

# LINK21

CONNECT NORTHERN CALIFORNIA

## STRATEGIC PROGRAM PLAN

### CHAPTER 6: PROGRAM CONTROLS

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November 2022

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REVISION	DATE	PREPARER(S)	PMC REVIEWER(S)	APPROVER	DESCRIPTION/NOTES
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## SHAREPOINT PATH

Records Center/PRGM Record Center/WPA.01-01/SPP/  
2-PRGM-PH1-SPP\_CH06\_Program\_Controls-DRAFT\_FINAL

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## ACRONYMS AND ABBREVIATIONS

ACRONYM/ABBREVIATION	DEFINITION
<b>BART</b>	San Francisco Bay Area Rapid Transit District
<b>CCJPA</b>	Capitol Corridor Joint Powers Authority
<b>BIM</b>	Building Information Modeling
<b>GIS</b>	geographic information system
<b>PMC</b>	Program Management Consultants
<b>PMIS</b>	Program Management Information System
<b>PMT</b>	Program Management Team
<b>PQP</b>	Program Quality Plan
<b>SPP</b>	Strategic Program Plan
<b>WPM</b>	work plan modification

## LINK21 PROGRAM TEAM NAMES

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

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## 6. PROGRAM CONTROLS

### 6.1. Purpose

The Link21 Program (Link21) requires clearly defined program controls protocols to support the efficiency and accuracy of program operations for its entire life cycle. Program controls are processes, procedures, reports, checks, audits, and systems that are established, implemented, and consistently applied to accelerate the success of the program. An effective program controls plan is critical to successful delivery.

The program controls strategy will integrate budgets, expenditures, commitments, trends, forecasts, and schedules that will allow the Program Management Consultants (PMC) and the San Francisco Bay Area Rapid Transit District (BART)/Capitol Corridor Joint Powers Authority (CCJPA), which comprises the Program Management Team (PMT), to effectively manage Link21.

The PMC Program Controls Team (herein referred to as the Program Controls Team) covers key functions, such as program support, cost estimating and schedule management, risk management, cost management, consultant management, information system management, and document control and records management.

#### 6.1.1. Goals and Objectives

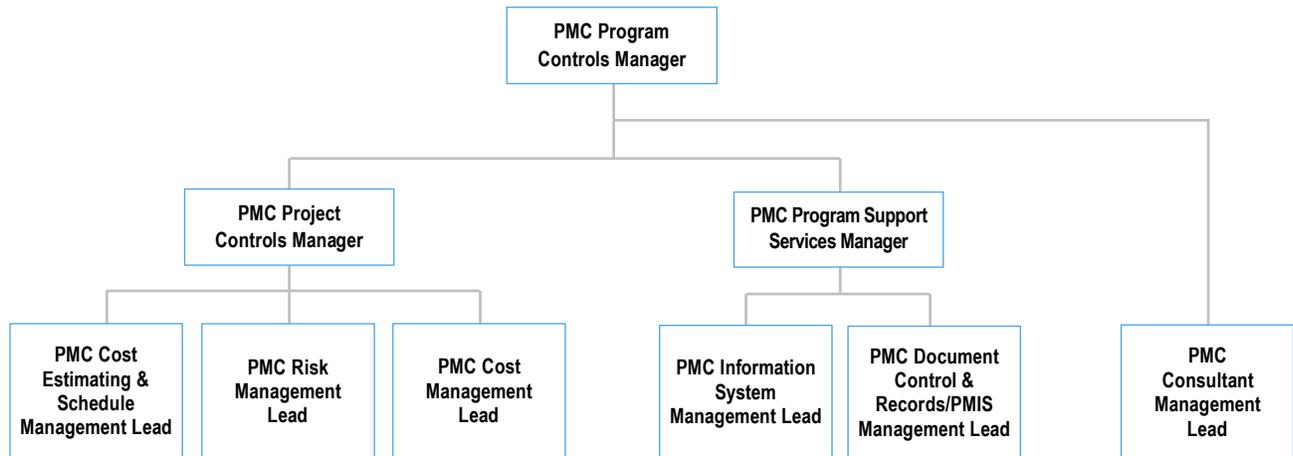
The program controls goals and objectives are to provide:

- The framework and guidance for how BART/CCJPA and the PMC will develop the program controls strategy for Link21.
- An overview of key program controls functions and duties.
- Adequate reporting to achieve the goal of transparency and accountability.
- A foundational Program Management Information System (PMIS) that will expand as Link21 evolves.

### 6.2. Strategy

#### 6.2.1. Core Functions

The Program Controls Team comprises six core functions that encompass the main tenets of program controls, as illustrated in **Figure 6-1**. The structure is scalable and streamlined to meet the growing needs of Link21. The PMC program controls manager is directly supported by the Program Controls Team, which also provides support to the PMT delivery managers.

**Figure 6-1. Key Roles Organization Chart**

The following sections provide a brief overview of each core function. The Primary Roles and Responsibilities section provides additional details on the key roles within the Program Controls Team and within these core functions.

### **COST ESTIMATING AND SCHEDULE MANAGEMENT**

Cost estimating and schedule management provides the best prediction of costs and durations for the level of program/project development that is available at various stages in the program/project life cycle. The Cost Estimating and Schedule Management Team manages the program cost estimate, collaborating and coordinating on all Consultant- and PMC-prepared capital cost estimates. This, in turn, supports the successful delivery of Link21 by providing timely, accurate, and meaningful cost estimate and schedule information to support decision-making.

### **RISK MANAGEMENT**

Risk management is a fundamental component of program management. It is most effective when deployed programmatically and throughout each project's life cycle — from early project definition until project closeout. The associated activities provide Link21 with the input and feedback needed to actively identify, understand, analyze, anticipate, and mitigate risks.

### **COST MANAGEMENT**

The cost management process is comprised of planning, estimating, monitoring, managing, and reporting on the overall Link21 budget and actuals. The goal is to establish a time-phased baseline budget, to track and maintain budget targets for each work plan, and to report actuals against plan.



## INFORMATION SYSTEM MANAGEMENT

Information system management integrates a broad range of program management and controls functionalities, including cost management, schedule management, contract administration, submittal management, document control, change management, and core project management functions, such as action tracking, issue resolution, and meeting management. It provides a unified platform to centralize core interactions between the Link21 Team<sup>1</sup> entities.

## DOCUMENT CONTROL AND RECORDS/PMIS MANAGEMENT

Document control and records management, led by the PMIS manager, provides for the protection, control, and accessibility of documents and records to support the efficiency and accuracy of Link21's operations. Documents handled on behalf of Link21 are the property of BART/CCJPA.

The PMT provides, supports, and maintains a document control and records program to comply with applicable state and federal laws, rules, and standards.

The Program Support Services Team compliments Link21's program management capabilities by verifying all standards are defined and adhered to, and it provides a consistent approach to delivering Link21. The team provides leadership, best practices, research, process development support and improvement, training and on/offboarding, 508 compliance support, and it oversees the *Strategic Program Plan (SPP)*, which serves as a bedrock document that memorializes program components, management strategies, and key decisions that support Link21's goals and objectives.

The team also plays an important role with their support with preparing and distributing internal program communications. It supports Link21 with program-level communication and presentations to a wide variety of audiences.

## CONSULTANT MANAGEMENT

Consultant management efficiently navigates the program control processes and procedures the Consultants need to work within, and it makes sure work plans are executed in accordance with those procedures. Consultant management is a support function that assists the Consultants, PMT delivery managers, project control analysts, and the overall PMT in developing and gathering the data necessary to manage the Consultants' work scope, facilitate the work planning process and work plan modification (WPM) process, and support the efficient submission of deliverables and other contractually required elements.

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<sup>1</sup> PMT and Consultants supporting program identification/project selection (Consultants)



### 6.2.2. Primary Roles and Responsibilities

The primary responsibilities of the Program Controls Team's key roles include oversight and management of the following activities.

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<b>PMC Program Controls Manager</b>	<ul style="list-style-type: none"><li>▫ Reports to the PMC program manager and directly interfaces with the PMT delivery managers and the BART program director.</li><li>▫ Manages the overall Program Controls Team.</li><li>▫ Enforces and monitors standards, policies, and procedures implemented by the Program Controls Team.</li><li>▫ Coordinates across disciplines to align the scope, schedule, budget, and risk; memorializes interface requirements and dependencies.</li></ul>
<b>PMC Project Controls Manager</b>	<ul style="list-style-type: none"><li>▫ Reports to the PMC Program Controls Manager and directly interfaces with the Program Controls Team.</li><li>▫ Manages the functional areas of Cost Estimating and Schedule Management, Cost Management, and Risk Management.</li><li>▫ Ensures that project controls standards, policies, and procedures are implemented by the Project Controls Team.</li><li>▫ Provides support across disciplines to ensure the effective implementation of project controls requirements.</li></ul>
<b>PMC Cost Estimating and Schedule Management Lead</b>	<p><i>Cost Estimating</i></p> <ul style="list-style-type: none"><li>▫ Estimates labor requirements and required project equipment, supplies, contracted services, costs; prepares cost estimates; and monitors expenditures.</li><li>▫ Leads the development of systems to enhance organizational estimating capability.</li><li>▫ Maintains estimating databases and integrates with other program controls tools.</li><li>▫ Integrates, in coordination with Cost Management estimates, project schedules to achieve phased timing of costs and resources.</li></ul>

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- Prepares independent estimates of change orders.
  - Verifies that all estimates (including Consultant/contractor/third-party developed) are in conformance with estimating procedures.
  - Reviews and signs-off on all estimates submitted.
  - Reviews and signs-off on all major change orders.

#### *Schedule*

- Oversees the development, generation, analysis, updates, and maintenance of baseline and progress schedules.
- Manages the Link21 Integrated Schedule, and which includes the PMC and Consultants' schedules the Master Program Schedule.
- Establishes, obtains approval for, and maintains the work breakdown structure (WBS).
- Supports quantitative risk assessments as required; adjusts schedules based on approved risk assessment recommendations.
- Regularly communicates schedule status at task, work plan, and program levels via customized reports.
- Provides technical expertise for schedule development and analysis, including assistance, support, and oversight of those performing scheduling functions to support the delivery of the program.
- Prepares or oversees the preparation of schedule forecasts and performance and resource analyses.
- Evaluates status and identifies issues on an as-needed basis, including time delays, design or construction changes against baselines, and Consultant and contractor schedule performance; revises and forecasts project schedules and presents recommendations and alternatives, if necessary.



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- Verifies that scheduling data is collected, analyzed, and maintained.
  - Develops policies and procedures to improve the adequacy and efficiency of the scheduling processes.
  - Trains PMT and related staff on scheduling concepts, procedures for schedule development, monitoring/control and reporting, and use of relevant software applications.
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**PMC Risk Management**

- Monitors the Risk Register to ensure the quality and consistency of updates.
  - Verifies that all risk registers (including Consultant/contractor/third-party developed) are in conformance with the processes laid out in the *Risk Management Plan*.
  - Finalizes the Risk Register and updates the Risk Dashboard.
  - Reviews program risks and works with PMT delivery managers to obtain additional information as needed
  - Obtains as needed updates to program risks from PMT delivery managers.
  - Provides as-needed support to PMT delivery managers.
  - Coordinates and performs evaluations (qualitative and/or quantitative) of risk exposure to Link21 to support decision-making at stage gate milestones.
  - Facilitates risk review sessions with the Program Risk Review Team.
  - Provides guidance to Consultants, contractors, and third parties to enable consistency in risk management, reporting, and monitoring.
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**PMC Cost Management Lead**

- Verifies that budgets (authorizations and expenses) are tracked and monitored.
  - Prepares and distributes summaries, detail reports, progress, and variances to the PMT on a monthly basis as well as ad hoc reporting requests or inceptions to date as needed.
  - Develops budgets and cash flow projections for the program/project portfolio.
  - Provides support to the Cost Estimating and Schedule Management Team for bid analyses and evaluation, as required.
  - Analyzes and manages scope, schedule, and budget change order requests.
  - Provides processes and protocols to effectively manage the change process.
  - Conducts impact analyses, assesses change readiness, and identifies key stakeholders.
  - Evaluates and verifies user readiness on change automation.
  - Identifies, analyzes, and prepares risk mitigation tactics with the Risk Management Team.
  - Tracks and reports issues that may result in change or that are created by program change.
  - Defines, tracks, and monitors change metrics.
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**PMC Program Support Services Manager**

- Oversees the delivery and the coordination of the SPP.
- Provides leadership and best practices to help guide the Program Controls Team.
- Supports process development and improvement to the Link21 Team.
- Supports functional group leads in the preparation and updating of program management plans.
- Develops, coordinates, and maintains onboarding materials.
- Coordinates the development and availability of forms and templates to facilitate consistency across Link21.
- Provides support for program-level communication and presentations to a wide variety of different audiences.
- Provides 508 compliance support.

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**PMC Information System Management Lead**

- Works with key stakeholders to design, develop, deliver, and support the technology resources used for the collaboration, development, review, and delivery of Link21.
  - Oversees document control and records management, collaboration systems, and electronic document systems (EDS), such as geographic information system (GIS) and Building Information Modeling (BIM).
  - Establishes a technology roadmap and architecture, and oversees efforts to design, develop, test, train, and support technology tools within that architecture, including SharePoint Online, Nintex, ArcGIS Online, BIM 360, and future tools (as needed).
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**PMC Document Control and Records/PMIS Management Lead**

- Executes policies and protocols for document management, including auditing and reporting functions and organizational process assets (templates) for incoming and outgoing documentation.
- Performs audits of the system to monitor users' adherence to procedures and conventions.
- Provides maintenance of program record documents so they are readily available for and easily retrievable by persons with access approval.
- Supports Link21 and its management processes as they pertain to document control and management.
- Provides leadership and expertise in implementing standardized document control processes and best practices.
- Enables efficient, auditable, and trackable processing of documentation for review and comment.
- Uses effective training to communicate document control processes and the responsibilities associated with the protection of records.

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**PMC Consultant Management Lead**

- Point of contact between the Consultants and the Program Controls Team that facilitates the execution of processes and work plan compliance.
  - Provides oversight of Consultant performance and compliance with work plans, providing support and guidance to the project controls analysts on each team.
  - Coordinates the Consultant work plan change process.
  - Develops appropriate processes and standards around Consultant work and interfaces with PMT members in conjunction with the delivery managers, project control analysts, and other managers/task leads.
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## 6.3. Implementation

### 6.3.1. Phase 0

During Phase 0, Program Controls established its organization and developed its program management plans, which are an extension of the SPP and that further define roles and responsibilities, standards, policies, procedures, and processes. Also, Program Controls supported and managed the selection and procurement of the four Consultant teams. In addition, they established the systems and tools to effectively manage its functional areas and to support program delivery (SharePoint Online, Nintex, ArcGIS, BIM, cost management, P6 scheduling, risk, and quality). Phase 0 also established the consultant management framework and the formal onboarding and offboarding processes, which are managed and administered by the Program Controls Team.

#### PROGRAM MANAGEMENT PLANS

Accompanying the SPP are program management plans that provide extensive detail and guidance for specific program procedures and operating guidelines. They are introduced in onboarding, and training is provided for certain aspects, such as completing a WPM form. The program management plans listed cover each of the core functions of program controls:

- *Cost Estimating and Schedule Management Plan* provides guidance on how to develop, manage, and control cost estimates and schedules throughout the program's life cycle.
- *Risk Management Plan* establishes processes and identifies responsibilities for risk management to support Link21's key strategies, policies, and protocols.
- *Cost Management Plan* outlines the processes and activities used to develop, implement, and maintain the program budget and to track and report on actual costs.
- *Information System Management Plan* provides a high-level overview of the information system used for the efficient and timely execution of Link21 activities and processes. It describes the application architectures, components, and implementation designed to manage Link21 from start to finish.
- *Document Control and Records Management Plan* identifies the document control processes and portrays the document control life cycle for Link21 documents and correspondence, from creation through close-out or receipt to disposal. It provides an overview of the protection, control, and accessibility of documents and records to support the efficiency and accuracy of Link21 operations.



### 6.3.2. Phase 1 and Future Phases

Phase 1 and future phases will see an integrated schedule environment, which includes the PMC, Consultant, and Master Program schedules that will be effectively managed and controlled in a collaborative structure. The Program Controls Team will also be enhancing its systems and tools to efficiently manage the growing Link21 Program and to more effectively report and forecast scope, cost, schedule, and risk to improve program and project delivery. Throughout Phase 1 and beyond, the Program Controls Team will be assessing lessons learned and best practices to ensure continuous improvement that is in sync with the overall program. The following are some of the key implementations for Program Controls:

#### INTEGRATED SCHEDULE

A program as complex as Link21 requires a cohesive integrated schedule that systematically links individual project scope elements and schedule-related activities together in a single Primavera P6 Shared Environment. This implementation approach significantly improves the ability to identify schedule opportunities and challenges. It enables a more informed dialogue around schedule interactions between the PMC and the Consultants, improving program and project schedule functionality and management.

#### REPORTING

Reporting is a critical component for the success of Link21. It provides the Link21 Team with timely and accurate information to meet Link21's goals and objectives and to inform the PMT with trends, forecasting, and other information that helps enable proactive management and successful delivery. The team primarily uses Power BI as its reporting platform, which empowers the Link21 Team to make accurate, data-driven decisions in an easy-to-use interactive interface.

The SharePoint site provides the Link21 Team with a centralized area to access reports. It provides regularly updated reports to provide transparency of and accountability for program performance.

The following reports are produced on a regular cadence:

- PMC and Consultant Cost Reports (Power BI)
- Link21 Risk Dashboard (Power BI)
- PMC and Consultant Work Plan Modification Reports (Power BI)
- Consultant Submittal Report (Power BI)
- Schedule Reports (PDF)



## TRAINING

The Program Controls Team operates with the understanding that by training team members from the start and by keeping them informed as the program evolves, it will help the program run more efficiently as a whole.

Training begins in the onboarding process. This allows the Program Controls Team to acclimate new team members to the Link21 SharePoint site and to the administrative and operational consistencies that have been implemented on the program. Onboarding is enhanced through feedback provided in the onboarding survey that is filled out upon completion.

To reinforce training beyond the onboarding process, the Program Controls Team conducts weekly SharePoint training sessions that are open to all Link21 Team members. These sessions have pointed topics to enhance a team member's knowledge of the system with time set aside for specific questions from attendees.

As the program evolves, new tools are developed to meet the needs of the team and to streamline work processes. The last step of implementing any new tool is a focused training session with the team members who will be using the new system feature.

Training sessions can also be requested by emailing [link21dc@link21program.org](mailto:link21dc@link21program.org).