

LINK21

CONNECT NORTHERN CALIFORNIA

STRATEGIC PROGRAM PLAN

CHAPTER 6: QUALITY

April 2022

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Link21 Program Management Consultants (PMC)

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ISSUE AND REVISION RECORD

REVISION	DATE	PREPARER(S)	APPROVER	DESCRIPTION/NOTES
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1.A	10/18/2019	Kieran Kelly-Sneed, HNTB	Gay Knipper, HNTB	WPA.01 Initial DRAFT submittal
	10/29/2019	Sadie Graham, BART	Sadie Graham, BART	WPA.01 Initial DRAFT submittal review
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	02/10/2020	Sadie Graham, BART	Sadie Graham, BART	WPA.01 DRAFT submittal review
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	08/06/2020	Sadie Graham, BART	Sadie Graham, BART	WPA.02 V1 DRAFT submittal review
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				<i>No review requirement</i>
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SHAREPOINT PATH

Records Center/PRGM Record Center/WPA.04/SPP/
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ACRONYMS AND ABBREVIATIONS

ACRONYM/ABBREVIATION	DEFINITION
BART	San Francisco Bay Area Rapid Transit
CCJPA	Capitol Corridor Joint Powers Board
CDQM	Client Deliverable Quality Matrix
FTA	Federal Transit Administration
ISO	International Standards Organization
PMC	Program Management Consultants
PMT	Program Management Team
PQM	Program Quality Manager
PQP	Program Quality Plan
QA	Quality Assurance
QC	Quality Control
QMP	Quality Management Plan
QMS	Quality Management System
SPP	Strategic Program Plan

LINK21 PROGRAM TEAM NAMES

TEAM NAME	TEAM MEMBERS
PMC	The HNTB Team
PMT	BART/CCJPA + PMC
Consultants	Consultants supporting program identification/project selection
Link21 Team	PMT + Consultants

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6. QUALITY MANAGEMENT

6.1. Purpose

The Program Management Consultants (PMC) have adopted a process-based, systematic approach to quality management to meet the requirements of the Link21 Program (Link21). According to the International Standards Organization (ISO), a Quality Management System (QMS) is a set of interrelated or interacting elements that organizations use to direct and control how quality policies are implemented and quality objectives are achieved. A process-based QMS uses an approach to manage and control the implementation of quality policies and the achievement of quality objectives.

The process-based model is highly advantageous for a program of this magnitude and complexity. In an environment of rapid concurrent and sequential activities, it is important for the San Francisco Bay Area Rapid Transit (BART)/Capitol Corridor Joint Powers Authority (CCJPA), PMC, and Consultants supporting program identification/project selection (Consultants) — collectively known as the Link21 Team — to collaboratively maintain quality program-wide.

The Link21 QMS includes a quality plan that guides the PMC's work and separate quality plans for each of the Consultants that govern their work, all of which share common features described in the Federal Transit Administration (FTA) *Quality Management System Guidelines* (October 2019). The *Strategic Program Plan* (SPP) and collective management plans may also be considered part of the Link21 QMS, as they describe additional actions and policies implemented by management to assure the needs of Link21 are met.

The PMC will reinforce the development and implementation of a comprehensive QMS program that must be adopted by all members of the Link21 Team. A successful QMS program will support the management and delivery of Link21. It will be guided by the following objectives:

- Provide a thorough understanding of program requirements.
- Select and assign the right resources to meet Link21's unique needs.
- Fulfill program requirements.
- Identify and mitigate conditions that may adversely impact the program or project performance.
- Implement corrective action to address nonconforming conditions and prevent recurrence.
- Maintain quality records that provide objective evidence of QMS program execution.

There are critical components necessary to implement a successful QMS, many of which the SPP addresses. The PMC's approach to quality management relies upon the policies, procedures, workflows, and systems presented in the SPP. The QMS program



incorporates many of the SPP chapters with a broad focus on integrating people, processes, and tools. Such an approach will enable a QMS that is effective and measurable.

- **People:** A critical component of the QMS is the documentation and publication of clear and concise goals and objectives, and the identification of individual roles and responsibilities assigned to accomplish them. Chapter 2: Business Case includes goals, objectives, and performance metrics. Chapter 3: Organization, Communication, and Governance details the team structure, roles and responsibilities, and governance model.
- **Process:** Another critical component of the QMS is the development, implementation, and monitoring/auditing of detailed, documented workflows, processes, and procedures. Chapter 4: Stage Gate Process discusses key policies, processes, and workflows that would be utilized to manage the project scope(s)/context, risk, technical elements, schedules, estimates/cost, and finance. Chapter 9: Program Integration describes the strategy and approach to ensure effective collaboration between the service category delivery managers by proper identification, management, and documentation of interfaces.
- **Tools:** The Link21 SharePoint Collaboration Site (SharePoint) facilitates a vital role in quality management collaboration, enforcement, and execution. The site is planned to automate and directly support rigorous adherence to established workflows and procedures for the Link21 Team. Further, the site provides effective document management, version control, and traceability of business actions. This reduces errors and assists in quality audits and ongoing improvement efforts. Additionally, the site recognizes established roles and responsibilities, includes clear permissions and authorities, and enhances communication between the Program Management Team (PMT).¹ Chapter 5: Program Controls presents the details of the site as it is developed.

6.2. Strategy

The PMC's strategy is to provide consistent quality throughout the planning and delivery of Link21. The QMS framework not only delineates interrelationships and responsibilities of process owners across various delivery phases from an accountability perspective, but it also allows the process owners to operate and fit within the rules and boundaries of the QMS; thereby, enabling necessary and consistent quality control. The current draft of the SPP describes the portion of QMS applicable to the PMC's deliverables in detail and summarizes expectations for the portion applicable to the Consultants. This chapter will evolve over time to reflect updates to the QMS.

¹ BART/CCJPA and PMC



6.2.1. PMC Approach to Quality Management

The PMC developed and maintains a process-based *Program Quality Plan (PQP)* that applies to quality management of PMC services and deliverables through the program development and implementation cycles. The PQP defines the quality policy, responsibilities, objectives, processes, procedures, and required activities for the PMC. PMC team members are expected to adopt and follow the PQP, unless otherwise indicated by their contract. The program quality manager (PQM) oversees implementation of the PQP.

The PQP-defined quality management approach is characterized by the activities of quality planning, quality control (QC), and quality assurance (QA). Quality planning is a deliberate approach to identify the procedures, activities, and resources to be applied. By performing the identified QC activities, the PMC verifies that the program deliverables meet applicable requirements. The PQM and deliverable managers perform QA to confirm that the required QC activities were performed and that they were effective.

The PQP prescribes required quality records, which provide objective evidence of the reviews and are stored within the SharePoint Site as described by the Document Control Plan. These records may be made available to BART/CCJPA upon request.

QUALITY PLANNING ACTIVITIES

The PMC uses the Client Deliverable Quality Matrix (CDQM) as the primary tool, as prescribed by the PQP, to capture the review requirements, reviewers, review start, and end dates for all PMC deliverables. The PMC will use and update this matrix as a living document as new deliverables are identified and as requirements or schedules change.

Table 6-1 identifies the PQP's procedures and forms related to quality planning. Procedures are prefixed with QP and forms are prefixed with QF.

Table 6-1. Quality Planning Procedures and Forms

PROCEDURE NUMBER	PROCEDURE NAME	FORM NUMBER	FORM NAME
QP-PM-FTA 01	Quality Planning	QF-PM-FTA 02 QF-PM-FTA 07	Client Deliverable Quality Matrix Provider Quality Plan Approval Form
QP-PM-FTA 02	Program Quality Plan Training	QF-PM-FTA 03	Attendance Roster
QP-PM-FTA 03	Control of Quality Records	N/A	N/A
QP-PM-FTA 04	Deliverable Requirements	QF-PM-FTA 06	Deliverable Definition Form

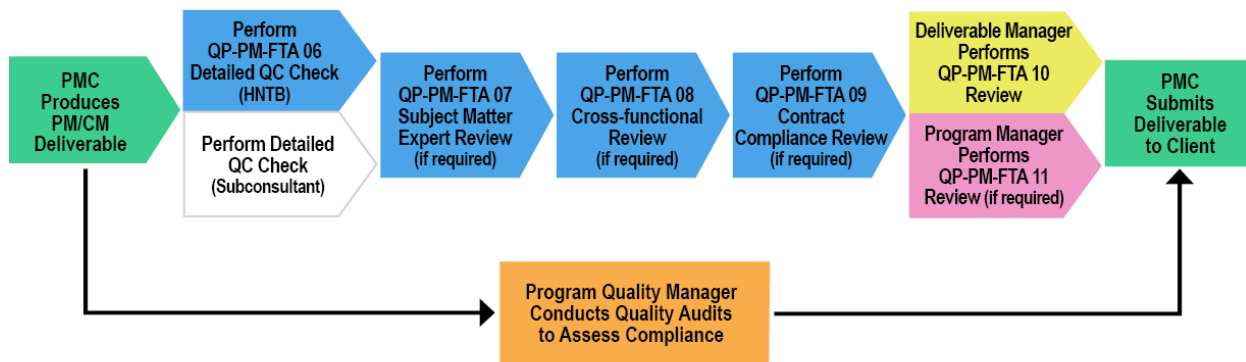


QUALITY CONTROL ACTIVITIES

The PMC reviews deliverables via a sequence of review procedures, each of which has a distinct focus or purpose. The detailed QC and deliverable manager review procedures apply to all deliverables, and the CDQM form indicates what other review procedures apply. Deliverables developed in close collaboration with BART/CCJPA may be exempt from the required reviews, depending on the nature of the deliverable.

Figure 6-1 illustrates the process flow of the PQP, including the names and numbers of the QC procedures, and **Table 6-2** lists the forms that may be used to support and document the reviews.

Figure 6-1. PQP Process Flow



PM/CM = Program Management/Construction Management

Table 6-2. Quality Control Forms

FORM NUMBER	FORM NAME
QF-PM-FTA 04	Comment Resolution Form
QF-PM-FTA 05	Quality Check Record

QUALITY ASSURANCE ACTIVITIES

The PMC monitors quality records through quality audits and other QA activities and documents the corrective/preventive actions necessary to address any quality-related performance issues. Through these activities, the PMC also identifies opportunities for continuous improvement. The PQP outlines these tasks and requires the use of the forms listed in



Table 6-3, which the PMC documents as quality records in accordance with QP-PM-FTA 03, Control of Quality Records. Additionally, as Link21 progresses, the PMC will periodically perform lessons learned reviews to implement improvements to it.

Table 6-3. Quality Assurance and Audit Forms

FORM NUMBER	FORM NAME
QF-PM-FTA 08	Non-Conformance Report
QF-PM-FTA 09	Corrective/Preventative Action Request Form
QF-PM-FTA 10	Client Satisfaction Survey
QF-PM-FTA 11	Lessons Learned Template
QF-PM-FTA 12	Quality Audit Plan
QF-PM-FTA 13	Internal (13A) and External (13B) Quality Audit Checklists
QF-PM-FTA 14	Quality Audit Roster

PDF copies of the quality forms can be found in the PQP. Quality forms in their native format can be found on SharePoint in the PMC only area. Please contact the Link21 PQM for information regarding native files for these forms.

6.2.2. Consultants' Approach to Quality Management

The approach will be similar in many ways to that of the PMC, as both are founded upon BART and FTA policies and guidelines. Contract documents prescribe expectations and requirements for the Consultants' quality plans, as outlined below. A future update of this SPP chapter may describe the Consultants' approach once it is more thoroughly defined.

Each Consultant will:

1. Provide a Quality Management Plan (QMP) to ensure the accuracy and quality of work products produced for Link21. The QMP will reflect BART quality management policies and procedures and FTA Quality Management System Guidelines applicable to planning phase services and deliverables. Table 4-1 of the 2019 Guidelines identifies plan elements that may apply. Each QMP will be subject to review and approval by the PMT.
2. Provide quality management of Consultant and subconsultant services through execution of the QMP and its associated quality procedures. This includes QC and QA activities and maintenance of documentation thereof. It is expected that Consultants will perform periodic internal audits to assess adherence to their respective QMPs.
3. Participate in quality oversight by the PMT by making quality records available for inspection upon request, participating in quality audits led by the PMT, and responding to corrective or preventive action requests that may arise.