.
- 360° responsibility of project manager
- The Project Manager needs to manage the organisation's leadership and sponsors.
- The Project Manager is responsible for liaison with other departments, projects and initiatives with in the organisation taking in to accounts the needs and contributions of other internal functional groups

# 360° Responsibility of the Project Manager

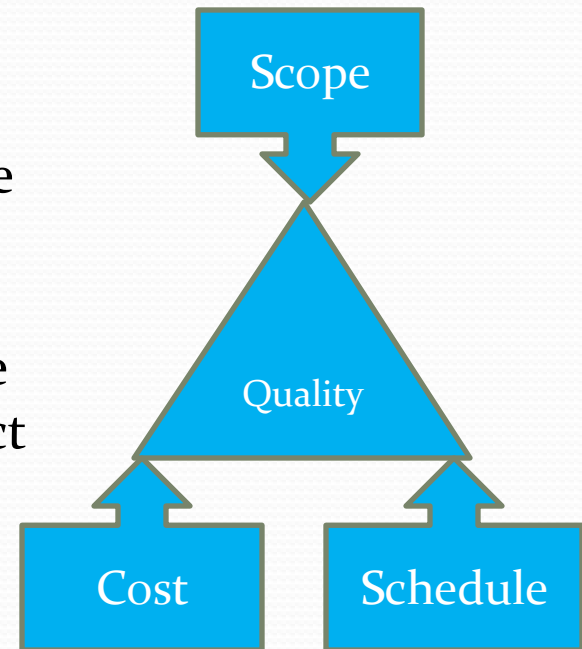
- The Project Manager has to keep the liaison with external parties such as the project's suppliers and contractors, customers, regulatory bodies and other third parties.
- The Project Manager has direct responsibility for the activities of all project participants, all project tasks and all deliverables.

# 360° Responsibility of the Project Manager



# Project Management Triangle

- Every project is to be performed and delivered under certain constraints. Traditionally these constraints have been listed as under
  - **Scope** : It refers what must be done to produce the project's end results
  - **Time** (schedule): Time constraint refers to the amount of time available to complete a project
  - **Cost** (Resources): The Cost constraint refers to the Budget amount available for the project



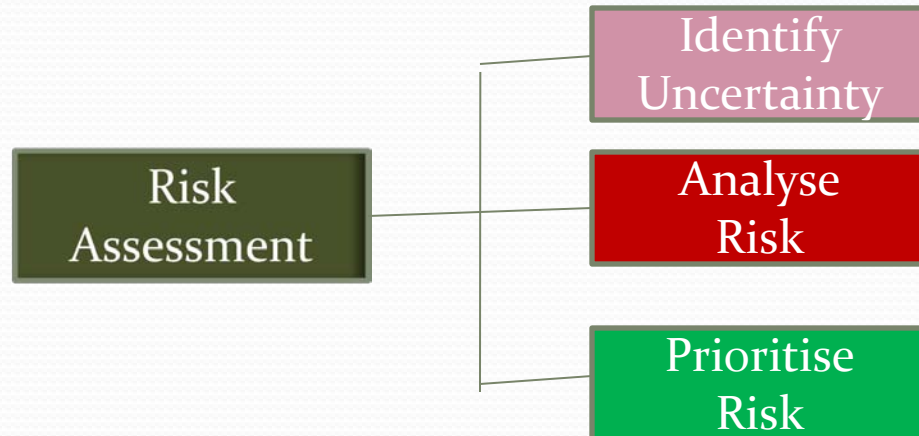
# Project risk management

- Risk : A risk is combination of uncertainties and constraints come in the way project. A project manager is required to remove the risk or to minimise it to the extent possible. The process to deal with the risk to the project may be divided in two phases.
- Risk Assessment and Risk Control



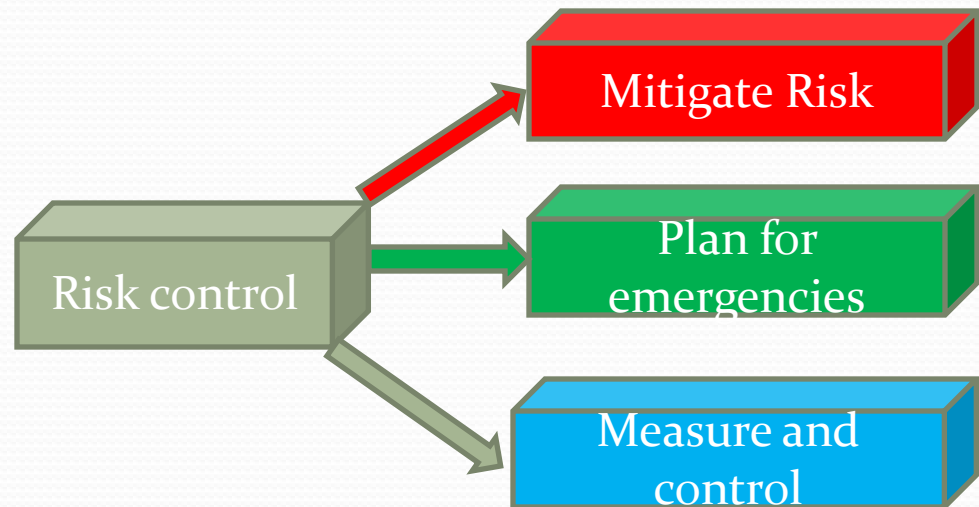
# Risk Assessment

- Risk Assessment: Following are the elements of the **Risk Assessment**
- Identify uncertainties and constraints
- Analyse Risk
- Prioritise Risk



# Risk Control

- Risk Control: Following are the elements of the **Risk Control**
- Mitigate Risks
- Plan for emergencies
- Measure and control



# Project management and audit

Audit as an analytical tool for Planning, Doing, Checking & Acting

Different Audits and role of audit- Internal Audit, External Audit  
Quality Management Systems Audits -eg. ISO EMS Audits

SAI Audit Methodology-Performance Audit integrating or separate  
Environmental and IT Audits; Financial and Compliance Audit

There are 72 common questions to be asked during project management audit [72 common questions.docx](#)



CAG's Report on  
Preparedness for the XIX  
Commonwealth Games 2010  
(July 2009)

# Major Audit findings in Preparedness of the Commonwealth Games -2010

The XIX Commonwealth Games was scheduled to be held in October 2010 at Delhi. An audit of 'Preparedness for XIX Commonwealth Games 2010' was conducted (March to May 2009) to gain an understanding of the progress of various projects and preparedness of different agencies for organizing the games and to identify significant risk that needed to be addressed and to provide an aid to the organizers in monitoring the progress and making midcourse corrections

# Objectives of Commonwealth Games 2010



- To deliver the best Commonwealth Games ever
- To build state of the art sporting and city infrastructure
- To create suitable environment and opportunities for the involvement of the citizens in the Games
- To showcase the culture and heritage of India
- To project India as an economic power and Delhi as a global destination
- To leave behind a lasting legacy

# Major Audit findings in Preparedness of the Commonwealth Games -2010

- In view of the complexity and multiplicity of activities and organizations and the progress of work, there is a need to rethink the governance model for the Games Project
- The games Village Project requires close monitoring and oversight to ensure successful and timely completion

# Major Audit findings in Preparedness of the Commonwealth Games -2010

- Out of 20 critical bridges and flyover projects, nine projects are assessed as high risk on account of slow progress
- Given the state of documentation supporting revenue generation estimates and the fact that a majority of the sponsorship revenue is expected in the form of “Value-in-kind”, there is no assurance that the Games would be revenue neutral

## Major Audit recommendations for Preparedness of the Commonwealth Games -2010

As an outcome of the audit, mainly following recommendations were offered in July 2010.

- *In view of the complexity and multiplicity of activities and the progress till date, there is a need to rethink the governance model for the Games Project as well as for similar mega-events in the future.*
- *The pending basic planning documents as well as pending operational plans for functional areas should be finalised on top priority so that these areas are fully activated for delivery as per schedule.*

# Major Audit recommendations for Preparedness of the Commonwealth Games -2010

- *In view of the fast approaching immovable deadline of October 2010, the OC should expedite approval of final venue designs and detailed specifications.*
- *Ministry of Sports and Sports Authority of India should accord heightened priority to the completion of the SPM Aquatics Complex, which is a high risk venue in our estimation.*

# Major Audit recommendations for Preparedness of the Commonwealth Games -2010

- *Venue owners should closely monitor the work execution by the implementing agencies.*
- *Although during the exit conference, MYAS indicated that they do not have any direct*
- *role in the grant of clearances as per the law, we believe it needs to assume leadership role in this regard, as this is critical to timely completion of venues.*

# Major Audit recommendations for Preparedness of the Commonwealth Games -2010

- *Ministry of Sports and venue owners should ensure completion of remaining works at all venues on priority basis by removal of hindrances like inadequate funds, delayed clearances, finalisation of scope of work and designs etc.*
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# Major Audit recommendations for Preparedness of the Commonwealth Games -2010

- *All efforts should be made to ensure that at least the revised timelines for the city infrastructure projects are adhered to. Closer monitoring is essential for this purpose.*
- *The problem of pending clearances/ NOCs from various agencies should be addressed on top priority at the highest level.*
- *Hindrance-free sites have also been a major bottleneck, and the issue of land acquisition needs to be addressed quickly.*

**CAG's Report No. PA 16 of 2008  
(Performance Audit)**

**Union Government (Commercial)  
Public Sector Undertakings  
Public Private Partnership in implementation  
of Road Projects by  
National Highways Authority of India**

# National Highways Authority of India

- ❖ Comptroller & Auditor General of India (CAG) reviews the performance of infrastructure projects and report it's findings through separate audit reports including stand alone performance audit reports.
- ❖ The National Highways Authority of India (Authority) was constituted with a mandate to upgrade the existing two-lane roads into four/six-lane high density corridors under National Highways Development Programme (NHDP).

# National Highways Authority of India

- ❖ To leverage scarce budgetary resources and secure ‘timely’ and ‘cost-effective’ service delivery, the Government opted for private sector participation in execution of the projects through Build, Operate and Transfer (BOT) mode.
- ❖ Audit had test check eight BOT projects out of the seventeen projects and examines various aspects of project implementation and assesses whether these PPP deals have effectively delivered a good value for money, taking into account the Government’s objectives.

# Major audit findings in National Highways Authority of India review

Following were the main audit findings:

- At the start of NHDP Phase-I, the Authority did not prepare a corporate/strategic plan which indicated the project priorities and scheduling and could be used as a monitoring mechanism.
- The internal guidelines from the Government to determine the mode of execution could not be issued for six years. Consequently, the Authority failed to systematically evaluate the relative merits and its financial implications in executing a project through BOT-Toll or BOT-Annuity.

# Major audit findings in National Highways Authority of India review

- Their informal system of concurrent review could not provide adequate assurance for project monitoring.
- Detailed Project Report (DPR) forms the basis of any project implementation. There were no DPRs in two BOT projects and the DPRs in respect of two other projects suffered from deficiencies in design, cost estimates and traffic projections.

# Major audit findings in National Highways Authority of India review

- There was no benchmark IRR in the financial models. As a result, the concession periods in Jaipur-Kishangarh and Delhi-Gurgaon projects were unduly stretched over long periods benefiting the Concessionaires by an estimated Rs.121.63 crore and Rs.187.77 crore respectively.
- The Authority was able to complete only five of the 17 PPP projects. There were inordinate delays in remaining projects ranging between 2 and 42 months.

# Major audit findings in National Highways Authority of India review

- The concession agreements provided for 'acceptable' and 'desirable' levels of roughness measure of the roads to be constructed. In all locations test checked, the 'acceptable' levels of roughness had been achieved, only in *37 per cent locations*.
- The deflection studies carried out in 82 locations indicated the need for overlay of bituminous concrete in 28 locations.
- There was non-compliance of combined thickness of wet mix macadam (WMM) and granular sub-base (GSB) requirement .
- Inadequacies in the degree of compaction of granular layers were noticed in five projects

# Major audit findings in National Highways Authority of India review

- As per agreements Concessionaires were to furnish copies of escrow accounts for periodical scrutiny by the Authority.
- By failing to review this account in three BOT-toll projects and by not appointing an independent auditor in any of the four projects, the Authority has denied itself the benefits of these important control tools.
- Although concession agreements provide for levy of penalties for deficient/ nonperformance, it failed to impose penalty of Rs.28.23 crore due in three out of eight projects test-checked.

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# Major audit recommendations in National Highways Authority of India review

- ❖ The Authority should strengthen its planning machinery to monitor and take corrective action as required for timely execution of projects
- ❖ The Authority should strengthen the supervision mechanism by improving the quality assurance systems and methodologies
- ❖ The Authority should ensure commencement of toll collection through timely action to prevent loss of revenue

# Major audit recommendations in National Highways Authority of India review

- ❖ The Authority should ensure that the agreement clauses to opening and periodical submission of “escrow account” and the appointment of independent auditors are complied with
- ❖ The Authority should ensure that agreement clauses relating to levy of penalty are implemented in spirit
- ❖ The Authority should incorporate penalty clauses for non-achievement of financial closure and individual project milestones

CAG's Report No. CA 2 of 2008  
(Compliance Audit)  
Union Audit (Autonomous Bodies)

Chapter VIII:  
Improper compliance of agreement for privatization of  
the container terminal operations  
relating to Chennai Port Trust

## Major audit findings in Chennai Port Trust

Chennai Port Trust (ChPT) leased out its four berths in the container terminal to Chennai Container Terminal Limited (CCTL) in August 2001 for a period of 30 years.

Audit scrutiny revealed the following:

- ChPT accepted royalty without verification of accounts as their auditors were not permitted to conduct detailed verification by CCTL

## Major audit findings in Chennai Port Trust

- ChPT failed to ensure the fulfillment of the agreement conditions regarding non-transshipment traffic resulting in loss of compensation. ChPT accepted audit's contention and recovered royalty of Rs.47.77 crore and interest of Rs. 20.09 crore in March 2008 from CCTL
- ChPT did not monitor closely the replacement of plant/equipment by CCTL as envisaged in the lease agreement

# Major audit recommendations in Chennai Port Trust

- ChPT should evolve a system for proper verification of the revenue generated by CCTL with due access to their books of accounts
- The system to verify the correctness of the achievement on account of non-transshipment traffic reported by CCTL needed to be strengthened