

# Quality Management Audit Procedure



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## Overview

This document is intended to provide Quality Management Audit guidance as it relates to the delivery of capital projects at the New Jersey Department of Transportation (NJDOT).

The specific objective of this guidance is to enable the NJDOT to consistently and effectively assess the level of program and/or project quality for its Designers.

## Applicability

This guidance is to be managed by the Program Management Office (PMO). The PMO Executive Manager will decide on the Quality Management Audit applicability on a case by case basis.

## Audience

The primary audience for this guidance is the PMO, Project Managers and Audit Team members.

## Using this Document

This guidance is made up of several sections. The sections will apply to all Quality Management Audits. The sections are as follows:

**Overview:** Overview explains the purpose, applicability, and use of the document.

**Quality Management Audit Selection:** The Quality Management Audit Selections Process section provides some explanation about typical audit objectives, typical audit approaches and the external audit request process.

**Quality Management Audit Procedure:** The Quality Management Audit Procedure section discusses the different procedures as they relate to the five different types of audits. The five different types of audits are; designer audit (with or without notice), project audit (with or without notice), and special circumstance audit.

**Quality Management Audit Teams:** The Quality Management Audit Teams section provides specific guidance for selecting team members and team make-up for the five types of audits.

**Quality Management Audit Results:** The Quality Management Audit Results section provides information on the actions taken as a result of an audit and the impacts to the designer.

**Quality Management Audit Lessons Learned:** The Quality Management Audit Lessons Learned section provides specific guidance for lessons learned.

**Attachments:** Audit Checklists, Audit Report Template and Audit Request Form

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## General Terms

This section provides definitions for some general terms used in this document.

**Audit Team Leader** – the leader of the Audit team that performs a Quality Management Audit.

**Corrective Action Plan** – a plan created by the designer to address errors identified as a result of a Quality Management Audit.

**Designer** – the entity that performs design services on a NJDOT capital project. The term “designer” refers to both a consultant designer and the NJDOT in-house designer.

**Designer Audit** – a type of Quality Management Audit that assesses if the designer’s internal quality management policies and procedures exist and verifies that the policies and procedures are being used.

**Program Management Office (PMO)** – the NJDOT service area that is responsible for performing Quality Management Audits.

**Project Audit** – a type of Quality Management Audit that assesses a designer’s level of quality on a NJDOT capital project. Audit activities may include, but are not limited to, interviewing designer personnel, reviewing contract documents (plans, drawings, specifications and construction details), studying records, reports and checklists, and observing activities.

**Quality Management Audit** – a tool that the PMO uses to assess a designer’s level of quality. Quality Management Audit is the collective name for the five types of audits.

**Quality Management Plan (QMP)** – an approved plan that documents to the NJDOT that the designer has internal quality management policies and procedures. The plan contains fourteen elements and sub-element headings.

**Special Circumstance Audits** – a type of Quality Management Audit that assess a special quality circumstance, not covered by the Designer Audit or the Project Audit.

**Verification Audit** – an audit that verifies that the items identified in the Corrective Action Plan have been addressed.

## Quality Management Audit Selection Process

The two main categories of Quality Management Audits are the Designer Audit and the Project Audit.

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## **Designer Audit**

A designer audit may be performed at any time during the design process of a NJDOT capital project. Selection of the designer, type of audit and when the audit is performed shall be at the sole discretion of the PMO Executive Manager. The designer selection can be based on, but not limited to, designer performance, designer audit history and designer's compliance with NJDOT Quality Standards.

## **Project Audit**

A project audit selection can be based on overall project performance for scope, schedule, budget, project quality as it relates to project plans, specifications, estimates, project complexity and project risk assessment. Project selection, the type of audit and when the audit is performed shall be at the sole discretion of the PMO Executive Manager. A project Audit may be performed at any time during the design process of a NJDOT capital project.

The selection of projects that will be audited will be based on a two-phase developmental approach. In Phase One, capital projects selected for audit will be based on a randomized selection. After conducting a substantive number of audits, the Program Management Office will enter Phase Two. Phase Two will consist of selecting capital projects to be audited based on specific evaluative criteria. This criteria will be based on lessons learned and information compiled from Phase One audits. Phase One and Phase Two audits will be objective, fair, and unbiased.

A Designer Audit and a Project Audit may be performed concurrently, if deemed appropriate by the PMO Executive Manager.

## **Typical Audit Objectives**

The two main typical audit objectives are to ensure that there is compliance with NJDOT Quality Standards and to ensure the designers are complying with the quality procedures that have been documented in their approved Quality Management Plan.

## **Typical Audit Approaches**

The two main audit approaches are with notice and without notice. The decision as to which approach to use shall be the sole discretion of the PMO Executive Manager.

## **External Audit Request Process**

An external audit request is usually generated from a project stakeholder. Stakeholders may be the Project Manager, Executive Regional Manager, NJDOT Director, FHWA, Permitting and Regulatory Agencies and Community Representatives.

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The external audit request process begins with the project stakeholder completing and forwarding the Quality Management External Audit Request Form (see attachments). Once the PMO Executive Manager and the stakeholder agree that the audit is warranted, the audit is conducted and copies of the audit results are provided to the project stakeholder.

## **Quality Management Audit Procedure**

This section contains general guidance for the Quality Management Audit Procedure for each of the Audit types. Quality Management Audits can be performed at any point in a project's lifecycle (Design through Construction close-out). Each audit procedure is subject to change and all changes require the approval of the PMO Executive Manager.

### **Designer Audit (with notice)**

The following is the general procedure for a Designer Audit with notice:

- The PMO Executive Manager assesses the objective of the Quality Management Audit to ensure that a "Designer Audit with notice" meets the audit needs and goals.
- The PMO Executive Manager selects the audit team member(s).
- The audit team leader notifies the designer that an audit will be performed.
- The audit team leader and/or audit team member(s) perform the audit. The audit will focus on the fourteen required elements that comprise the designer's Quality Management Plan. The PMO may require the designer to substantiate how any or all of the required 14 elements are actually being implemented during the design process and request verification of the internal procedures.
- The audit team leader completes the Quality Management Designer Audit Checklist (see attachments).
- Audit team member(s) record the audit results in the Quality Management Audit Report (see attachments).
- The audit team leader sends a copy of the audit report to the designer.
- If necessary, inform the designer to create a Corrective Action Plan.
- The Designer submits the Corrective Action Plan to the audit team leader.
- The audit team leader and/or audit team member(s) perform a Verification Audit of the Corrective Action Plan.

### **Designer Audit (without notice)**

The procedure to perform a "Designer Audit without notice" is the same as above, with the exception of designer notification prior to the audit.

### **Project Audit (with notice)**

The following is the general procedure for a project audit with notice:

- The PMO Executive Manager assesses the objective of the Quality Management Audit to ensure that a "project audit with notice" meets the audit needs and goals.
- The PMO Executive Manager selects the audit team member(s).

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- The audit team leader notifies the designer that an audit will be performed.
- The Audit team leader and/or audit team member(s) perform the audit.
- Some of the functions that the audit team may perform include, but will be not limited to, verification of contract documents, interviews with design-personnel and support staff, and investigation of various project records, documentation, and reports. Project documentation will be subjected to assessment against the project specific information contained in the Quality Checklist.
- The audit team leader completes the Quality Management Project Audit Checklist (see attachments).
- Audit team member(s) record the audit results in the Quality Management Audit Report (see attachments).
- The audit team leader sends a copy of the audit report to the designer.
- If necessary, the audit team leader informs the designer to create a Corrective Action Plan.
- The designer submits the Corrective Action Plan to the audit team leader.
- The audit team leader and/or audit team member(s) perform a Verification Audit of the Corrective Action Plan.

### **Project Audit (without notice)**

The procedure to perform a “Project Audit without notice” is the same as above, with the exception of designer notification.

### **Special Circumstance Audit**

The following is the general procedure for a Special Circumstance Audit:

- The PMO Executive Manager receives a request Special Circumstance Audit from a project stakeholder.
- The PMO Executive Manager reviews the audit justification and decides whether the audit is warranted.
- The PMO Executive Manager selects the audit team member(s).
- The audit team leader may notify the designer that an audit will be performed.
- The audit team leader and/or audit team member(s) perform the audit.
- Audit team member(s) record the audit results in the Quality Management Audit Report (see attachments).
- The audit team leader sends a copy of the audit report to the designer and the project stakeholder.
- If necessary, the audit team leader informs the designer to create a Corrective Action Plan.
- The designer submits the Corrective Action Plan to the audit team leader.
- The audit team leader and/or audit team member(s) perform a Verification Audit of the Corrective Action Plan.

## **Quality Management Audit Teams**

Quality Management Audit Teams can be made up of one individual or a group of individuals. They are comprised of Subject Matter Experts (SME’s) or independent consultants or contractors familiar with design and construction practices, as necessary to perform the audit. Additional NJDOT staff selected to perform audits will be intimately familiar with Quality Management principles, the NJDOT Quality Management Plan Procedure, and the approved corporate Quality Management Plan. The individual(s) who perform the audit shall not be individuals who are involved with the project design.

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## **Basic Qualities For An Audit Team Member**

The basic qualities for an audit team member should include individuals that are organized, conscientious, familiar with design and construction practices, observant, and possess integrity.

Selection of the audit team member is at the sole discretion of the PMO Executive Manager.

## **Team Make-Up for the Five Types Of Audits**

The team make up for the five types of audits can vary, but the general structure is the following:

- Audit team leader
- Audit team member(s)

The Team make-up and structure shall be at the sole discretion of the PMO Executive Manager.

## **Quality Management Audit Results**

The PMO will review all Quality Management audit reports. Based on the type of audit and audit findings, the PMO may present a copy of the report to CPM Senior Management, the Executive Regional Manager, the Project Manager, the designer, project stakeholders and/or FHWA. The decision as to who the report is presented to rests solely with the PMO Executive Manager. The PMO Executive Manager will base this decision upon feedback from the Project Manager/Executive Regional Manager who will provide the proposed distribution list. The audit results distribution will most likely include *key* stakeholders and will be on a need-to-know basis due to the confidentiality of the audit results.

## **Actions Taken**

The actions taken will vary depending upon the type of audit, audit findings and the need for a Corrective Action Plan.

## **Impacts to the Designer**

Negative impacts to the designer can include, but are not limited to:

- A stoppage of current work
- Loss of the designer's prequalification to perform NJDOT work

## **Corrective Action Plan**

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The findings in the audit report may indicate that a Corrective Action Plan is needed. When instructed by the audit team leader, the designer will prepare and submit the Plan to the audit team leader for review. The purpose of the Plan is to address errors identified as a result of a Quality Management Audit. The Plan action items may include, but are not limited to, the designer revising internal procedures for quality or project-specific quality management controls.

### **Verification Audit**

If a Corrective Action Plan is needed, a Verification Audit is required to ensure that the Corrective Action Plan action items have been addressed. The audit team leader will assign an audit team member to conduct the Verification Audit.

### **Quality Management Audit Lessons Learned**

The Quality Management audit reports will be analyzed and evaluated by the Program Management Office Executive Manager and PMO staff and commonalities among audit reports will be compiled. Recommendations will be made to NJDOT Senior Management based on the evaluation of the audit reports. After Senior Management approval, recommendations towards improving overall quality will be implemented. Recommendations and findings may be included in a Quality Management Audit Lessons Learned log, as well.

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## Example of Quality Management Request Form

<b>CONTACT INFORMATION:</b>	
NAME:	DATE:
ORGANIZATION:	
PHONE NUMBER:	EMAIL:
<b>AUDIT TYPE:</b> <input type="checkbox"/> PROJECT AUDIT <input type="checkbox"/> DESIGNER AUDIT <input type="checkbox"/> SPECIAL CIRCUMSTANCE AUDIT	
<b>AUDIT OBJECTIVE:</b>	
<b>AUDIT JUSTIFICATION:</b>	
<b><u>PMO USE ONLY:</u></b>	
IS AUDIT WARRANTED? : <input type="checkbox"/> YES <input type="checkbox"/> NO	

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## Quality Management Designer Audit Checklist

DESIGNER:

AUDIT TEAM LEADER:

DATE:

### Audit Activities Conducted

#### Quality Management Plan Status

- Approved
- Submitted
- Not Submitted
- Other, specify \_\_\_\_\_

#### Quality Management Plan verification

- Entire approved QMP
- Specific element
- Other, specify \_\_\_\_\_

#### Quality Management Plan element verification

- Management Responsibility
- Quality Documentation
- Design Review
- Design Control
- Document Control
- Control of Consultants and Sub-Consultants
- Control of Department Supplied Materials
- Design Process Control
- Control of Non-Conforming Design
- Corrective and Preventive Action
- Control of Quality Records
- Quality Audits
- Training
- Handling, Storage, Packaging, Preservation and Delivery
- Other, specify \_\_\_\_\_
- Corrective Action Plan is needed?

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## Quality Management Project Audit Checklist

**PROJECT:**

**DESIGNER:**

**AUDIT TEAM LEADER:**

**DATE:**

### Audit Activities Conducted

- Designer personnel interviewed
- Company Principal
- QA/QC Manager
- Project Manager
- Supervisor
- Support staff
- Other, specify \_\_\_\_\_
- Contract documents reviewed
- NJDOT project plans
- Drawings
- Specifications
- Construction details
- Other, specify \_\_\_\_\_
- Records reviewed
- Project Letters
- Project e-mails
- Project Invoices
- Other, specify \_\_\_\_\_
- Reports reviewed
- Project status reports
- Environmental reports
- Structural reports
- Other, specify \_\_\_\_\_
- Checklists reviewed
- Other, specify \_\_\_\_\_
- Observations
- Designer personnel
- Office equipment
- Other, specify \_\_\_\_\_
- Corrective Action Plan is needed?

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## Quality Management Audit Report Template

<b>REPORT NAME:</b> _____ <b>AUDIT DATE:</b> _____ <b>AUDIT TYPE:</b> _____ <b>AUDIT TEAM LEADER:</b> _____
<b>Audit Summary:</b>
<b>Audit objective:</b>
<b>Audit Participants:</b>
<b>Checklist(s)/Guideline(s) Used:</b>
<b>Documentation/Work Products/Activity Examined:</b>
<b>Brief Descriptions of substandard issues:</b>
<b>Impact of Issues:</b> <input type="checkbox"/> Serious <input type="checkbox"/> Critical <input type="checkbox"/> Major <input type="checkbox"/> Moderate <input type="checkbox"/> Minor <input type="checkbox"/> None
<b>Audit Status:</b> <input type="checkbox"/> Substandard issues found <input type="checkbox"/> Corrective Action Plan is needed <input type="checkbox"/> No issues found <input type="checkbox"/> Resolution, Without Any Changes <input type="checkbox"/> Escalation to Senior Management needed for immediate attention
<b>Audit Recommendations:</b> <input type="checkbox"/> Acceptable Process/Procedures <input type="checkbox"/> Process/Procedures conditionally acceptable subject to addressing action items below <input type="checkbox"/> Unacceptable Process/Procedures
<b>FINDINGS/ CORRECTIVE ACTIONS/ACTION ITEMS</b>

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