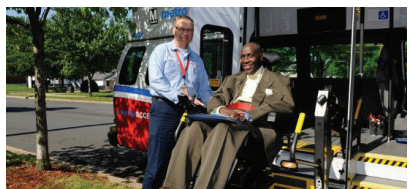




Quality Management System Plan (QMSP)

The Washington Metropolitan Area Transit Authority
September 2021



Quality Assurance, Internal Compliance & Oversight (QICO)
Promoting Transparency, Accountability, & Public Confidence



REVISION HISTORY

Revision No.	Revision Date	Description of Changes
0.1	06.13.17	Draft
0.2	07.14.17	Re-outlined and re-formatted per June 2017 QICO input
0.3	08.04.17	Updates and corrections to body text, visual aids, and attachments; additional format enhancements for consistency and clarity
1.0	08.11.17	First Production Version
1.1	01.26.18	Updates to responsibility matrix and organization charts based on organizational changes; Enhancements to visual aids; Additions to text regarding the approach to Internal Reviews and Quality Assessments and associated appended procedures as well as terms in the Definitions section
1.2	06.01.18	Updates to QMS documentation hierarchy in Section 2.2.3 and changed "Forms" to "Forms & Records"; addition of General Counsel as a top level department to Section 2.3.2.1 org chart, and QICO org chart as well as QICO responsibilities. Addition of "discrepancies" to definition section; modified attached QMP template (Appendix 4.6)
1.3	08.07.18	Added customer satisfaction component to Quality Policy on approval page and 2.2.1.2; Section 3.10 – re-defined "Quality Records" to improve applicability throughout WMATA; Added list of all core QMS Procedures to Section 4.5; In Section 2.1 Core QMS Standards, added detail to indicate that the top level Core QMS Standards Procedures do not require separate signatures from the GM, the Chief of INCP, and the Managing Director of QICO; Added relevance/integration of existing WMATA documents to this QMSP in Document Control Section 3.2.7
2.0	09.20.21	Revised QMSP to include safety language/verbiage in order to account for the Safety Management System (see Section 1.2.3), as per FTA guidelines (49 CFR Part 673); this includes the addition of relevant acronyms and definitions, changes in roles and responsibilities, updates to relevant graphics, etc.; updated org chart in Section 2.3.2.1; Section 2.3.3 responsibility matrix updated with new departments and responsibilities; Section 2.4.1 QICO org chart updated; Section 2.4.2.2 added internal safety reviews and safety compliance; Section 3.5 added statement on control of process changes; Section 3.11.2 revised for addition of definitions related to audits and assessments; added 9 th top level Dept.; added roles of quality in design (Section 3.1) and procurement (Section 3.3) activities; Section 3.12 extended requirements for QMS training and familiarization to consultants and contractors; revised overall QMSP to meet requirements of the FTA's Quality Management System Guidelines (October 2019); replaced "SSPP" with "ASP" throughout the document. Updated WMATA Context statistics, updated all references to core standards to "15 core QMS Standards", added digital signature requirement and definition, added supervisor

		definition and QMSP CBT training requirements, Added ROCC to QMSP implementation departments, updated CAPD in responsibility matrix, added information on self-assessments, added Risk Management Matrix, and ASP reference. Removed document status under reference documents and added verbiage about WMSC CAP process. Updated Chief to Executive Vice President. Updated all references to level to top level.
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WMATA QUALITY POLICY

All work must be performed to meet or exceed WMATA standards to ensure the safety of our employees, contractors and traveling public, while consistently delivering quality service and customer satisfaction.

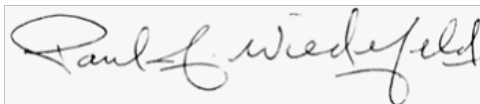
MANAGEMENT COMMITMENT

The General Manager is committed to:

- Ensuring that the quality policy is communicated to all employees and applied across WMATA through training,
- Full compliance with policy and quality-related processes, practices, programs, and procedures at all levels of the organization, and
- Providing instruction, training, evaluation, and supervision necessary to achieve the required levels of competence within each department.

All WMATA employees, from executive management to the front-line, as well as contractors and suppliers/vendors, are expected to adhere to the quality principles, guidelines, and requirements identified in this Quality Management System Plan (QMSP). To ensure full compliance within WMATA, the Office of Quality Assurance, Internal Compliance & Oversight (QICO) is granted access and cooperation from all departments and contractors in support of assessments, reviews, and spot checks.

For and on behalf of the Washington Metropolitan Area Transit Authority,



9/29/21

Paul J. Wiedefeld
General Manager and CEO

Date

Eric Christensen
E022571 WMATA

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Christensen E022571 WMATA
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9/29/21

Eric Christensen
*Executive Vice President, Internal
Compliance (INCP)*

Date

Hakim
Davis

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Date: 2021.09.29
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9/29/21

Hakim Davis
*Vice President
Quality Assurance, Internal Compliance & Oversight (QICO)*

Date

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PREFACE

The Office of Quality Assurance, Internal Compliance and Oversight (QICO) developed this Quality Management System Plan (QMSP) for the Washington Metropolitan Area Transit Authority (WMATA, “Metro”, or “the Authority”) to describe how the agency defines and approaches quality.

The QMSP represents a governing document and guiding vision to direct and focus what is a multi-year effort, to comprehensively implement a WMATA Quality Management System (QMS). This document lays out the structure and responsibilities for managing quality in every department, for every process, every time.

This document provides a brief introduction to the Quality Management System and its importance to WMATA, followed by a detailed overview of WMATA’s plan and framework to implement it. Subsequent sections provide specific guidance on core QMS standards.

This plan is a living document that is subject to future revisions to accommodate changes in the organization. Please join us in the implementation of this ambitious but essential program to assure the continued future delivery of quality services to the entire region.

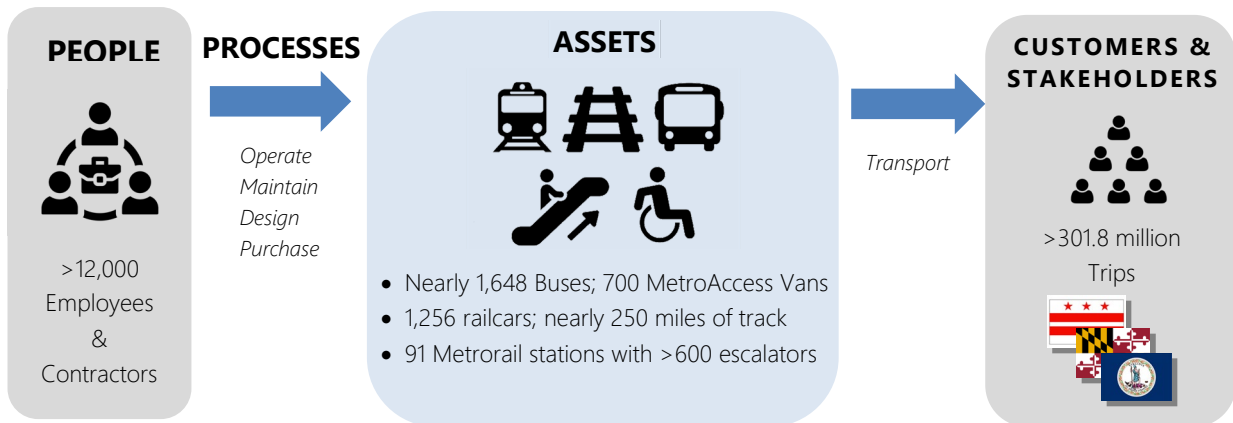


Hakim Davis
Vice President
Office of Quality Assurance, Internal Compliance, & Oversight (QICO)
Washington Metropolitan Area Transit Authority (WMATA)

1 QUALITY MANAGEMENT: PURPOSE & NEED

1.1 WMATA CONTEXT

Every day, a vast number of people and assets come together at WMATA to operate Washington, DC's regional public transportation system:



Additionally, WMATA's Capital Improvement Program expends roughly \$2 billion dollars per year to rehabilitate, replace, and expand the asset base.

An organization as large, complex, and critical as WMATA, with countless daily interactions and handoffs between thousands of people and thousands of assets, justifies a comprehensive and coordinated Quality Management System to assure it is meeting the requirements of its stakeholders, particularly those of its riding customers, member jurisdictions, and the regulations established by oversight bodies.

1.2 QUALITY MANAGEMENT

A quality management system (QMS) is a formalized system that documents processes, procedures, and responsibilities for achieving quality policies and objectives. A QMS helps coordinate and direct an organization's activities to meet customer and regulatory requirements and improve its effectiveness and efficiency on a continuous basis.

- American Society for Quality

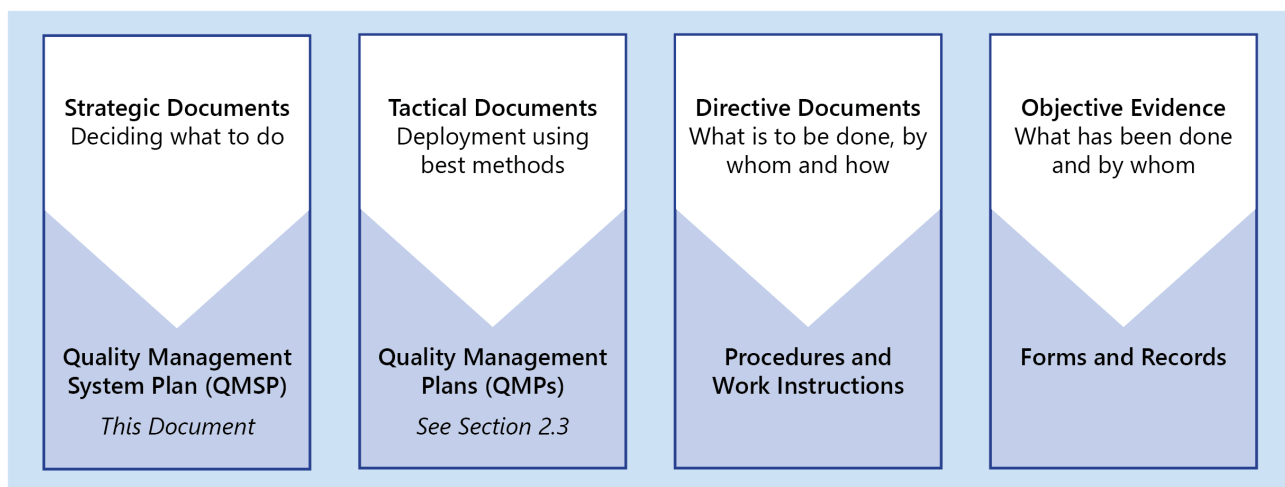
1.2.1 QMS Overview

An effective quality management system:

- Promotes reliability, with quality assets and services performing consistently, without fail
- Reduces wasted time and materials
- Defines and controls processes
- Promotes continuous process improvement
- Maximizes overall efficiency in providing assets and services
- Forms and communicates expectations, engaging employees
- Identifies and prioritizes training opportunities and requirements
- Shifts focus from reactive (correcting failures) to proactive (preventing failures)

The QMS affects every aspect of an organization's operations and performance. The QMS integrates quality policy throughout the organization by creating a common language and describing common quality principles for use by the entire organization. The QMS includes all documents that together specify quality requirements, resources, and practices, including the activities and processes necessary to deliver assets, services, projects, contracts, and tasks.

It comprises documents with increasing levels of specificity:



1.2.2 The Applicability of Quality at WMATA

In recent decades, large U.S. transit systems have successfully adopted and implemented Quality Management Systems for major federally-funded capital projects, as per Federal Transit Administration (FTA) requirements and guidance. The quality management framework can be applied not only to major expansion projects, but also to the ongoing operation and maintenance of the transportation system.

In the establishment of standardized and comprehensive strategic, tactical, and directive documents governing the day-to-day work of WMATA departments and offices, these can be identified and structured based on several components/perspectives of quality, including:

- Asset Quality: Ensuring that WMATA's assets meet the requirements of policies, procedures, specifications, contract documents, industry practices, regulations, and other applicable documents.
- Construction Quality: The organization, procedures, inspections, tests, and documentation implemented by WMATA, construction management consultants, and/or contractors to ensure that construction work, materials, and services meet design, contract, and regulatory requirements.
- Customer Service Quality: The collection and analysis of customer feedback, internal communication, and adoption of strategies to enhance customer service and satisfaction.
- Design Quality: The organization, procedures, and documents used to control and verify that designs meet the specified design criteria, contractual requirements, and agency regulations.
- Maintenance Quality: The organization, procedures, inspections, tests, and documentation implemented by WMATA, its consultants, and its contractors to ensure safety and reliability through proper maintenance of assets.
- Manufacturing Quality: The procedures, inspections, tests, and documentation used by manufacturers to ensure that purchased assets meet WMATA's specified requirements.
- Service Delivery Quality: The organization, procedures, inspections, tests, and documentation implemented by WMATA, its consultants, and its contractors to ensure the safety and reliability of its facilities and operations.
- Procurement Quality: The procedures employed to ensure that purchased assets and services meet WMATA's specified requirements.

1.2.3 WMATA Safety Management System (SMS) and WMATA QMS

The Public Transportation Agency Safety Plan (PTASP) final rule (49 CFR Part 673, effective July 2019) requires WMATA, as a transit authority receiving public funding/financial assistance, to develop its own agency safety plan, which includes the processes and procedures necessary for implementing a Safety Management System (SMS). WMATA's SMS is a comprehensive and collaborative management decision support system that brings management and labor together to build on the existing safety focus and foundation.

The SMS is a formal, top-down, WMATA-wide, data-driven approach to managing safety risk, assuring the effectiveness of safety in accordance with FTA SMS components of a safety plan:

- Safety Management Policy
- Safety Risk Management
- Safety Assurance
- Safety Promotion

As part of WMATA's commitment to providing an environment where safety is the most critical component of how business is conducted, this QMSP aligns with the SMS. Examples include the use of personal protective equipment (PPE) in work instructions, procedures from the Metro Transit Police Department (MTPD), and cyber-security policies and procedures from the Office of Information Technology (IT).

Any relevant hazards and risks associated with the processes within these quality documents are mitigated and continually monitored for safety. WMATA's QMS and all relevant quality documentation have effective communication practices in place, including adequate quality and safety training, to ensure quality and safety in the workplace.

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WMATA QUALITY MANAGEMENT SYSTEM PLAN

This Quality Management System Plan is used both internally and externally. It guides employees through WMATA's expectations and standards that are met and maintained to ensure compliance with requirements. The responsibilities, procedures, and documents comprising the QMS, including this QMSP, apply to all offices, departments, and projects within WMATA's responsibility. The QMSP is also used externally to introduce the QMS to WMATA's customers, stakeholders, contractors, suppliers, and vendors.

This plan is a living document that is subject to future revision.

2.1 CORE QMS STANDARDS

The WMATA QMS has been structured to address 15 core QMS standards, as summarized below. These have been developed based on international standards (ISO 9001:2015), as tailored to a transit-specific context. This QMSP is based on these 15 core QMS standards, in conjunction with the requirements of the agency's Safety Management System (SMS).

1 Management Responsibility Commitment of senior management to implement, maintain, and continually improve upon WMATA's Quality Management System	8 Inspection, Testing & Status Verification and documentation that practices, processes, assets, and materials comply with applicable procedures, specifications, etc. and are fit for service
2 Documented Quality Management System The combined set of quality documents, including a Quality Management System Plan, subordinate QMPs, Policies & Procedures, Work Instructions, Forms, etc.	9 Inspection, Measuring & Test Equipment Identification and periodic testing and calibration of measuring and test equipment to assure readiness for use
3 Design Control Processes to ensure the consistent development and maintenance of quality design documentation for projects and assets based on requirements, standards, criteria, etc.	10 Non-Conformance Systematic tracking of work performed or material that does not meet procedures, specs, contract requirements, etc.
4 Document Control Managing information to ensure the most current approved documents are in use	11 Corrective & Preventive Actions Measures taken to modify processes/procedures to correct and prevent recurrence of non-conformances and failures
5 Purchasing Providing for timely procurement of the right items/assets and services required for proper performance	12 Quality Records Documents generated by Quality functions that provide objective evidence of fulfillment of requirements
6 Identification & Traceability of Assets & Material The ability to track the unique history, location, performance, and configuration of any asset over its life-cycle	13 Internal Reviews & Quality Assessments Independent, objective review of conformance to quality standards and/or the overall effectiveness of processes in delivering acceptable levels of quality
7 Process Control Management and documentation of interrelated resources and activities to turn inputs into outputs/outcomes	14 Training Providing skills and knowledge required for staff to successfully perform a job
	15 Customer Focus Proactively addressing the needs and wants of internal and external customers, always

2.2 WMATA QMS FRAMEWORK

Successfully incorporating the 15 core QMS standards identified in section 2.1, into WMATA's practices requires a commitment from management, a roadmap for what documentation and elements to develop, and the development of an assurance and oversight plan by the departments and individuals accountable for the QMSP.

2.2.1 MANAGEMENT RESPONSIBILITY

Page iv of this document demonstrates the uniform commitment of WMATA's executive management (or EMT) to the adoption and success of the Quality Management System. Management ensures that qualified personnel are involved in all quality-related processes.

The Vice President of Quality Assurance, Internal Compliance, and Oversight (QICO) serves as the designated management representative responsible for ensuring that the Quality Policy is implemented and maintained.

The QICO Vice President or designee conducts formal reviews of the QMSP at regular intervals to ensure that it remains applicable to WMATA's work, is effective at all levels of the WMATA, and maintains a direct reporting relationship with the WMATA General Manager.

2.2.1.1 Policy & Commitment

All work is performed to meet or exceed WMATA standards to ensure the safety of the employees, contractors and traveling public, while consistently delivering quality service and customer satisfaction.

2.2.1.2 Quality Program Objectives

WMATA has adopted the above Quality Policy and has established a supporting Quality Management System to achieve the following primary quality objectives:

- Safe, reliable, and efficient delivery of services in compliance with all applicable regulations and requirements.
- Effective, responsive, and in-line performance with industry best practice.
- Reduction of WMATA's risk, and improvement of its risk management.
- Value added to WMATA's assets, resources, and the greater Washington region.
- Continuous improvement of, and dedication to, the quality of WMATA's public services and facilities.

2.2.1.3 Quality Principles

WMATA employees, consultants', contractors', and vendors' adherence to the following quality principles inherent in the Quality Policy, is critical to achieving the aforementioned quality objectives:

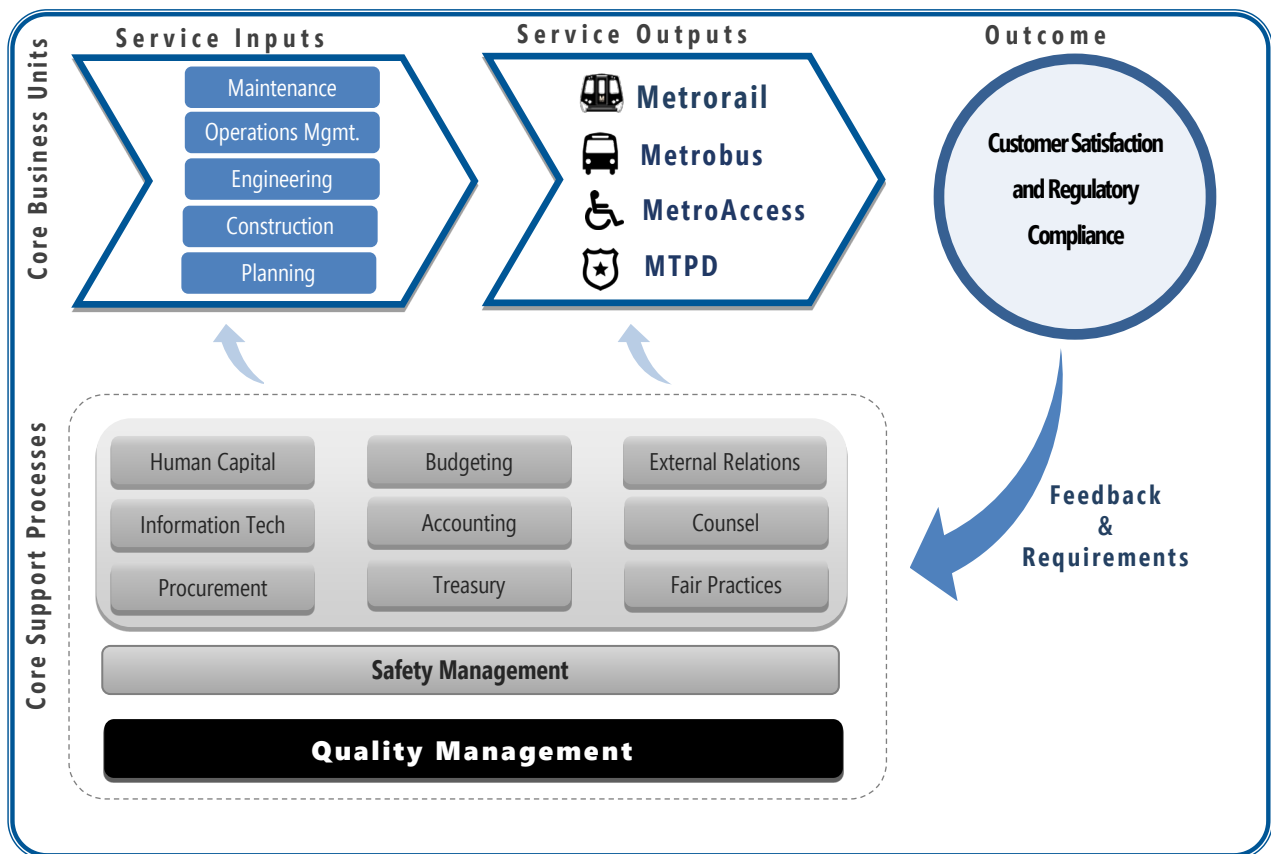
- Customer Focus that determines customer needs and expectations, converts them to requirements, and meets these requirements with the goal of enhancing customer satisfaction.
- Effective Leadership that instills a "culture of quality" by promoting the Quality Policy, affirming management commitment, and fully implementing the Quality Management System.

- Process Approach to plan, coordinate, supervise, monitor, and direct WMATA's maintenance of assets and operations through checking, testing, documenting, periodically reviewing, assessing, and auditing.
- Team Building and Empowerment with appropriately trained, competent, and skilled personnel.
- Implementing Evidence-Based Decision Making, which considers work responsibilities and deliverables thoughtfully, through a careful understanding of a problem, its stakeholders, and the applicable contractual and regulatory requirements.

2.2.2 QMS Organizational Role

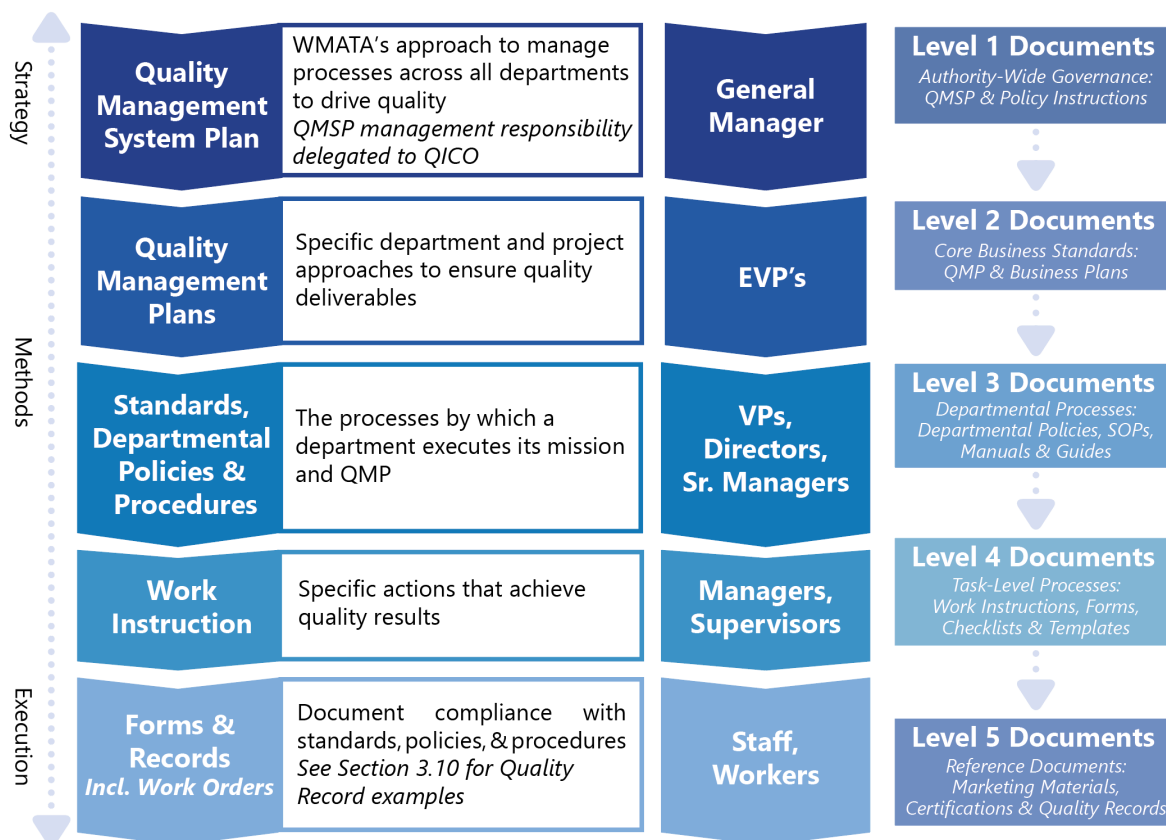
WMATA's core business units are those that directly deliver service to customers, in particular the transportation departments (operating vehicles and stations), the maintenance departments (ensuring vehicles and stations are fit for safe and reliable service on a daily basis), engineering groups (ensuring designs and modifications conform to requirements), and the capital programs groups (delivering new assets for service). WMATA's customer feedback and stakeholder requirements inform and prioritize WMATA management initiatives and decisions.

Quality management represents one of several key supporting management functions and approaches that WMATA applies to support the core business units to deliver safe, reliable, and financially responsible service to its riders and the region.



2.2.3 QMS Hierarchy

The collection of documents which comprise the WMATA QMS is organized in a hierarchical manner in accordance with *P1.1/XX**, *Document Governance and Hierarchy*, with different types of QMS documentation corresponding to levels of accountability within WMATA. This relationship is illustrated below:



Just as the General Manager specifies strategy and direction for WMATA executive management to delegate and execute, so too does the Quality Management System Plan. The QMSP is an enterprise governance document, which provides strategy and direction for the development of Quality Management Plans comprised of appropriate standards, policies, and procedures that reflect the implementation of the Core QMS Standards identified in this QMSP.

* where "XX" denotes the current document revision

2.3 QMP DEVELOPMENT

Quality Management Plans (QMPs) form the "glue" that binds together the components of the QMS, by organizing and connecting the work instructions, forms, and procedures executed daily by staff into a consistent quality framework across the WMATA.

In some cases, the development of QMPs means gathering, organizing, and refreshing existing documentation to conform to the WMATA QMS. Where gaps or deficiencies in procedures, work instructions, or quality processes are identified, new or revised QMPs reflect the development of new documentation and training, as applicable, to improve processes.

QICO partners with and supports departments within WMATA in developing, training, and implementing QMPs. QICO has developed a QMP Template to facilitate the gathering and development of essential QMS standards and components.

2.3.1 QMP Description

QMPs describe a department's or project's procedural approach to align with the QMSP requirements. They define activities to ensure delivery of services and assets.

Quality Management Plans include:

- Process steps to capture practices, and procedures
- Assignment of responsibility and authority
- References to specifications and standards
- Inspection and testing requirements
- Documented procedures for capturing and approving changes and modifications
- Metrics to capture achievements
- Minimum frequency of review/updates appropriate to ensure the department or project remains adaptive to changing conditions and priorities.

The QMPs and supporting documents (procedures, work instructions) integrate the requirements of the QMSP. Therefore, each top-level department develops its own QMP, contributing to the safety, reliability and fiscal responsibility of WMATA. Note: For the purpose of the QMSP and all relevant quality documentation, the term top-level department is interchangeable with chief-level department. Specific quality procedures translate requirements into the actions producing desired outcomes. The QMPs with supporting documents describe the practices, assign personnel (by position), define the inspection and testing requirements, and outline the acceptance criteria. It includes any legal requirements, regulations, industry standards, organizational policies, internal guidelines, and best practices, to provide the desired outcome.

The QMPs assure/provide:

- Conformance to internal and external requirements
- Traceability
- Objective evidence
- Basis for training

2.3.2 Planned QMPs

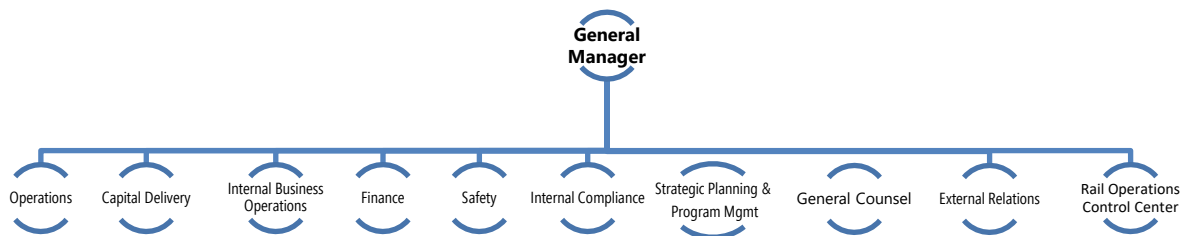
The WMATA QMS is comprised of three types of subordinate, conforming QMPs:

- Departmental QMPs,
- Project QMPs, and
- 3rd Party (i.e., contractors and vendors) QMPs.

The requirements to develop and maintain a QMPs of one of the above types are described below.

2.3.2.1 Departmental QMPs

WMATA top-level departments develop and maintain QMPs to assure the quality of ongoing operations. The following WMATA organizational chart indicates the departments required to develop QMPs, with the intent of defining the Quality Management Plan structure based on the top-level departments reporting directly to the General Manager:



Departmental QMPs only address the QMS standards that are applicable to the operation and the responsibilities of that department. In Section 2.3.3, QICO has provided a preliminary analysis of the categories of standards to be addressed for each department.

To better accommodate the documentation of quality management processes in larger departments with a broad variety of organizational units, departmental QMPs may be segmented into sub-sections as appropriate. However, when, and where practicable, the standardization of quality practices and processes across functions is desirable.

2.3.2.2 Project QMPs

Major capital projects must have project Quality Management Plans. FTA's QMS Guidance (FTA-PA-27-5194-12.1) defines a major capital project as:

1. The construction of a new fixed guideway or extension of an existing fixed guideway,
2. The rehabilitation or modernization of an existing fixed guideway with a total project cost in excess of \$100 million, or
3. Upon the determination of the FTA Administrator.

WMATA's Capital Program, at a minimum, adheres to these criteria. The Vice President of QICO, with the consent of the General Manager, may identify and designate additional capital projects as requiring a project-specific Quality Management Plan, if not meeting any of the above 3 criteria.

Quality in Practice

With an estimated project cost of over \$250 million, the Potomac Yards Station in Alexandria is an example of a major capital project requiring a conforming Quality Management Plan.

2.3.2.3 3rd Party QMPs

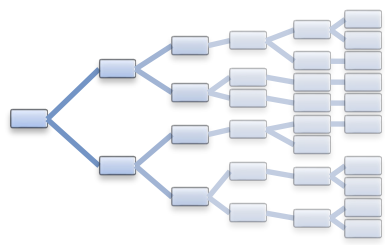
WMATA contractors are required to maintain and provide their conforming QMPs to assure the quality of services or materials provided to WMATA. Such QMPs may be explicitly identified as contractual

deliverables or may be a requirement subject to review on-demand, by WMATA's assigned quality representative.

2.3.3 Preliminary Department Responsibility Matrix

The specific requirements of QMPs vary depending on the context of the department. QICO has prepared the preliminary Departmental QMS Responsibility Matrix, shown on the following page. This matrix indicates which of the QMS standards identified in Section 2.1 are applicable to the business processes and responsibilities of each WMATA department. The matrix uses "P" to signify that a department has a primary role in authoring, revising, and/or maintaining documents or documented processes, and "S" to signify a secondary/supporting role having input, or being impacted by documents or processes owned by another department.

This matrix is regularly updated as needed, to reflect WMATA's business needs and functionality of each department/office. The matrix in its ongoing form is the basis of a continual gap assessment to target potential weak areas in WMATA's QMS, and to target QMP development efforts.

 Preliminary QMS Responsibility Matrix		 QMP Standards P = Primary Role S = Secondary/Supporting Role														
 WMATA Organizational Structure		Management Responsibility	Documented Quality Management System	Design Control	Document Control	Purchasing	Identification & Traceability of Assets & Materials	Process Control	Inspection, Testing & Status	Inspection, Measuring, & Test Equipment	Non-Conformance	Corrective and Preventive Action	Quality Records	Internal Reviews & Quality Assessments	Training	Customer Focus
Top-Level Department		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
Internal Business Operations (IBOP)	Human Capital (HC)	P	P		P	S		P				P	P	P	P	P
	Information Technology (IT)	P	P	P	P	S	P	P	P	P		P	P	P	P	P
	Fair Practice (FAIR)	P	P		P	S		P				P	P	P	P	P
	Occupational Health & Wellness (OHAW)	P	P		P	S		P				P	P	P	P	P
	Procurement (PRMT)	P	P		P	P		P	S	S		P	P	P	P	P
	Planning, Performance, and Improvement (PPI)	P	P		P	S						P	P	P	P	P
External Relations (EXRL)	Customer Service, Communications, and Marketing (CSCM)	P	P		P	S		P				P	P	P	S	P
	Government Relations (GOVR)	P	P		P	S		P				P	P	P		P
Strategic Planning & Program Management (SPPM)	Sustainability (SUST)	P	P	S	P	S	S	P	S	S		P	P	P	S	P
	Program Support & Strategic Initiatives (PSSI)	P	P	S	P	S		P				P	P	P		P
	Capital Program Management (OCPM)	P	P	P	P	S	P	P	P	P		P	P	P	S	P
	Office of Business Transformation (OBTR)	P	P	S	P	S		P				P	P	P	P	P
	Planning (PLAN)	P	P	S	P	S		P				P	P	P		P
	Fare Payment (FARE)	P	P	S	P	S		P				P	P	P	S	P
Finance (CFO)	Management and Budget Services (OMBS)	P	P		P	S		P				P	P	P	S	P
	Accounting (ACCT)	P	P		P	S		P				P	P	P	S	P
	Treasurer (TRES)	P	P		P	S		P				P	P	P		P
	Real Estate & Station Planning (LAND)	P	P	P	P	S		P	S	S		P	P	P		P
Operations (COO)	Bus Services (BUS)	P	P	P	P	S	P	P	P	P	P	P	P	P		P
	Rail Services (RAIL)	P	P	P	P	S	P	P	P	P	P	P	P	P		P
	Metro Transit Police Department (MTPD)	P	P		P	S		P				P	P	P		P
	Access Services (ACCS)	P	P	P	P	S	P	P	P	P	P	P	P	P	P	P
	Office of Supply Chain Management (SCM)	P	P	S	P	P	P	P	S	S		P	P	P	P	P
	Reliability Engineering and Asset Management (REAM)	P	P	P	P	S	P	P	P	P	P	P	P	P	P	P
	Operations Budget, Performance & Planning (OBPP)	P	P		P	S	S	P	S	S		P	P	P		P
	Support Services (FSVT)	P	P	S	P	S	P	P	P	P	P	P	P	P		P
Safety & Environmental Management (SAFE)		P	P	S	P			P	P	P	P	P	P	P	P	P
Rail Operations Control Center (ROCC)*		P	P		P	S	S	P	S	P	P	P	P	P		P
Internal Compliance (INCP)	Management Audits, Risk, and Compliance (MARC)	P	P		P	S		P	P			P	P	P	P	P
	Quality Assurance, Internal Compliance & Oversight (QICO)	P	P		P	S		P	P	P	P	P	P	P	P	P
General Counsel (COUN)		P	P		P	S		P				P	P	P	P	P
Capital Delivery (CAPD)	Engineering & Architecture (ENGA)	P	P	P	P	S	S	P	P	P	P	P	P	P		P
	Capital Office of Resources & Reporting (CORR)	P	P	P	P	S	S	P	P	P	P	P	P	P		P
	Project Development & Implementation Planning (PDIP)	P	P	P	P	S	S	P	P	P	P	P	P	P		P
	Project Implementation & Construction (PICO)	P	P	P	P	S	S	P	P	P	P	P	P	P		P
	Signaling Systems Renewal Program (SSRP)	P	P	P	P	S	S	P	P	P	P	P	P	P		P

Organizational Structure as-of 05/28/2021

* Matrix Illustrates Top-Level and Department Levels Only.

* P = Primary Role: Organization is authoring/maintaining documents or documented processes

* S = Secondary/Supporting Role: Organization provides inputs or is impacted by a document/process owned by another WMATA department

* Rail Operations Control Center (ROCC) reports to the GM/CEO.

2.3.4 Prioritization of QMP Development

While the QMSP envisions the eventual development of QMPs across the entire organization, it is necessary in practice to prioritize QMP development, review, and adoption efforts. QMP development efforts are focused first on those elements of the operation that are subject to the highest priority and/or greatest number of open regulatory findings and active Corrective Action Plans. As these findings are focused on safety-critical operational, maintenance, and engineering functions that also have direct impact on service reliability, this focus ensures a risk-prioritized approach to QMS implementation.

2.3.5 QMP Review Process

Approval and maintenance of quality management plans follow a general cycle that is established, administered, and documented by QICO:

1. **Submittal**: Responsible organizations draft QMPs and submit them to QICO.
2. **Review, Comment, and Revision**: QICO reviews the draft QMP and returns comments to the responsible organization. The responsible organization revises and re-submits the QMP as warranted.
3. **QMP Approval**: QICO provides written approval of the QMP to the responsible organization and publishes the approved and adopted QMP as part of the Documented Quality Management System.

The size and composition of a Quality Management Plan review team is determined by the QICO Vice President, or designated WMATA Quality Manager (WMATA employee or consultant representative) for the given program, project, contract, or procurement. For office/departmental QMPs and projects without designated quality managers, the QICO Vice President appoints appropriate review teams.

For some projects, third party representatives (e.g., utilities, adjacent property owners, public safety, municipalities, etc.) may be required to participate in QMP reviews as specified in a Memoranda of Agreement (MOA) or other agreements. The QICO Vice President, or designated WMATA Quality Manager for the project, determines the level of QMP review participation required.

2.3.6 QMS Training

QICO has developed a QMS training curriculum and training plan to support WMATA departments, not only in the development of QMPs, but also in the adoption of a quality management perspective in day-to-day activities. All WMATA employees and contractors (i.e., augmented staff) are familiarized with and/or trained on the QMS as a requirement of their job roles. This may be accomplished through classroom training or Computer-Based Training (CBT), and must take place during the employee's onboarding process in their new position. QMSP CBT training is required for all WMATA personnel who have a HC job code as supervisor and above on a biennial basis.

2.4 QMS OVERSIGHT & MONITORING

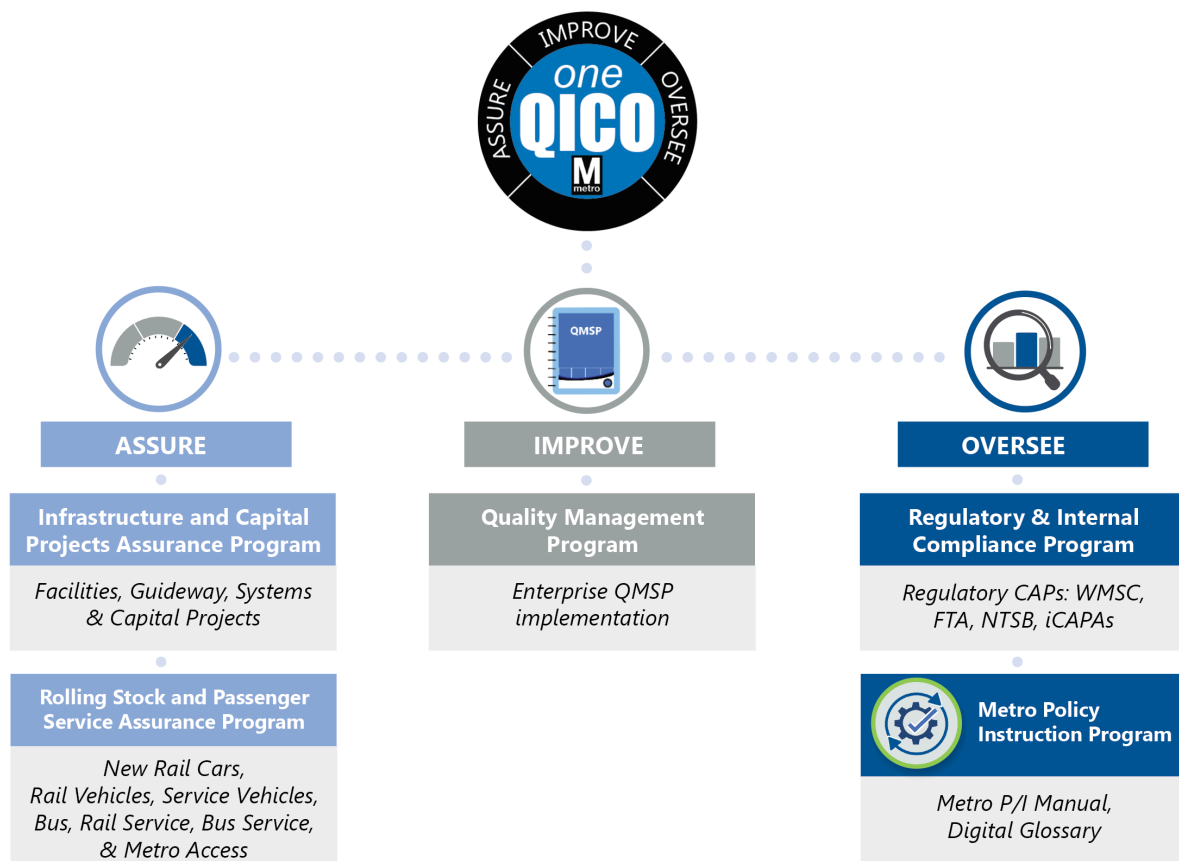
QICO is responsible for overseeing and ensuring the development and implementation of WMATA's Quality Management System in accordance with the framework specified in this document.

While WMATA department Executive Vice Presidents (EVPs) and Vice Presidents (VPs) are ultimately responsible for the content and efficacy of their respective Quality Management Plans, QICO provides ongoing assistance and guidance, along with structured monitoring, to support successful development.

2.4.1 QICO Roles & Responsibilities

The QICO VP bears the ultimate responsibility for the department's duties regarding the QMS, with the support of a team of accountable and empowered managers who administer components of the QMS.

The following chart illustrates the QICO department organization:



The roles & responsibilities of key QICO staff with respect to the QMS are as follows:

Position	Quality Role	QMS Responsibility
QICO Vice President	Reports to the Executive Vice President of Internal Compliance and the General Manager on issues pertaining to quality	Overall accountability for QMS
QICO Director	Manages QICO department operations	Management of QMS implementation and oversight, as delegated by the QICO Vice President
Program Manager - Rolling Stock and Passenger Service Assurance Programs	Manages Quality Assurance Programs for railcar (including new rail car commissioning), bus, MetroAccess vehicle, rail-borne equipment and other non-revenue vehicle maintenance, operation and engineering	Monitor and assess compliance with quality requirements for rolling stock maintenance, operations and engineering
Program Manager - Infrastructure and Capital Projects Assurance Programs	Manages Quality Assurance Programs for Infrastructure maintenance, engineering and asset management, as well as capital improvement projects	Monitor and assess compliance with quality requirements for infrastructure maintenance, engineering and asset management; monitor and assess compliance with quality requirements for capital improvement projects (management and execution)
Program Manager - Quality Management, Regulatory and Internal Compliance Programs	Manages Quality Management System (QMS) implementation Authority-wide; monitors and ensures compliance with required actions and findings resulting from internal reviews and from external oversight authorities (e.g., WMSC, FTA, NTSB, GAO, etc.)	Leads WMATA-wide effort on implementation of this QMSP and its requirements; advises on the status of Corrective Action Plans (CAPs)
Quality Manager - Policy Program	Leads quality oversight of Policy/Instruction creation, review and rescission process; and manages P/I document control	Assures policies conform to all established requirements, are aligned to QMSP and gain appropriate approvals before issuance

2.4.2 QMS Surveillance Plan

QICO deploys several processes to assure continued progress on QMS implementation; some of these processes occur on a scheduled/periodic basis, while others are conducted as-needed, on a risk-prioritized basis.

In all instances, the success of this surveillance depends on QICO having unrestricted access and full cooperation from all departments during all quality-related activities, under the delegated authority and direction of the WMATA General Manager.

2.4.2.1 Triennial QMS Review

The QICO Vice President is responsible for conducting a review of the WMATA QMSP at least once every 3 years with regards to the framework and requirements outlined in this QMSP. This comparison and review are based on a variety of inputs, including:

- Results of internal and external audits, quality assessments, and internal reviews
- Non-conformance data
- Status of corrective and preventive actions
- Evaluation on the suitability, adequacy, and effectiveness of the current QMS

A draft QMS review is presented to the WMATA General Manager for comments and approval prior to finalization and issuance of the revised QMSP.

The QMS review provides recommendations and/or required actions for maintaining and improving the QMS and informs priorities in QICO's annual internal review and assessment plans described below.

2.4.2.2 Internal Reviews & Quality Assurance

In its role overseeing the development and implementation of the WMATA QMS described in this plan, QICO performs three related types of internal assessments:

- **Internal Reviews** are comprehensive assessments of functional areas of WMATA's operations - Engineering & Maintenance; Service Delivery; Capital Programs; and Safety. These reviews may span multiple departments, have broad scopes, and are intended to provide WMATA senior management with an assessment of the current methods and practices associated with the specific subject area being examined.
- **Internal Safety Reviews** assess compliance with WMATA Safety Plan. This safety plan is an Authority-wide plan created by the Department of Safety & Environmental Management (SAFE) in accordance with the Public Transportation Agency Safety Plan (49 CFR Section 673) to ensure system safety and security.
- **Quality Assessments** are performed to evaluate conformance to the procedures and actions that are documented in Quality Management Plans, as well as success towards achieving identified quality targets. Quality assessments are focused on determining the existence and effectiveness of quality management practices in day-to-day business (for departments) or during delivery (for projects).

The results of these internal reviews and quality assessments are scored based on pre-defined quality management practice measures; the results are aligned with WMATA's SMS, and are safety compliant (i.e., adhere to any safety requirements of the area being assessed).

The QICO Vice President presents an Annual Review Plan to the WMATA General Manager for review and approval, which takes into account the scoring results of prior year internal reviews and quality

assessments, to drive the identification of focus areas, the scope of examinations, and schedule for next year's plan. This Annual Review Plan identifies and describes planned internal reviews and major assessments for the coming calendar year. Upon approval, the Annual Review Plan is shared with all WMATA department EVPs to communicate scheduled major internal reviews.

QICO Managers (see Section 2.4.1) are responsible for planning, scheduling, and coordinating systematic assurance programs, including regular internal reviews and quality assessments, in their respective assigned areas. QICO Managers contribute to the development of the Annual Review Plan based on their ongoing observations, and the results of their quality assessment programs.

In addition to scheduled reviews and assessments, QICO may from time to time perform unscheduled assessments on an as-needed basis, as determined by the QICO Vice President, the Executive Vice President of Internal Compliance, and/or the WMATA General Manager. Such assessments may or may not be announced prior to issuance of the resulting draft report, depending on the requirements of the assessment.

Additional characteristics of Quality Assessments (pertaining to those performed by QICO, and those by other departments) are described in Section 3.11.

2.4.3 Documenting the QMS

The WMATA documented Quality Management System (QMS) is composed of this governance document, the Quality Management System Plan (QMSP), and all subordinate Quality Management Plans (QMPs) developed by WMATA for its departments, programs, projects, and other definable scopes of work requiring quality oversight.

The most up-to-date, distributed version of the QMSP and associated QMPs, inclusive of procedures, work instructions, and quality records, are made available to all WMATA staff, contractors, consultants, and vendors, in accordance with document control requirements.

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3

QUALITY MANAGEMENT SYSTEM STANDARDS

This chapter provides greater specificity regarding the Core QMS Standards as enumerated in Section 2.1 above. These standards are categorized below with their corresponding QMSP Section number:

3.1	Design Control Processes to ensure the consistent development and maintenance of quality design documentation for projects and assets based on requirements, standards, criteria, etc.	3.7	Inspection, Measuring & Test Equipment Identification and periodic testing and calibration of measuring and test equipment to assure readiness for use
3.2	Document Control Managing information to ensure the most current approved documents are in use	3.8	Non-Conformance Systematic tracking of work performed or material delivered that does not meet procedures, specs, contract requirements, etc.
3.3	Purchasing Providing for timely procurement of the right items/assets and services required for proper performance	3.9	Corrective & Preventive Actions Measures taken to modify processes/procedures to prevent recurrences of non-conformances and failures
3.4	Identification and Traceability of Asset & Materials The ability to track the unique history, location, performance, and configuration of any asset over its life cycle	3.10	Quality Records Documents generated by quality functions that provide objective evidence of fulfillment of requirements
3.5	Process Control Management and documentation of inter-related resources and activities to turn inputs into outputs/outcomes	3.11	Internal Reviews & Quality Assessments Independent, objective review of conformance to quality standards and/or the overall effectiveness of processes in meeting quality requirements
3.6	Inspection, Testing & Status Verification and documentation that practices, processes, assets, and materials comply with applicable procedures, specifications, etc., and are fit for service	3.12	Training Providing skills and knowledge required for staff to perform a job
		3.13	Customer Focus Proactively addressing the needs and wants of internal and external customers, always

These Core QMS Standards are the foundation of the WMATA QMS, along with the requirements of the FTA Quality Management System Guidelines and the Safety Management System.

Applicability of QMS Standards - these sections comprise requirements and principles, which are codified through policies, procedures, training, and review/assessment.

These QMS standards are generally applicable to:

- Departmental QMPs,
- Project QMPs,
- 3rd Party QMPs, and
- the QMS as a whole.

Departmental QMPs and Project QMPs minimally address any and all applicable QMS standards. The preliminary matrix of which categories of standard are assumed applicable for each department is provided in Section 2.3.3.

Where applicable, policies and procedures to govern these practices are referenced in the Appendices. Additional applicable policies and procedures are under development.

In all cases, the requirements and principles given here are subject to future revision to better reflect WMATA's unique organization and environment. The specific application and implementation of these standards to each and every quality situation at WMATA is expected to be crafted by the appropriate subject matter experts and accountable management in the QMP. The guidance herein is not meant to be overly prescriptive, nor intended to create excessive administrative and bureaucratic requirements that do not bring added value in the form of improved quality.

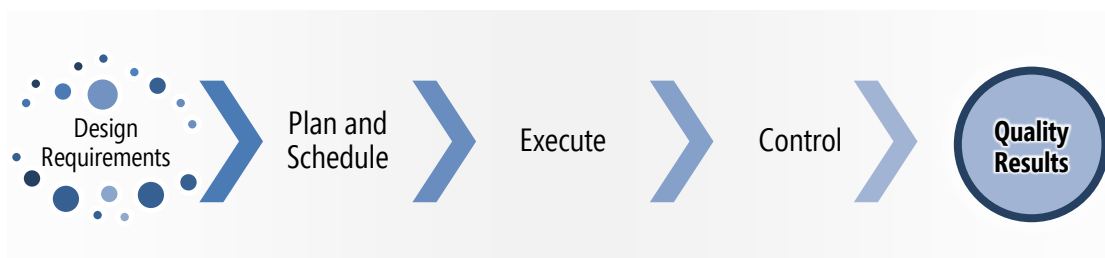
Applies to: All WMATA departments

3.1 DESIGN CONTROL

Design control includes planning, execution, and monitoring/controlling components:

- Identification and understanding of design requirements
- Planning and scheduling activities (e.g., testing, piloting) to verify that the design meets requirements
- Executing and documenting design verification
- Controlling design changes

WMATA designers and consultant designers develop and submit Design Quality Plans (DQPs) that comply with the requirements or design input specific to each project, and this QMSP.



3.1.1 Design Requirements

The WMATA department or project designer understands all relevant design criteria, inclusive of WMATA interpretations of design criteria for specific projects, to deliver high quality designs to the Authority. Applicable design requirements and criteria may include or be found in the following:

- Contract documents
- Preliminary engineering studies and drawings
- WMATA general technical requirements
- Codes, specifications, and standards (WMATA, international standards, member jurisdictions and their respective Department of Transportation (DOT) offices, utilities, etc.)
- Performance criteria

The WMATA designer or consultant designer compiles all applicable requirements for the design and submits them to WMATA for design review and concurrence prior to engaging in design activity. Depending on the size and scope of the work or project, the designer may elect to submit multiple design requirements by discipline or geographic area.

Applies to: All WMATA departments

3.1.2 Design Quality Plan

The WMATA designer, or consultant designer, provides to WMATA for design review and approval, a comprehensive Design Quality Plan (DQP), in compliance with this QMSP and any project-specific quality management requirements that contain written, detailed quality control and quality assurance procedures for all disciplines (power, track, structures, signals, etc.).

Design Quality Control activities include:

- Checking drawings and calculations,
- Risk management processes including analyses, assessments, and mitigation strategies,
- Verifying correct application of specifications, and
- Resolving discrepancies or comments from reviewers.

Design Quality Assurance activities include:

- Review of quality control records,
- Surveillances, audits, and
- Over-the-shoulder reviews to ensure that disciplines and design teams execute and document QC activities in accordance with the DQP, applicable standards, and the design contract.

The Design Quality Plan (DQP) also provides a clear understanding of quality procedures performed by design sub-consultants. Depending on the scope of work and contract agreement, a sub-consultant may submit its own plan and procedures for review, approval, and incorporation in the project DQP, or it may elect to adopt the prime consultant's plan.

The DQP includes support of audit activities and resolution of potential audit findings for audits conducted by WMATA or its representative at any time throughout project delivery.

3.1.2.1 Interfaces

Identification and understanding of the internal and external design interfaces is critical to Design Quality. The DQP includes processes to ensure effective design coordination and integration between disciplines, sub-consultants and potential adjacent projects that result in designs ready for construction. This includes, as applicable:

- Identifying organizations external to the design team who review and approve the design, and
- Provide procedures for submitting, reviewing, revising, and approving design deliverables.

**Applies to:** All WMATA departments

Design interfaces with the project following the completion of design are also included in the DQP. This may include, as applicable:

- Post-design reviews and responses to requests for information, design changes, or non-conformances, and
- Procedures for hand-off to operations, and maintenance, including sufficient information to ensure assets can be maintained to design standards and configurations.

3.1.2.2 Documentation

The DQP describes how design and design quality documents are generated, stored, and transmitted throughout the project. This includes both hard copy and electronic documents.

All procedures described in a DQP have corresponding sample or template documents that are used to accurately and comprehensively record the results or output of design quality activities. Such documents may include, but are not limited to:

- Drawing and calculation check-prints
- Failure Mode and Effects Analyses (FMEAs)
- QA/QC certification forms
- Design criteria checklists
- Audit checklists
- Document logs
- Comment disposition forms
- Design deviation/waiver request forms
- Design change forms



Applies to: All WMATA departments

3.1.3 Control of Design Changes

Procedures for controlling design changes following completion of design or during maintenance or construction work are included in the Design Quality Plan. Types of design changes that can occur following design completion or design release for construction include:

- Designer-initiated changes: Design changes that are identified by the design team and are pushed out to maintenance, construction, or construction management teams.
- Field-initiated changes: Design changes requested by a maintenance team, construction contractor or manager for constructability, efficiency, or safety purposes.
- Specification deviations or variances: Field-initiated requests to change the construction and material specifications released by the designer.
- Requests for Information: Field-initiated requests to clarify the design or provide information missing from the design.

The DQP procedures for these changes include design review and approval processes, the definition of quality roles and responsibilities, timeframes for review and response, request forms, systems for logging and tracking change requests, and processes for revising and transmitting design drawings and specifications.



Applies to: All WMATA departments

3.2 DOCUMENT CONTROL

WMATA departments and projects include procedures for receiving, transmitting, reviewing, approving, disseminating, and archiving critical documents in their respective QMPs. These procedures are reviewed and revised every 2 years unless there are changes that necessitate an earlier review. This applies to both hardcopy and electronic documents, including pre-existing controlled WMATA documentation (see Section 3.2.7).

Document management and control activities to be covered by procedures, as part of a QMP include, as applicable:

3.2.1 Standardization

- Common rules for nomenclature, numbering, and pagination of documents
- Form templates, color and graphics standards, and branding guidelines
- References and style guides for writing and correspondence

3.2.2 Receiving/Transmitting

- Rules for numbering and logging inbound and outbound documents
- Guidelines for transmittal media (e.g., hard copy, disks, electronic transfer, number of copies, etc.)

3.2.3 Reviewing and Approving

- Routing and approval chains for documentation and documents required by this QMSP
- Signatures and/or seals required to release or certify documents (e.g., "Released for Construction" drawings)

In accordance with *P/I 1.1/XX**, *Document Governance and Hierarchy*, for controlled documents, digital signatures are required unless otherwise authorized by the VP of QICO and/or WMATA GM/CEO. WMATA IT Digital Signature Certificates (DSC) are available to all WMATA employees for signing key electronic documents such as PDFs, Word documents, and Excel spreadsheets. To obtain a digital signature certificate, employees should follow the instructions provided on the IT MetroWeb page.

3.2.4 Controlling

- Processes to establish a baseline set of working or approved documents (policies, procedures, drawings, specifications, etc.)

Applies to: All WMATA departments

- Rules for revising baseline documents due to changes, to include revision numbering and dating, depiction of changes on baseline set (e.g., redlines, clouds), and revision history or change summary documents
- Approvals required to revise current documents; revised documents are reviewed and approved by the same authorities involved in their original review and approval
- Processes to ensure only current revisions of documents are available for use, and that obsolete or superseded documents are prevented from unintended use
- Maintenance of a master document list, including current revision level or date
- Storage of controlled quality documents in a centralized document repository

3.2.5 Disseminating

- Lists of personnel by office/department or other category required for distribution of documents
- Timeframes for document distribution
- Identification of centralized electronic repositories from which documentation is accessed

3.2.6 Archiving

- Document and data storage procedures, both during execution and upon completion.
- Document accessibility to WMATA and other agencies throughout the project or system lifecycle
- Guidelines for removing, superseding, or eliminating obsolete documents
- Handover procedures to WMATA and/or the operating organization for asset management

3.2.7 Existing WMATA Documentation

- WMATA has an extensive library of quality documentation that predates implementation of this Quality Management System; these documents integrate with the QMS.
- Examples of pre-existing WMATA documentation include WMATA-wide Policy Instructions (PIs), manuals, handbooks, Standard Operating Procedures (SOPs), Departmental Policies, existing templates, guides, guidelines, technical documentation (e.g., drawings and specifications), and instructions.

Applies to: All WMATA departments

- Reference each department's list of controlled documents, to review the pre-existing WMATA documents, which are relevant to the activities of their department. In many cases, such documents are accessible for internal employees via the WMATA intranet site.



Quality in Practice

Maintaining a system of controls governing key documents is an essential Quality Management System practice for every department and function at WMATA. For example, Document Control assures that:



Technicians receive and use the most up-to-date inspection procedures and checklists/forms for safety-critical assets.



Engineers and mechanics can find the correct technical specifications and documentation for unique, complex, configurable assets.



Managers, auditors, and others can verify whether, when, and by whom new procedures, directives, and other management documents were reviewed and authorized.

Applies to: All WMATA departments with custody of, or responsibility for, assets or material

3.3 PURCHASING

WMATA managers ensure that all purchased services, assets, and materials meet the Authority's requirements.

Therefore, departments, projects, maintenance, and operations teams deploy procurement management and supplier quality systems appropriate to the scope of work (SOW) to be performed. SOWs define minimum quality standards, referring to or attaching this QMSP, associated QMPs and/or applicable quality procedures. Procurement documents are reviewed and approved by a party, independent of the development of such documents, for adequacy and consistency of specified requirements prior to release.

Vendors, suppliers and contractors are qualified to perform work and/or provide products, and their performance is regularly monitored through WMATA's documented inspections, as well as its external audit programs. Only qualified and approved vendors, suppliers, and contractors may be used by the Authority, as listed on an approved vendor/supplier list. Lastly, vendors, suppliers and contractors are also subject to WMATA's non-conformance and corrective action processes, in the event of non-conforming products and services.

For many construction and maintenance projects, the scope and complexity of the work is such that managers can utilize WMATA's existing procurement resources and procedures. Large scale, long-term, and highly complex programs or projects may require separate procurement and contract management personnel who establish purchasing procedures as part of the project specific QMPs.

WMATA purchasing procedures adopted or established for a department or project are referenced in the appropriate QMP, and apply to all consultants, contractors, suppliers, manufacturers, and vendors.

Procurement documents and records that demonstrate verification of purchased assets, materials or services are maintained. Quality Managers conduct assessments to ensure that both procurement personnel and contracted parties comply with contract requirements and the specifications of this QMSP.

Quality in Practice

Maintaining quality purchasing processes means not only conducting procurements in accordance with all applicable federal and WMATA regulations and procedures, but also having procedures and practices in place to ensure that materials and services meet WMATA's needs:



Are replacement parts available when needed? Do all materials fit their intended function and purpose?



Did a contractor adhere to all contractual requirements and procedures in delivering new assets for WMATA?

Applies to: All WMATA departments with custody of, or responsibility for, assets or material

3.4 IDENTIFICATION & TRACEABILITY OF ASSETS & MATERIAL

WMATA's assets, including the materials, assemblies, and components installed on those assets, are compliant with specifications and they are identified and tracked as compliant through all stages of their lifecycle.

WMATA QMPs include and/or reference policies and procedures that ensure that all assets installed or maintained within the existing system by the respective department or project, are identified and traceable through all stages of delivery, installation, and operation.

Types of material and their traceability documents include:

- Assets are uniquely identified, and physically marked in accordance with project contract documents, or a department's applicable asset management standards.
 - Conformance verification documents for individual assets are maintained, including component lists, performance tests, and physical inspections, certifications, etc.
 - As applicable for reliability or safety needs, individual components also have verification documents, such as source certifications, test reports, and inspection reports. WMATA or its representative may elect to inspect the assembly at its point of manufacture in accordance with the procedures, specifications, or contract documents. Assemblies may also require follow-up or subsequent testing at separate laboratories or test facilities, which are also documented and traceable.
- Raw Materials are identified with physical identification, by batch or heat number, delivery or weigh ticket, invoice number, date, packing slip, etc. Conformance is typically verified through test reports and material certifications from the source (e.g., foundry, quarry, etc.).



Quality in Practice

Being able to trace assets and raw materials is essential to ensure that WMATA delivers quality, safe, and reliable service to the public. Strategically and effectively identifying and tracing material and assets supports critical asset management needs such as:



Identifying unreliable and failing components to remove from service for repair/replacement



Ensuring inspection & maintenance of every single one of thousands of critical assets throughout the system

Applies to: All WMATA departments

3.5 PROCESS CONTROL

Each department and project include and describe in its QMP the processes that bring together resources, equipment, and activities, resulting in work products, assets and services. In the context of the WMATA Quality Management System, this primarily means the comprehensive and consistent development and documentation of Standard Operating Procedures (SOPs) and/or administrative policies that specify the work performed by a department. Policies and procedure instructions are maintained in accordance with Section 3.2. Records of Process Control are maintained in accordance with Section 3.10.

Processes are analyzed and verified prior to being formalized and fully implemented, to ensure efficiency and effectiveness. Changes to processes, and their corresponding controlled documentation, are also monitored to ensure their efficiency and effectiveness; this includes analyses of upstream and downstream effects on other processes.

3.5.1 Departmental Processes

Operations, maintenance, engineering, and support departments provide processes, including applicable parameters, required to directly maintain and operate the transit system or support operations, as appropriate. Many such processes are documented in various forms, such as:

- Standard Operating Procedures (SOPs)
- Departmental Policies (also referred to as OAPs)
- 1000 series manuals (e.g., TRST-1000, ATC-1000, etc.)
- maintenance control policies
- maintenance manuals
- safety manuals (e.g., Agency Safety Plan, Roadway Worker Protection Manual, etc.)
- communications protocols

Applicable parameters and constraints are identified in the respective process documentation. Examples of such parameters include:

- Work and operating schedule thresholds
- Applicable safety requirements
- Communication methods/media

Applies to: All WMATA departments

 Quality in Practice

Maintaining and controlling a set of processes is readily recognized as an essential activity for departments that perform inspections and maintenance or directly operate transit service. Likewise, for departments subject to strict regulatory requirements (e.g., Procurement).

However, the need to document and control processes extends beyond, for example:



Have press releases, website content, and press statements passed through applicable review/approval channels prior to issuance?



Has a standard process been followed to both select a preferred candidate and negotiate salary requirements prior to extending a formal written job offer?

3.5.2 Programs, Projects

Project QMPs include and/or reference procedures to ensure the use of suitable production and installation equipment, a suitable work environment, the qualification/certification of personnel, and conformance with contractually required standards and codes to ensure quality of the work. Examples of controlled process components include:

- establishing the sequence of installation/fabrication
- safety requirements
- equipment required to perform the work
- materials required to perform the work
- environmental requirements during production or installation (e.g., minimum/maximum ambient temperatures, evaporation rate, time of day or time of year restrictions)
- crew size and craft/discipline requirements
- required qualifications/certifications of personnel performing the work
- required monitoring processes
- required inspections and tests
- applicable codes and standards

Applies to: All WMATA departments

3.6 INSPECTION & TESTING

All work performed on WMATA assets and inventory (e.g., individual parts, components, and raw materials) by the Authority and/or contracted organizations are subjected to appropriate testing to verify that purchased items, work, or services delivered, meet WMATA's specifications and compliance to applicable federal, state, and local laws and regulations.

Each WMATA QMP incorporates appropriate documentation of inspection and testing requirements consistent with the needs of the project/program or asset.

- **Inspection:** the act of observing, documenting, and reporting the work, task, or maintenance procedure to verify whether the practices, processes, materials, and assets comply with the contract documents and safety requirements. This includes at-the-source inspections, receiving inspections of purchased assets, first article inspections, in-process inspections, and final inspections to verify compliance with contract- and project-specific QMP requirements.
- **Testing:** subjecting an item to a set of physical, chemical, environmental, or operating conditions to validate the item meets quality and safety requirements. This includes testing of purchased assets and raw materials (if required), in-process testing, and final testing to ensure compliance with contract- and project-specific QMP requirements. Testing may also include requirements for obtaining and maintaining individual licenses, certifications, and the qualifications of component operators.

Inspection and testing procedures are performed and documented by qualified individuals with knowledge of the specific asset or raw material, and the procedures defined by the corresponding specific quality plan, documented procedures, or industry standard procedures.

Documents include, where appropriate, specifications for inspection or testing procedures, frequency and location of inspections or tests, requirements for witnessing inspection or testing, and instances in which inspection or testing at the source is required prior to shipping.

3.6.1 Inspection & Testing Procedures

Appropriate inspection and testing procedures are developed as part of each QMP to ensure the safety, quality, system reliability, service life, and regulatory compliance of each item or element. Procedures reference the appropriate code or standard to be used for each test or inspection; sampling plans and acceptable quality levels (AQLs) are also established and utilized as inspection requirements throughout the Authority. To ensure these requirements are met, inspection and testing procedures and documentation of these procedures are performed by separate, tiered entities: Quality Control (QC), Quality Assurance (QA), and



Applies to: All WMATA departments

Owner's Quality Oversight (OQO). The specific responsibilities of each entity are defined in, and/or referenced by, each QMP.

3.6.1.1 Quality Assurance (QA)

QA inspection and testing procedures are intended to directly improve QC procedures and outcomes through independent management actions. WMATA's designated QA representatives are responsible to verify that QC acceptance of the work conforms to specifications, and that only work that has been accepted by documented observations, quality control inspections, verifications, and testing is incorporated into the final product. QA representatives are organizationally independent from QC functions, the latter being the direct responsibility of the process owner.

3.6.1.2 Owner's Quality Oversight (OQO)

OQO is any inspection, testing, or auditing performed by a third party completely independent of both the QC and QA processes. QICO may independently perform random inspections and testing as well as auditing of QC and QA procedures to ensure a consistent and quality product, and compliance with the applicable QMP.

3.6.2 Inspection & Testing Documentation

All inspections and testing performed by WMATA or its agents are recorded, with quality records maintained by the corresponding department, program, or project, to serve as documentation that each item has been accepted and meets the specified requirements.

Each defined inspection and test that is performed on a WMATA asset:

- is recorded in a traceable report,
- documents a uniquely identified asset or (raw) material,
- identifies the WMATA employee(s) and/or contractor(s) performing the inspection/test, and
- identifies whether or not the item has met specifications or has any identified non-conformances during the reporting period.

All reports are reviewed and approved by the direct supervisor of the WMATA representative performing the inspection/testing, or the WMATA representative responsible for overseeing inspection and testing performed by consultants, contractors or vendors. The Quality Manager of the respective project or operations department ensures that all required inspection and testing has been performed and documented, prior to placing a product into service.

QMPs include and/or reference software or data systems used to assist in the creation and organization of inspection and test documentation. The QMPs include and/or reference

Applies to: All WMATA departments

guidelines for electronic file-naming and archiving and include provisions for WMATA representatives to access electronic documents.

3.6.3 Inspection & Testing Status

WMATA and its designated agents identify the inspection and test status of work, tasks or assets and materials to ensure that only a work product or asset/material that has successfully passed the specified inspections and tests is accepted and put into service, and that all work is performed according to applicable procedures or work instructions.

QMPs include and/or reference procedures for identifying inspection and test status for work items throughout production and installation processes, as well as inspection and test status for existing assets or materials in service, as applicable.

3.6.3.1 Procedures

Procedures for identifying the asset or work item status include, at a minimum:

- description of the work item and unique asset identification, as applicable
- list of required inspections and tests, referencing regulatory standards when applicable
- method for identifying the status of each item (i.e., conformance or non-conformance)

Status During Production (if applicable)

QMPs establish and/or reference procedures to verify and document that specified inspections and tests have been performed on materials and equipment of a work item, task, or asset during production or maintenance, and that these components conform to contract documents. Established procedures ensure that at the time of receiving purchased assets, the status of inspection and testing of that product is clearly identified physically on the item, and that documentation verifying the product conforms to contract documents, is in possession of WMATA or its agent(s).

Status During Installation (if applicable)

Appropriate procedures to track the inspection and test status of a work item, task, or existing asset are provided in order to ensure a product that does not conform to the inspection and testing specified in the QMP is not installed or put into service, including not being placed into inventory.

No asset or item is placed in service until the status of all testing and inspection(s) required by the specified QMP is completed and documented as meeting contract requirements, or WMATA's internal procedures, standards, and specifications.

**Applies to:** All WMATA departments**3.6.3.2 Status Documentation**

Proper documentation is critical to tracking the inspection and testing status of a product. Documented procedures for inspection and test status are in place to provide identification and traceability for conforming and nonconforming assets as well as items during production, installation or maintenance.

Physical Identification of Items/Assets

When physically possible, the test and inspection status of an asset is identified by means of unique markings, stamps, labels, or other suitable means on the product itself.

Inspection and Test Reports

For assets that require material testing, reports that indicate conformance or non-conformance to applicable standards or targets are produced and maintained. Raw materials or components received from suppliers are accompanied by certificates of compliance/conformance, as required. QMPs identify and/or reference the database for tracking material test status, where appropriate.

Applies to: All WMATA departments

3.7 INSPECTION, MEASURING, & TEST EQUIPMENT

All inspection, measuring, and testing equipment utilized by WMATA or its agents and contractors on assets, purchased materials, work, or services, are uniquely identified, calibrated (if necessary), verified, and maintained. Any third party (i.e., external) calibration services used by the Authority are accredited.

WMATA maintains master equipment logs and records that include, at a minimum:

- equipment type
- manufacturer
- model and/or serial number
- calibration date and frequency required
- calibration method or procedure
- results of calibration/verification
- service records

Inspection, measuring, and testing equipment used have a visible label, when physically possible, that displays the latest calibration date, as well as the upcoming due date for calibration of the equipment.

QMPs establish and/or reference calibration documents which identify any applicable equipment under the purview of the respective department and/or project. Calibration or verification is performed in accordance with applicable national standards, such as the American section of the ASTM (American Society for Testing and Materials) international standards, or defined standards within the QMP (for cases in which national standards do not exist) on pre-set master schedules. Individuals performing calibration or verification activities are qualified in the appropriate calibration methods.

All testing equipment is only used as per the manufacturer's instructions/recommendations and in a safe manner by personnel trained and certified when required, to operate it.

3.7.1 Equipment Licenses and Regulations

Ownership and use of testing equipment may require a license from the jurisdiction in which the equipment is operating and/or stored. Neither WMATA nor any of its contracted agents own, transport, or operate such equipment without proper and current licensure.

3.7.2 Material Testing Laboratory

When required by procurement documents, contracts, specifications, QMPs, procedures, policies, or other documents, a material testing laboratory (operated by a designated agent of WMATA) confirms that the material meets required specifications prior to installation and

Applies to: All WMATA departments

placement into service, and/or to confirm that in-place materials meet specifications. Any third party (i.e., external) material testing labs used by the Authority are accredited.

3.8 NON-CONFORMANCE

WMATA QMPs establish and/or reference procedures to:

1. identify when a work item, existing asset, or task does not conform to requirements (whether contractual, technical, procedural),
2. ensure that work items or existing assets that do not conform to contract documents and specifications are immediately identified and, if applicable, removed or prevented from being placed into service until an appropriate disposition is determined and approved,
3. report upon such non-conformances and determine the appropriate disposition and/or corrective action, which may include replacement, rework, repair, or use as-is, as determined by qualified personnel,
4. document non-conformances in reports, forms, logs, as applicable, to verify that only work that meets requirements is accepted, and to facilitate trend (i.e., for continual improvement) and root cause analysis, and
5. reject or disposition items determined unsuitable for intended purpose and economically or physically incapable of being either reworked or repaired.

In the case of maintenance departmental QMPs, it is expected that most non-conformance tracking is satisfied using the work order functionality of WMATA's Asset Management system, Maximo. Where applicable, such QMPs would therefore present the procedures and instructions that ensure the correct documentation of each required step in the asset management system.



Quality in Practice

Processes and methods for identifying and tracking non-conformances are specific to the subject matter and work of each department or project. Regardless of exactly how a department or project performs these QMS requirements, they are essential as part of proactively preventing failures in service and establishing a continual improvement process.



Track inspectors identify non-conformances in track assets and log them via the appropriate forms and systems, where they are tracked until resolution.



Transportation supervisors and the Operations Control Center log instances in which standard procedures are not followed, and follow-up with re-training.

Applies to: All WMATA departments

3.9 CORRECTIVE & PREVENTIVE ACTION

WMATA QMPs establish and/or reference document corrective action procedures to evaluate, mitigate, and prevent recurrence of non-conforming work or assets. These procedures investigate the root cause of nonconforming work and implement action plans to address the root cause and prevent recurring non-conformance.

Departments must maintain their own internal processes for undertaking internal or external corrective and preventive actions, as part of instilling a culture of continual improvement. Additionally, internal reviews or quality assessments performed by QICO, internal audits or self-assessments performed by individual offices/departments, safety investigations, or external audits performed by oversight authorities such as the FTA or WMSC, may result in findings and required internal or external corrective and preventive action(s).

Corrective and preventive actions are also applicable to findings related to the Safety Management System. Effective safety risk management through the implementation of defined and documented corrective and preventive measures, minimizes the potential for safety-related incidents throughout WMATA.

Elements of Corrective & Preventive Action

When a work item or existing asset is determined to be non-conforming, corrective action procedures are in place to identify the root cause of this condition so that it can be addressed to both rectify the non-conformance and prevent recurrence. These procedures include:

- Identifying the root cause of the non-conformance. The root cause of a non-conformance is identified prior to the responsible party proposing or implementing an effective corrective action.
- Determining a corrective action plan sufficient to address the root cause and prevent recurrence of the non-conformance. Upon identification of the root cause, the responsible party determines and proposes an action plan that addresses the root cause and prevents future occurrence of the non-conformance.
- Assessing and prioritizing risk. Risk analysis and assessment processes are in place for the purpose of risk mitigation. Corrective and preventive actions are also implemented to mitigate risk, and more effectively assess and identify (potential) hazards, as a function of safety risk management.
- Evaluating effectiveness of the corrective action performed. The corrective action is implemented by an agreed upon date, and subsequently reviewed to ensure it is effective in addressing the root cause and preventing the recurrence of the non-conformance. If found to be ineffective, actions are taken to determine if either the action was not implemented as planned, or the root cause has not been effectively identified and/or addressed.



Applies to: All WMATA departments

- Closeout. In circumstances which the source of the corrective action is an issuing authority external to the department, evidence of corrective action completion must be submitted to that authority to approve and close or reject and leave open.
- Document and maintain records of the root cause and corrective actions taken. Corrective actions, including root cause analysis, performed to address non-conformance(s) are documented on a traceable report by WMATA's quality representative, and maintained as a quality record in accordance with the QMSP.

The elements of a preventive action process are essentially the same; however, they are based on a continuous risk assessment to identify potential non-conformances, and take action to prevent a non-conformance from occurring, rather than responding to one that has already occurred.

Departmental/individual self-assessments, should be done at least annually, and should be a comprehensive, systematic and regular review of the department's/individual's activities to:

- ensure compliance to the QMSP,
- ensure compliance to the department's QMP,
- identify any issues (findings, non-conformances, risks, etc.), and
- assess the effectiveness of implemented processes.

QICO is available to provide guidance for audits, assessments, and determining and implementing corrective and preventive actions.

Applies to: All WMATA departments

3.10 QUALITY RECORDS

Quality records are the documents which provide objective evidence that procedures, work instructions, policies, processes, etc., have been executed as required. They are the documented evidence that work has been performed in accordance with the specifications, policies, procedures, requirements of office/department QMPs, project specific QMPs, and this QMSP.

WMATA QMPs establish and/or reference procedures for the filing, archiving, maintenance and disposition of quality records. External quality records created and maintained by suppliers, contractors/sub-contractors, and consultants, are also governed by controlled quality records procedures. Established procedures outline the following processes for the quality records:

- Identification: QMPs define and/or reference the quality records for the office/department, project/program, maintenance operation, and operations group. Documents considered quality records include, but are not limited to:
 - design reviews
 - material certifications
 - material test reports
 - asset inspection reports
 - equipment calibration and service records (when required by policy or regulatory mandate)
 - maintenance work orders
 - personnel training and qualification records
 - assessment, review, and audit reports
 - shipment authorization and acceptance forms
 - non-conformance reports
 - corrective action reports
 - dispatch records
 - operations center video records
- Collection: QMPs identify and/or reference WMATA's representative responsible for ensuring that quality records are comprehensive and completed and collected within the specified timeline.
- Filing: QMPs establish and/or reference a process for organizing and indexing quality records. The established filing system of quality records allows for the ability to readily retrieve documents as needed for review and use. The filing process may also include the use of metadata or file naming conventions to facilitate ready retrieval.
- Storage: QMPs describe and/or reference the method by which quality records are stored to prevent damage or loss. This includes the security and back-up of electronic data off-site. The means for storage of quality records allow for the ability to readily retrieve documents as needed for review and project use.

Applies to: All WMATA departments

- **Disposition:** QMPs specify and/or reference retention times, in accordance with contract requirements, of quality records, as well as establish the process for final disposition. Quality records that are associated with on-going litigation or claims are maintained, as directed by the legal department. Quality records related to the safety of a work item are maintained while that work item is in service.

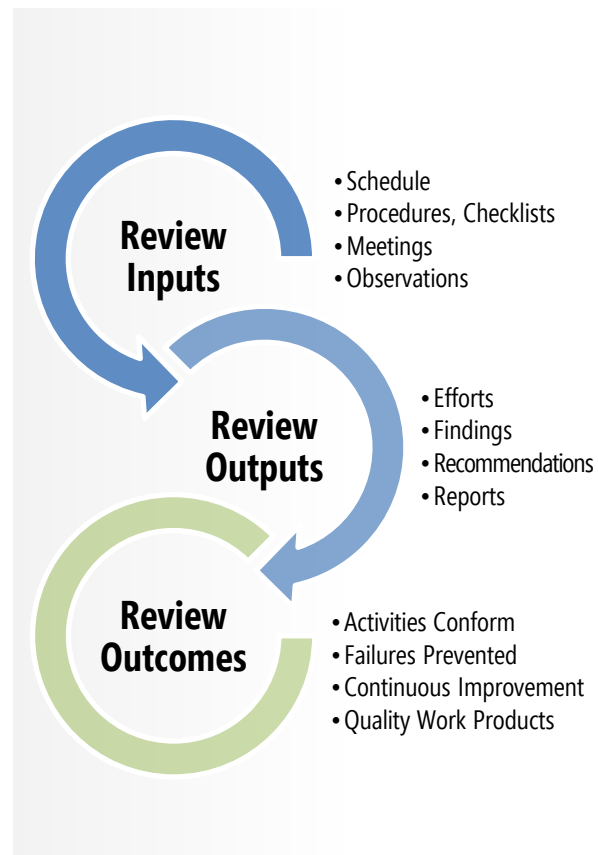
3.11 INTERNAL & SAFETY REVIEWS & QUALITY ASSESSMENTS

Internal and safety reviews and quality assessments are key components of the WMATA assurance programs and are fundamental to the successful implementation of the QMSP.

QMPs designate the quality representative(s) responsible for the office/department, project/program, specific QMP, operations, or maintenance activity. To ensure the integrity and objectivity of the process, only qualified personnel, independent of those having direct responsibility for the activities being reviewed, carry out internal reviews, quality audits, and quality assessments. Qualification involves training and/or certification, as defined by the quality function responsible for the review, audit, or assessment.

Internal reviews, quality audits, and quality assessments are conducted throughout WMATA. These may include, but are not limited to routine tasks, work instructions, procedures, and plans. Areas of focus include: Engineering & Maintenance; Service Delivery; Capital Programs – Management and Execution; and Safety. QICO’s internal and safety reviews and quality assessments are guided by the QMS and described in Section 2.4.2.2.

Required elements and characteristics of reviews, audits and assessments are summarized on the following page.



Applies to: All WMATA departments

3.11.1 Planning

Reviews, audits and assessments are scheduled at a frequency commensurate with the importance, risk profile, previous assessment and performance of the activity, findings, and existing safety history/record. Safety reviews are performed on a three-year schedule. Frequencies may be increased as needed to identify hazards, assess risks, and develop effective risk mitigation strategies more closely.

In preparation for a review, audit, or assessment, the lead reviewer/auditor/assessor notifies the reviewee(s) of the upcoming activity and develops a review plan to include opening and closing meetings, scope, methodology, and schedule. The lead may designate a team to include any subject matter experts who can provide specific insight into the areas under review. The lead also identifies potential participants from the department or office under review, audit/assessment locations (e.g., office, field, off-site), and any associated logistical requirements such as software access, travel, and site safety considerations.

3.11.2 Performance

Elements selected for review are evaluated against documented requirements and are verified through objective evaluation of evidence either provided by the reviewee or observed by the reviewers. Objective evidence may include certifications, test reports, approved submittals, and other quality records.

The lead reviewer assesses each element according to the requirement and the objective evidence, and assign an evaluation using the following terminology:

- **Area for Improvement** – the reviewed element is compliant with requirements; however, the review team identified potential improvements to established procedures or work plans to ensure continued compliance.
- **Discrepancy** – inconsistencies between work observed and established work standards. As discrepancies are noted in multiple assessments, they may constitute a finding (a risk to the agency/WMATA).
- **Field Observation** – notable site conditions. If possible, these are communicated to supervisors for immediate correction or work order generation; they may result in discrepancies at a later time if left unaddressed, or if conditions deteriorate.
- **Finding** – a discrepancy which may pose a risk to WMATA; when the assessed element is non-compliant or clearly violates a requirement such that corrective measures are necessary and addressed through the corrective action process described in Section 3.9.
- **iCAPA** – an action issued to departments and offices within WMATA, who are then required to develop a plan to address the required action(s).
- **Items Resolved During the Review** – issues identified by QICO during the Internal Review (IR), but were immediately resolved by the process owner.
- **Required Actions** – an action needed to correct a non-compliance, negative or deficient condition, such as what might be categorized as a finding, during a review.

Applies to: All WMATA departments

- **Supplemental Guidance** - guidance based on QICO's observances of additional elements not relating to the parameters of its review, where opportunities for applying quality related standards, programs, and procedures will bring greater safety and efficiency.
- **Win** – evidence of effective business practices.

3.11.3 Reporting

QMPs establish and/or reference guidelines and templates for summarizing, recording, and reporting the results of reviews and assessments. QMPs also include and/or reference methods for reporting and tracking findings resulting from assessments, reviews, and other audits, to include response and resolution in accordance with the corrective action processes defined per Section 3.9.

As warranted, all reports identify activities found to be compliant, include observations and recommendations, and identify any findings of non-compliance that require corrective action. The report must be of sufficient detail to support corrective action investigation and development, if applicable.

INCP offices classify the risk associated with their findings and required actions on a standardized risk assessment scale, as follows:

PROBABILITY	RISK ASSESSMENT Matrix				
Almost Certain (5)	Low	Moderate	Elevated	High	High
Likely (4)	Low	Low	Moderate	Elevated	High
Possible (3)	Low	Low	Moderate	Elevated	Elevated
Unlikely (2)	Insignificant	Low	Low	Moderate	Moderate
Rare (1)	Insignificant	Insignificant	Low	Moderate	Moderate
IMPACT	Negligible (1)	Minor (2)	Moderate (3)	Significant (4)	Major (5)

Probability of Occurrence

Potential Impact of Risk

Internal Safety Reviews performed by QICO utilizes a safety risk evaluation criterion based on MIL-STD-882E, which categorizes all identified hazards in terms of severity and probability of occurrence. This risk evaluation is applied to the scoring methodology identified in section 3.11.4, below. The risk assessment matrix utilized are as follows:

Applies to: All WMATA departments

RISK ASSESSMENT Matrix				
RISK PROBABILITY	RISK SEVERITY			
	Catastrophic - 1	Critical - 2	Marginal - 3	Negligible -4
Frequent (A)	1A	2A	3A	4A
Probable (B)	1B	2B	3B	4B
Occasional (C)	1C	2C	3C	4C
Remote (D)	1D	2D	3D	4D
Improbable (E)	1E	2E	3E	4E

Completed reports, and checklists are maintained as quality records in accordance with Section 3.10.

Applies to: All WMATA departments

3.11.4 Scoring

At the conclusion of each internal review, audit, or assessment, the results are quantified and scored based on the performance of the processes reviewed, as well as risk evaluation identified above to determine risk rating. Illustrated below are the elements of an internal review that QICO uses to determine the review score. This scoring methodology is a component of WMATA's overall strategy to drive continual improvement through quantifiable review and assessment results.

What We EXAMINE	What We MEASURE		What We FIND
Function Reviewed	QM & ASP Practices	Risk Evaluation*	Review Score
Engineering & Maintenance Departments or offices that perform engineering or maintenance of WMATA assets – Rolling Stock, Facilities, Guideway and Systems.	15 Core QMS Standards A measure of compliance with the applicable QMS core standards as part of the Internal Quality Reviews.	High Rating A finding, if unaddressed could <u>Almost Certainly</u> result in a <u>Major</u> failure of a business process to meet objectives	Exemplary consistent quality outcomes, strong management practices, few or no finding of elevated risk or higher
Service Delivery Departments or offices that are directly involved in the transportation of passengers to include the functions that operate revenue vehicles, Metro stations and central communications.	ASP A measure of compliance with the ASP pillars, and the associated applicable components as part of the Internal Safety Reviews.	Elevated Rating A finding, if unaddressed could <u>Likely</u> result in a <u>Significant</u> failure of a business process to meet objectives	Satisfactory acceptable quality outcomes, limited areas for improvement in management practices, come findings of elevated risk or higher
Capital Program Management & Execution Departments, offices or projects teams that are responsible for managing a capital program or project from the initial planning phase through to project closure and handoff to Operations.		Moderate Rating A finding, if unaddressed could <u>Possibly</u> result in a <u>Moderate</u> failure of a business process to meet objectives	Marginal generally acceptable quality outcomes, multiple areas for improvement in management practices, numerous findings of elevated risk or higher
Safety Departments or offices that are subject to external (federal, state or local) and internal system safety regulations.		Low Rating A finding, if unaddressed could <u>Possibly</u> result in a <u>Minor</u> failure of a business process to meet objectives Note: For Internal Safety Reviews, risk rating is either red, yellow, or green.	Deficient inconsistent and low-quality outcomes, apparent deficiencies in management practices, numerous findings of elevated risk or higher Reference the Quality Score Work Instruction (QICO-PRO-W01-XX*) for details on the scoring process

* where "XX" denotes the current document revision

Applies to: All WMATA departments

3.12 TRAINING

All personnel who perform work for WMATA are qualified based on education, experience, and training, as outlined in the QMPs; this includes consultants and contractors/augmented staff. QMPs establish and/or reference the applicable training procedures for the identified personnel who perform the work. At a minimum, QMPs outline and/or reference the following processes for training:

- Establish the process by which project or operations teams are trained in the QMP, and understand the importance of quality, as well as their impact on overall quality.
- Identify the training needs of all staff. Because training needs may vary by role, a training matrix for each project or department/office will be created that identifies each role and the corresponding, relevant training needs for each role, including frequency (e.g., new employee training, monthly, weekly, etc.).
- Establish a schedule for providing required training. The department procedures identify how often each required training is provided, and when that training is offered to project or department/office staff.
- Evaluate the effectiveness of the training. QMPs outline and/or reference a procedure for reviewing the effectiveness of training and determine if revisions or additional training is required.
- Maintain all training and qualification records for required training per the training matrix per section 3.10. This includes documentation associated with each training session (i.e., attendance lists, agendas, test results, etc.). The results of training evaluations are recorded and maintained. Additionally, project staff qualifications, including completed training, certifications, and licenses, are maintained within project or department files.
- All WMATA employees, including consultants and contractors/augmented staff, are required to be trained and/or be familiar with the QMSP, and the respective QMPs for their offices.



Quality in Practice

Metro received the Gold Safety Award from APTA for our Roadway Worker Protection Program - the backbone of our safety training efforts. WMATA's program is now recognized as a model for the industry.

Applies to: All WMATA departments

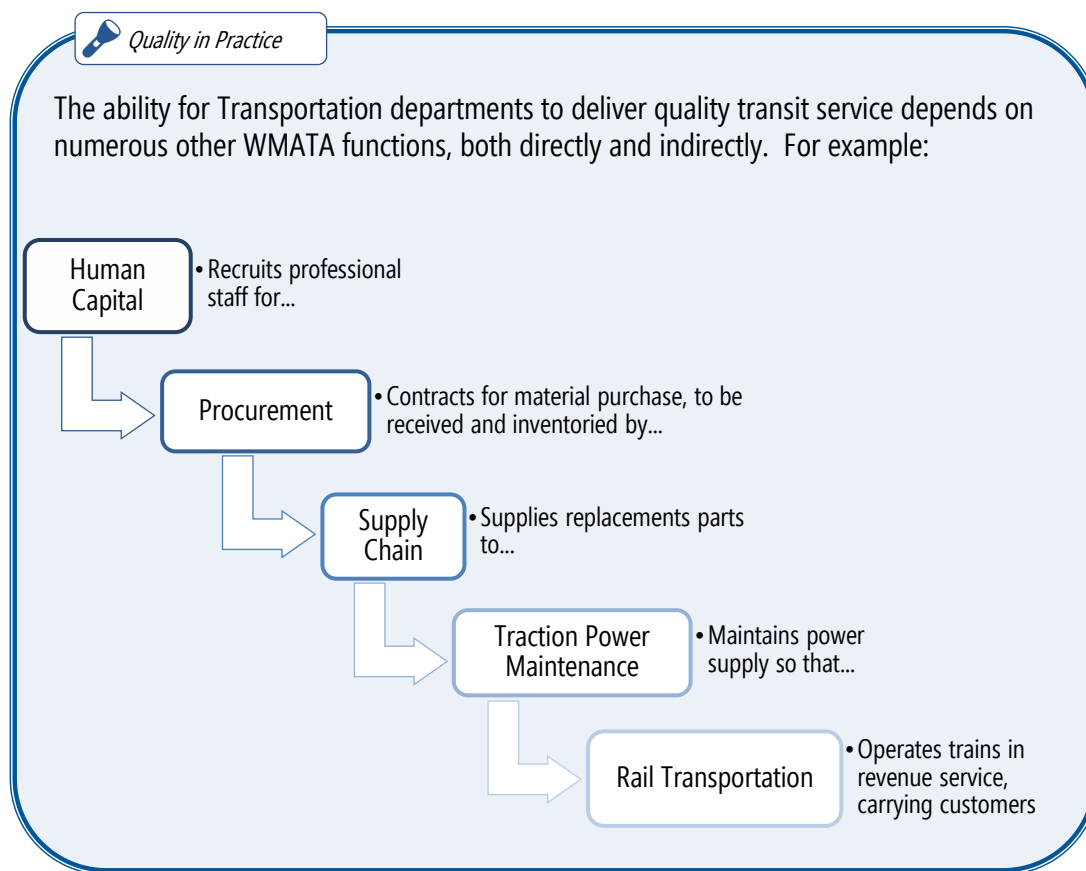
3.13 CUSTOMER FOCUS

Meeting the expectations of our paying customers and stakeholders is paramount. WMATA's Transportation functions directly serve our riders. The delivery of quality service to the riding public depends also on numerous departments providing quality services to internal customers.

3.13.1 Internal Customers

As shown in the diagram in Section 2.2.2, most WMATA departments provide services and support either directly or indirectly to the transportation business units, which directly serve riders with transit service.

Departmental QMPs identify and/or reference the department's customers, define how quality can be described or measured, and identify targets or goals for quality. In this way, the Customer Focus standard of the Quality Management System goes hand-in-hand with WMATA's programs for business planning and performance measurement programs.



Applies to: All WMATA departments

3.13.2 External Customers

Ensuring WMATA meets the needs and expectations of its riders depends on ensuring continuous effort in tracking measures of service quality and customer satisfaction.

The QMPs for departments responsible for the above functions identify and/or reference the processes and methods by which these functions are carried out and scoped, to best reflect what aspects of quality are most important to the riding public, and how that information is delivered to internal customers.

QMPs for departments that utilize this information describe and/or reference the processes by which information is obtained and fed back into decision-making and prioritization in a continual improvement process. Where applicable, QMPs emphasize efforts that impact the key drivers of customer satisfaction.



Q4 FY2021 Metro Performance Report

FYTD Performance July 2020 - June 2021

Quality Service:

My Trip Time

91% of customers arrived on-time.

Target $\geq$ 88% on-time

MetroBus On-Time Performance

75% of buses departed on-time.

Target $\geq$ 75% on-time

MetroAccess on-time Pick-up Performance

96% of vehicles arrived on-time.

Target $\geq$ 90% on-time

Safety & Security:

Part / Crime

646 crimes

FYTD Target $\leq$ 840

Red Signal Overruns

11 red signal overrun incidents

FYTD Target $\leq$ 11

NTD Bus Collisions

2.8 collisions per million miles

FYTD Target $\leq$ 3.7

Ridership:

Overall Ridership

81.3

FYTD Budget Forecast 61



Legend:

No Target

Near Target

Met or above target

Target not met

Source: Metro Performance Report Q4FY2021

- Evaluate the effectiveness of the training. QMPs outline and/or reference a procedure for reviewing the effectiveness of training and determine if revisions or additional training is required.

4

APPENDICES

4.1 REFERENCES

Federal Transit Administration Circular: Third Party Contracting Guidance: FTA C 4220.1F, Rev. 4, March 18, 2013.

Federal Transit Administration Quality Management System Guidelines: FTA-PA-27-5194-12.1

Federal Transit Administration Quality Assurance and Quality Control Guidelines: FTA-IT-90-5001-02.1

Quality Management Systems – Requirements, International Standards Organization, ISO 9001:2015(E)

Tunnel Security for Public Transit, American Public Transportation Association, Infrastructure Security Working Group, APTA SS-SIS-RP-16-15, March 2015

*QICO Document Governance and Hierarchy: Document P/I 1.1/XX**

** where "XX" denotes the current document revision*

4.2 ACRONYMS

APTA	American Public Transportation Association
ASP	Agency Safety Plan
ASTM	Association for Testing Materials
CAP	Corrective Action Plan
CFR	Code of Federal Regulations
DHS	Department of Homeland Security
DOT	(United States) Department of Transportation
DQP	Design Quality Plan
FEMA	Federal Emergency Management Agency
FMEA	Failure Mode and Effects Analysis
FTA	Federal Transit Administration
GAO	Government Accountability Office
iCAPA	Internal Corrective Action Preventive Action
ISO	International Organization for Standardization
MARC	Management Audits, Risk and Compliance

MOA	Memoranda of Agreement
NTSB	National Transportation Safety Board
OIG	Office of Inspector General
OQO	Owner's Quality Oversight
PTASP	Public Transportation Agency Safety Plan
QA	Quality Assurance
QC	Quality Control
QICO	Quality Assurance, Internal Compliance and Oversight
QMP	Quality Management Plan
QMSP	Quality Management System Plan
SAFE	Office of System Safety and Environmental Management
SMS	Safety Management System
SOP	Standard Operating Procedure
WMATA	Washington Metropolitan Area Transit Authority (interchangeable with "Metro")
WMSC	Washington Metrorail Safety Commission

4.3 DEFINITIONS

Area for Improvement – the reviewed element is compliant with requirements; however, the review team identified potential improvements to established procedures or work plans to ensure continued compliance.

Assessment – see “Quality Assessment” below.

Assessment Finding or Issue – record of evidence that a criterion for audit, assessment, or review is being met (compliance/conformance) or that is not being met (non-compliance/non-conformance).

Assets – an item, part, system, assembly, vehicle or thing that has potential or actual value to WMATA in maintaining its system in providing reliable service to the public, including but not limited to rolling stock, track, structures, systems, facilities, stations, major equipment, etc.

Audit – independent and objective appraisal to examine, evaluate or review the fair presentation of financial statements, quality standards for a service, process, product or system, economy and efficiency of operations, effectiveness of achieving grant program results, compliance with internal policies and procedures, compliance with laws and regulations and/or detection of fraudulent activities. Audits may include inspection of documentation and information management systems, inquiries, site visits, and desk reviews.

Calibration – a comparison of measurement values delivered by a device under test with those of a calibration standard of known accuracy. Such a standard could be another measurement device of known accuracy or a device generating the quantity to be measured. Calibration is performed to detect, correlate, eliminate, and report by adjustments any variation in accuracy of the instrument or measuring device.

Closeout – the process of completing the actions required under a corrective action plan.

Closing Meeting – signifies the end of fieldwork phase of an audit and provides opportunity for management to discuss audit results with the auditors prior to issuance of reports.

Compliance – an affirmative indication or judgment that a product or service has met the requirements of the relevant specification, contract, or regulation.

Conformance – fulfillment by a product, process, or service of specified requirements.

Contract Documents – refers to the documents included in a contract or purchase order that detail the requirements, specifications, final design, and operating procedures of a procured product or service; contract documents are used to determine a product’s compliance or conformance with the contract agreement.

Core QMS Standards – the 15 distinct categories of characteristics, requirements, and best practices whose development and implementation are essential to WMATA’s adoption of a Quality Management System that aligns with industry practices.

Corrective Action – action to eliminate the cause of a nonconformity and to prevent recurrence.

Corrective Action Plan (CAP) – a plan or set of tasks that outline corrective measures planned or already taken to address audit recommendations and related deficiencies or findings. CAPs are used as a management tool to identify specific actionable items to be performed, milestone schedules, action coordinators, performance measures and verification strategies to ensure completion of each required action.

Deficiencies – failures associated with internal controls required to meet the desired objective.

Design Input – criteria, parameters, basis, or other design requirements upon which detailed design is based.

Design Output – drawings, specifications, and other documents defining technical requirements of structures, systems, and components.

Design Review – formal review of existing or proposed designs to detect and remedy design deficiencies that would affect fitness-for-use and environmental aspects of the product, process, or service, and/or the identification of potential improvements of performance, safety, and economic aspects.

Digital Signature - a type of electronic signature process that uses an encrypted digital signature certificate (DSC) to make the document tamper-evident which can be verified with its public key, created upon signing. The process creates an audit trail, to ensure the authenticity of the document, its source, and the signee through the employee's unique digital identify profile through the employee's computer/network account.

Discrepancies – inconsistencies between work observed and established work standards. As discrepancies are noted in multiple assessments, they may constitute a finding (a risk to the agency/ WMATA).

Engineer of Record – the individual responsible for the development of contract documents, and who, as a registered Professional Engineer endorses (i.e., signs and/or seals) the record drawings.

Executive Management Team – executive and senior level staff supporting the General Manager/Chief Executive Officer in the executive management of the organization.

External Audit – independent and objective review performed by a non-WMATA entity or oversight body that reports to a third party. This would include, but not limited to, actions taken by the Federal Transit Administration (FTA); Washington Metrorail Safety Commission (WMSC); Federal Emergency Management Agency (FEMA); Department of Homeland Security (DHS); Jurisdictional Reviews – Operating and Capital (District of Columbia, Maryland, and Virginia); Government Accountability Office (GAO); External Financial Auditors; External Payroll Auditors related to Labor Contracts; and consulting firms commissioned or contracted by WMATA management or the Board of Directors; or the National Transportation Safety Board (NTSB) (collectively "External Auditors"). The NTSB and WMATA's Office of Inspector General (OIG) also conduct audits and investigations; however, resulting recommendations are be tracked and managed in the same manner.

Failure Mode and Effects Analysis (FMEA) – an activity that helps identify potential failure modes based on experience with similar products and/or processes or based on common physics of failure logic.

Field Observation – notable site conditions. If possible, these are communicated to supervisors for immediate correction or work order generation; they may result in discrepancies at a later time if left unaddressed, or if conditions deteriorate.

Finding – a discrepancy which may pose a risk to WMATA; when the assessed element is non-compliant or clearly violates a requirement such that corrective measures are necessary and addressed through the corrective action process.

First Article Inspection (FAI) – detailed report submitted by the supplier that provides the physical part dimensional inspection and other information that demonstrate adherence to the specification and technical requirements of the part being reviewed for qualification.

Inspection – the act of observing, documenting, and reporting the work in progress to verify whether the practices, processes, and assets or parts comply with the procedures, work instructions, specifications, or contract requirements.

Internal Corrective and Preventive Action (iCAPA) – an action issued to departments and offices within WMATA, who are then required to develop a plan to address the required action(s).

Internal Review – a type of internal assessment performed by QICO that comprehensively studies and observes functional areas of WMATA’s operations and may span multiple departments with broad scopes.

Maintenance – Encompasses all Metro departments and offices performing tasks to conserve the original condition of an asset or resource while compensating for normal wear and tear.

Measure – a pre-defined quality or safety and security criterion utilized during an internal review or quality assessment to score and categorize the results of said review or assessment. QICO has defined a set of quality and safety measures for this purpose.

Non-Compliance – The failure to meet a specific criterion, standard, or regulatory requirement.

Non-Conformance - Non-fulfillment of a requirement or a failure to meet an intended state/specification; a product/material which does not meet (conform with) specifications and/or defined/customer requirements. Not meeting the requirements of authorities (e.g., processes, work instructions, etc.).

Non-Conforming Work – work performed that does not meet the procedure, work instruction, specification, or contract requirements, and documented by a Non-conformance Report (NCR), requiring review of root-causes and approval for use-as-is or repair dispositions.

Objective Evidence – any statement of fact, information, or record, either quantitative or qualitative, pertaining to a product, process, or service and based on observation, measurement, or test that can be verified.

Observation – a fact of evidence discovered during an audit and substantiated by objective evidence. Failure to act in response to an observation may result in a non-conformance.

Opening Meeting – entrance meetings or discussions that signify the beginning of an assessment, review, or audit, typically include department management and administrative staff involved, and are an opportunity to discuss the scope, available resources, and other concerns.

Operations - Encompasses all Metro departments and offices performing tasks that support the operation of the transit system.

Organization – any entity or grouping of people performing activities that affect the operations of WMATA.

Owner – WMATA in general, or the WMATA department identified as having responsibility for completing a corrective action. This may also include WMATA’s designated agent or representative.

Owner’s Quality Oversight – the act of overseeing the implementation of a Quality Management Plan by WMATA or its representative.

Preventive Action – a proactive action implemented to ensure a potential non-conformity does not occur.

Procedure – a specified way to perform an activity.

Process – a set of interrelated resources and activities which transform inputs into outputs or outcomes.

Product – the outcome or result of coordinated business activities, which may comprise a tangible and discernible item, a service rendered, or a public facility.

Program – a group of related projects managed in a coordinated way to obtain efficiencies or benefits that would not be realized if the projects were managed individually.

Project – a temporary endeavor undertaken to achieve a specified, unique defined outcome in service, product, methods, systems, or assets.

Quality Assessment – a type of internal assessment performed by QICO to evaluate conformance to the procedures and actions documented in Quality Management Plans, as well as success towards achieving quality targets. Quality Assessments are focused on determining the existence and effectiveness of quality management standards and practices in day-to-day departmental operations.

Quality Assurance – all planned and systematic activities necessary to provide confidence to management that a product or service satisfies given requirements for quality. In the WMATA QMS context, the Quality Assurance function is performed independently from departments directly performing the work.

Quality Assurance Inspection – the practice of verifying that the appropriate QC processes are followed consistently, through an independent auditing and confirmation program.

Quality Control – the process by which factors involved in the creation and delivery of assets and services are verified against specifications and requirements. In the WMATA QMS context, Quality Control is the responsibility of the process owner (the department directly performing work).

Quality Control Inspection – activities which provide a means to control and measure characteristics as they relate to established requirements. This includes techniques and activities that sustain the Quality of an item to satisfy given needs and use of such techniques and activities.

Quality Management System – a system of processes and procedures as defined and identified in the QMSP, comprised of policies, objectives and management plans developed to document requirements for assets, parts, and services.

Quality Record – documented proof that a process was followed, as per its corresponding SOP or work instruction. It typically is in the form of a completed (i.e., filled out) checklist, form, report, etc., and is considered a Level 5 document. Note: Quality records must also be document-controlled by the owners of the established processes within Metro.

Required Actions – an action needed to correct a non-compliance, negative or deficient condition, such as what might be categorized as a finding, during a review.

Review – see “Internal Review” above.

Self-Assessment – internal evaluation of a department/oneself actions and, in particular, of the performance at a job/task considered in relation to an objective standard/procedure.

Service – the provision of an intangible benefit, which is usually a significant element of a tangible product.

Surveillance – the unannounced act of monitoring or observing specific acts or activities to verify conformance to the specified requirements.

Supervisor – an individual employed by Metro who has the authority to take, direct others to take, recommend or approve a Personnel Action or direct an Employee to obey an order.

Supplemental Guidance - guidance based on QICO’s observances of additional elements not relating to the parameters of its review, where opportunities for applying quality related standards, programs, and procedures will bring greater safety and efficiency.

Recommendation – a recommended action during an assessment or review, substantiated by objective evidence, suggesting an improvement to a particular operation of the Project.

Reject – disposition indicating the item is unsuitable for its intended purpose and economically or physically incapable of being either reworked or repaired.

Rework – disposition that indicates the deficiency can be brought into conformance with the original requirements through reassembling, reprocessing, reinstallation, or completion of the required operations. It is also an action to restore nonconforming work to bring it into compliance.

Root Cause Analysis – process to identify the primary cause of a non-conformance which, if corrected, prevents reoccurrences of non-conformance, failures, or unacceptable deviations.

Risk – the composite of predicted severity and likelihood of the potential effect of a hazard

Risk Rating – is assessed on the combination of the probability of occurrence of risk and the severity of the risk.

Safety Management System (SMS) – formal, top-down, WMATA-wide, data-driven approach to managing safety risk and assuring effectiveness of safety risk mitigations. It includes systematic policies, procedures, and practices for managing safety risk. The SMS is a decision support system for WMATA management.

Testing - subjecting an item to a set of physical, chemical, environmental, or operating conditions to verify the item meets requirements.

Traceability – the ability to track the history, application, or location of an element, by means of recorded identifications.

Validation – confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use are fulfilled.

Verification – the act of reviewing, inspecting, testing, checking, assessing, or otherwise establishing and documenting whether items, processes, services, or documents, conform to specified requirements.

Win – evidence of effective business practices.

Work – the act of producing and installing the product or service to be furnished and provided by WMATA or its contractors including, design, engineering, construction, supply of vehicles and related systems, utility adjustments, financing services, operations, maintenance, other work of reconstruction, or reinstatement.

4.4 FTA QMS CROSSWALK

The WMATA QMSP was developed following the overall framework specified in the FTA publication, FTA-PA-5194-12.1, *Quality Management System Guidelines*, with various modifications to tailor the QMS to WMATA’s specific context and nomenclature. The following table is provided as a quick reference indicating which sections of the WMATA QMSP correspond to the essential elements as specified in the FTA guide on the following page.

#	FTA QMS Element	WMATA QMSP Section Reference(s)
1	Management Responsibility	Management Commitment in Section 2.2.1 and Management Responsibility Procedure (WMATA-INCP-1.01.XX*)
2	Documented Quality Management System	Sections 2.2.3, 2.3 and Documented Quality Management System Procedure (WMATA-INCP-1.02.XX*)
3	Design Control	Section 3.1 and Design Control Procedure (WMATA-INCP-1.03.XX*)
4	Document Control	Section 3.2 and Document Control Procedure (WMATA-INCP-1.04.XX*)
5	Purchasing	Section 3.3 and Purchasing Procedure (WMATA-INCP-1.05.XX*)
6	Product Identification and Traceability	Section 3.4 and Identification and Traceability of Assets and Material Procedure (WMATA-INCP-1.06.XX*)
7	Process Control	Section 3.5 and Process Control Procedure (WMATA-INCP-1.07.XX*)
8	Inspection and Testing	Section 3.6 and Inspection, Testing and Status Procedure (WMATA-INCP-1.08.XX*)
9	Inspection, Measuring, and Test Equipment	Section 3.7 and Inspection, Measuring, and Test Equipment Procedure (WMATA-INCP-1.09.XX*)
10	Inspection Testing and Status	Section 3.6.3 and Inspection, Testing and Status Procedure (WMATA-INCP-1.08.XX*)
11	Non-Conformance	Section 3.8 and Non-Conformance Procedure (WMATA-INCP-1.10.XX*)
12	Corrective Action	Section 3.9 and Corrective Action Procedure (WMATA-INCP-1.11.XX*)
13	Quality Records	Section 3.10 and Quality Records Procedure (WMATA-INCP-1.12.XX*)
14	Quality Audits	Sections 2.4.2, 3.11 and Internal Reviews and Quality Assessments Procedure (WMATA-INCP-1.13.XX*)
15	Training	Sections 2.3.6, 3.12 and Training Procedure (WMATA-INCP-1.14.XX*)

* where "XX" denotes the current document revision

4.5 QMS PROCEDURES

These top-level core QMS Procedures are strategic level documents (refer to Section 2.2.3 QMS Hierarchy), and by virtue of association with the QMSP, they, too, are considered approved by the GM, the Executive Vice President of INCP, and the Vice President of QICO, and do not require their additional signatures for approval.

Number	Title
WMATA-INCP-1.01.XX*	Management Responsibility Procedure
WMATA-INCP-1.02.XX*	Documented Quality Management System Procedure
WMATA-INCP-1.03.XX*	Design Control Procedure
WMATA-INCP-1.04.XX*	Document Control Procedure

Number	Title
WMATA-INCP-1.05.XX*	Purchasing Procedure
WMATA-INCP-1.06.XX*	Identification and Traceability of Assets and Material Procedure
WMATA-INCP-1.07.XX*	Process Control Procedure
WMATA-INCP-1.08.XX*	Inspection, Testing and Status Procedure
WMATA-INCP-1.09.XX*	Inspection Measuring and Test Equipment Procedure
WMATA-INCP-1.10.XX*	Non-Conformance Procedure
WMATA-INCP-1.11.XX*	Corrective and Preventive Actions Procedure
WMATA-INCP-1.12.XX*	Quality Records Procedure
WMATA-INCP-1.13.XX*	Internal Reviews and Quality Assessment Procedure
WMATA-INCP-1.14.XX*	Training Procedure
WMATA-INCP-1.15.XX*	Customer Focus Procedure

* where "XX" denotes the current document revision



The Washington Metropolitan Area Transit Authority (WMATA)