STRATEGIC PROGRAM PLAN

CHAPTER 4: STAGE GATE PROCESS

April 2022

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Prepared By:
Link21 Program Management Consultants (PMC)
## ISSUE AND REVISION RECORD

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TABLE OF CONTENTS

4. Stage Gate Process ........................................................................................................ 4-1
   4.1. Purpose .............................................................................................................. 4-1
       4.1.1. What are Stage Gates? ............................................................................. 4-1
       4.1.2. Benefits of Stage Gates ......................................................................... 4-1
   4.2. Strategy .............................................................................................................. 4-2
       4.2.1. Stage Gate Timeline ................................................................................. 4-2
       4.2.2. Stage Gate Review Ladder ...................................................................... 4-2
       4.2.3. Stage Gate 1 Review ............................................................................... 4-3

FIGURES

Figure 4-1. Stage Gate Timeline .................................................................................. 4-2
Figure 4-2. Review and Approval Ladder ..................................................................... 4-3

APPENDICES

Appendix A. UK Experience with the Stage Gate Process ............................................ A-1
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# ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>ACRONYM/ABBREVIATION</th>
<th>DEFINITION</th>
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<tr>
<td>BART</td>
<td>San Francisco Bay Area Rapid Transit</td>
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<td>CCJPA</td>
<td>Capitol Corridor Joint Powers Authority</td>
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# LINK21 PROGRAM TEAM NAMES

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4. STAGE GATE PROCESS

4.1. Purpose

4.1.1. What are Stage Gates?

Stage Gates are key points in the development and delivery of the Link21 Program (Link21) that provide fundamental strategic definition to Link21’s progress.¹ They memorialize the actions made at the appropriate board and executive levels of authority based upon staff recommendations. Among the many actions that must be made over Link21’s life cycle, stage gates capture the foundational guidance that determine Link21’s direction, effectively closing one part of the life cycle and opening the next.

4.1.2. Benefits of Stage Gates

An effective Stage Gate Process identifies the key personnel and actions that need to be taken at important milestones, and the information that is needed to support those actions. The process is designed to minimize and mitigate risks associated with the delivery of capital projects and enable appropriate governance and control of projects as they progress through development and onto delivery and completion. On large, complex programs, the lack of a clearly defined planning process can lead to significant and costly delays, work revisions, and other inefficiencies. Numerous megaprojects in the U.S. and internationally have implemented versions of the Stage Gate Process because it represents a best practice. The Stage Gate Process provides the following benefits for Link21:

- Provides a planning structure that focuses the Program Management Team (PMT)² on the strategic deliverables that progressively define Link21, which are clearly defined as go/no-go validation points to avoid unnecessary expenditures on rejected alternatives and delay to project development.
- Memorializes planning actions taken at key points in Link21’s life cycle prior to advancing the program to the next level of investment towards completion.
- Establishes a future oversight process for managing the program. It also provides the opportunity for wider involvement of BART/CCJPA staff as part of the review process.

¹ As described in Appendix A, a staged approach to project development and implementation has been utilized by the United Kingdom (UK) transportation industry over the past 20 years.
² San Francisco Bay Area Rapid Transit (BART)/Capitol Corridor Joint Powers Authority (CCJPA) and Program Management Consultants (PMC)
Drives all program activities towards common milestones and allows tracking of Link21’s progress across key elements and against cost, scope, and time parameters.

Confirms Link21 continues to meet the goals and objectives and meets the operational and service requirements of the business taking on the final responsibility for managing the assets and program outputs.

4.2. Strategy

4.2.1. Stage Gate Timeline

As part of the Master Timeline development, three Stage Gate milestones are currently planned for Link21, as illustrated in Figure 4-1.

Figure 4-1. Stage Gate Timeline

4.2.2. Stage Gate Review Ladder

Stage Gate requires a hierarchal review and assessment of Link21’s key aspects, potential challenges, and risks prior to a planning action that is presented to the relevant executives and boards for formal approval and memorialization.

These actions are made and confirmed at a sufficiently senior level to provide the surety that Link21 can progress without the risk of revisiting and re-evaluating planning work that is already completed. The relevant panel must have authority to bind the agencies to a planning direction.
BART/CCJPA is responsible for overseeing the development of Link21 and their boards are the appropriate bodies to ultimately direct Link21.

The Strategic Program Plan (SPP) assumes that the Stage Gate actions are of sufficient importance and consequence that they require board approval.

Future management and responsibilities for Link21 may change over time to some extent, depending on the timescales and direction of the Link21 options being chosen and the future funding, contractual, and operational responsibilities. If changes occur, the responsibilities will be evaluated and updated as required.

The Stage Gate review and approval process is set out in Figure 4-2.

**Figure 4-2. Review and Approval Ladder**

The Stage Gate process involves key stakeholder and general public outreach, two review workshops, an executive review, and a board recommendation.

**4.2.3. Stage Gate 1 Review**

Stage Gate 1 included three formal review meetings prior to consideration by the BART/CCJPA boards. Each review increased with authority, as shown in Figure 4-2, with the aim to progressively build confidence in Link21’s Stage Gate 1 recommendations to the boards. The *Stage Gate 1 Report* summarizes the Stage Gate Process and the evidence to support action by the BART/CCJPA boards to advance from Phase 0 to Phase 1.
REVIEW OBJECTIVE

The Stage Gate 1 review’s prime objectives were to confirm Link21 was ready to advance from Phase 0 (Program Definition) to Phase 1 (Program Identification) based on sufficient documentation, review, and evidence that:

- Link21’s vision, goals, and objectives are appropriate, clear, and measurable, and they provide a foundation for the Business Case.
- Stakeholder and public engagement, with a focus on equity advancement, has informed the process and supports advancement into Phase 1.
- A foundation of analytic work has been completed to develop and evaluate concepts in Phase 1.
- The program has the people, processes, funding, and tools to support progress through Phase 1.

These four key statements framed each stage of review, providing a clear line of sight from the initial Stage Gate reviews through to the board presentation and recommendation to proceed. This provided a progressive level of confidence in Link21’s readiness to move into Phase 1.

REVIEW TIMESCALES

An interim review was held in August 2021 with the Peer Industry Experts to assess Link21’s preparedness for the formal Stage Gate reviews. The interim review helped focus the key areas that were assessed during those reviews and the key challenges to progressing Link21 into the next phase.

The formal Stage Gate reviews took place upon completion of Phase 0 (Program Definition) and the subsequent key stakeholder and public outreach (October–December 2021).

The formal reviews started in mid-December 2021 and concluded with a presentation to the BART/CCJPA boards in February/March 2022 to confirm Link21’s readiness to advance from Phase 0 (Program Definition) to Phase 1 (Program Identification). Approval from the BART/CCJPA boards is anticipated in April 2022.

STAKEHOLDER AND GENERAL PUBLIC INPUT

Key stakeholders were consulted and informed throughout the Stage Gate 1 process. The main forums for this consultation were the Program Development Team (PDT) meetings (staff and executive), Jurisdictional Working Group (JWG) meetings, and new Equity Advisory Council (EAC).

Specific briefings took place before the formal Stage Gate 1 reviews commenced, and they focused on the methodology for evaluation during Phase 1 project definition. The briefings occurred during October and November 2021 once Link21 concepts were identified.
Outreach to and feedback from the general public through grassroots outreach events, webinars, and live Q&A sessions as well as co-creation and public workshops formed a key part of the Link21 outreach strategy. In addition, there will continue to be meetings with partner agencies and advocacy groups, and feedback from this outreach will be fed into the formal review process.

FORMAL REVIEW PROCESS

The Stage Gate reviews, as shown in Figure 4-2, consisted of a series of presentations on Link21’s key aspects by PMT discipline teams to a review panel.

The presentations covered the work that was undertaken during Phase 0 and the work planned to take place during Phase 1. This included a review of the key challenges and potential risks to Link21’s progression and the future activities, resources, and timescale for Phase 1. The presentations were supported, as needed, by more detailed evidence (deliverables) of the work undertaken during the development phase.

Once the detailed reviews concluded, a key issue review was held at the BART and CCJPA executive level. This was a shorter, more focused review of Link21’s key elements to determine the program’s readiness to progress to the next phase, which was put forward to the BART/CCJPA boards for affirmation.

PRESENTATION TEAMS AND REVIEW PANELS

Presentations at the detailed reviews were made by the task teams that included PMC and BART/CCJPA team members. The Peer Industry Experts review panel included five industry subject matter experts who were familiar with, but not actively involved in, Link21 who could challenge constructively, add value, and have knowledge of the issues faced during the development phase of similar programs. Considering the Peer Industry Expert panel’s feedback, the PMC program manager was ultimately responsible for determining if Link21 was ready to advance to the next review stage.

The BART/CCJPA staff review panel consisted of senior members of BART/CCJPA Link21 staff and key staff from relevant functional areas. Their purpose was to support the review chair (BART program director) in the review. Considering the BART/CCJPA staff panel’s feedback, the BART program director was ultimately responsible for determining if Link21 was ready to advance to the next review stage.

The BART/CCJPA staff review was followed by an executive review by BART and CCJPA executive staff prior to a proposed staff recommendation that went to the BART/CCJPA boards.

Timescales for undertaking the reviews were set out in the P6 schedule.
BART/CCJPA BOARDS’ ROLE

The BART/CCJPA boards affirm the recommendation for Link21 to move into the next phase (Phase 1) and the adoption of the Link21 vision, goals, and objectives. This planning action is expected to be presented to the BART/CCJPA boards in April 2022.

Reports were made to the boards to give them visibility into Link21’s progress, including public, equity, and stakeholder outreach. A specific briefing was made to the BART Board on September 9, 2021, explaining the Stage Gate Process and the Board’s role within that process.

STAGE GATE DOCUMENTATION

The Stage Gate reviews and BART/CCJPA boards affirmation are supported by three key elements of documentation.

Stage Gate Report

A report capturing the closeout of the current phase that summarizes the presentations made at the Stage Gate review, and that references the evidence/deliverables that underpin the planning process, including individual task teams’ reports, a record of the endorsements made at the reviews, and any subsequent planning actions and recommendations.

BART/CCJPA Boards Presentation and Associated Memo

A presentation and memo that captures the action taken by the board(s) and the previous Stage Gate reviews to inform the boards’ action. The supporting memo will outline the recommendation(s) made to the boards by BART/CCJPA staff and the planning action to be taken.

Public Progress Report

A public-facing report that informs the public of Link21’s progression to the next phase. For Stage Gate 1, it summarizes the recommended strategic definition of Link21 as a rail transit program with a new transbay passenger rail crossing, the work undertaken on the program in Phase 0, its goals for Phase 1, and how stakeholders and the general public will continue to be engaged.
APPENDIX A. UK EXPERIENCE WITH THE STAGE GATE PROCESS

Background

The Stage Gate approach was adopted in the UK to minimize and mitigate the risks associated with delivering capital projects, and to enable appropriate governance and control of projects as they progress through development and onto delivery and completion. One of the key reasons and benefit of its adoption is the measured and formalized progression of a project, and the avoidance of revising work which has been completed and changing decisions that have been made.

Experience on UK rail transit projects has shown that without this formal progression there is significant risk of increased costs, extension of timescales, and uncertainty of scope. One of the key reasons this was introduced as a mandated governance requirement for all capital projects in Network Rail was to avoid the significant cost overruns and increases in scope being experienced on projects.

The Stage Gate Process segments a project into easily understandable stages and proscribes supporting information (deliverables) that should be produced at each stage of a program’s development to help answer key strategic questions to determine if the program is ready for a decision to move onto the next stage. These questions and deliverables should be tailored to support the decision and can include reviews of cost estimates, risk assessments, stakeholder management plans, funding requirements, etc.

The Stage Gate Process was developed by Network Rail to enhance project delivery. It is designed to make sure the constituent elements of a project progress in a coordinated fashion, and that project commitment and funding does not progress to future stages without a good understanding of its current status and its risks. It forms an integral element of the governance process within Network Rail for financial and contractual authorization of projects.

To achieve this, formal Stage Gate Reviews are held at appropriate milestones of a program/project’s development. These reviews are an integral part of the process and serve as key governance checkpoints. They enable the client/sponsor to verify the project is meeting its objectives and progressing sufficiently, and to confirm that cost, risk, and time parameters are in line with expectations before progressing to the next stage.

The Stage Gate process in the UK is split into eight discrete stages that cover a program’s progress from inception to closeout, shown in Figure 1. The Link21 Stage Gate decision points are shown below the UK Stage Gates to demonstrate their alignment with the UK Stage Gate Process. These decision points will occur at the end of each equivalent UK stage gate except for Stage Gate 2, which will occur halfway through UK Stage Gate 2 because of Link21’s size and complexity. Link21’s Stage Gate 2 is proposed to determine the program alternatives that will move forward to the Preliminary Business Case and Conceptual Engineering.
Figure 1. UK Stage Gates³

³ Uses Network Rail’s terminology for the Stage Gate process.
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IMPORTANCE OF OUTPUT DEFINITION AND OPTION SELECTION

Stages 1-3 of the UK Stage Gate Process — output definition, feasibility, and option selection — serve as the foundation for a project. Correctly assessing and identifying a project’s objectives and the outputs needed to achieve those objectives is a key element of any project, but it is critical on megaprojects because they typically have numerous outputs, requirements, risks, stakeholders, and funders.

Figure 2 demonstrates that clearly defining the output of a project in the beginning and selecting the right option to achieve that output is key to achieving the Business Case’s benefits. Line “B” shows that with a strong definition at the start and by selecting the right option, value can be realized even if the design and construction is poorly executed. On the other hand, line “C” shows that if there is poor definition at the start, it is likely the program/project will not achieve the full Business Case’s benefits even if the design and construction is well executed.

Figure 2. Relationship Between Objective/Goal Development and Execution

![Diagram showing the relationship between objective/goal development and execution.](image)

The value gained from spending the time to define the goals, objectives, and outputs required cannot be understated. The greatest opportunity to influence a project’s value is in the development phases, it is the period in the project life cycle where the least money is spent but the greatest savings are achieved. This makes the robust assessment in UK Stage Gates 1-3 critical to the successful realization of a project’s objectives and benefits.