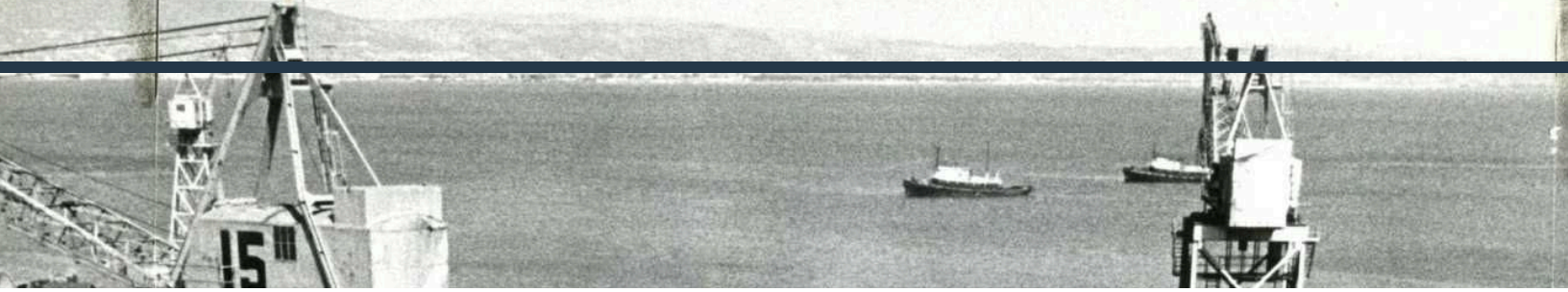
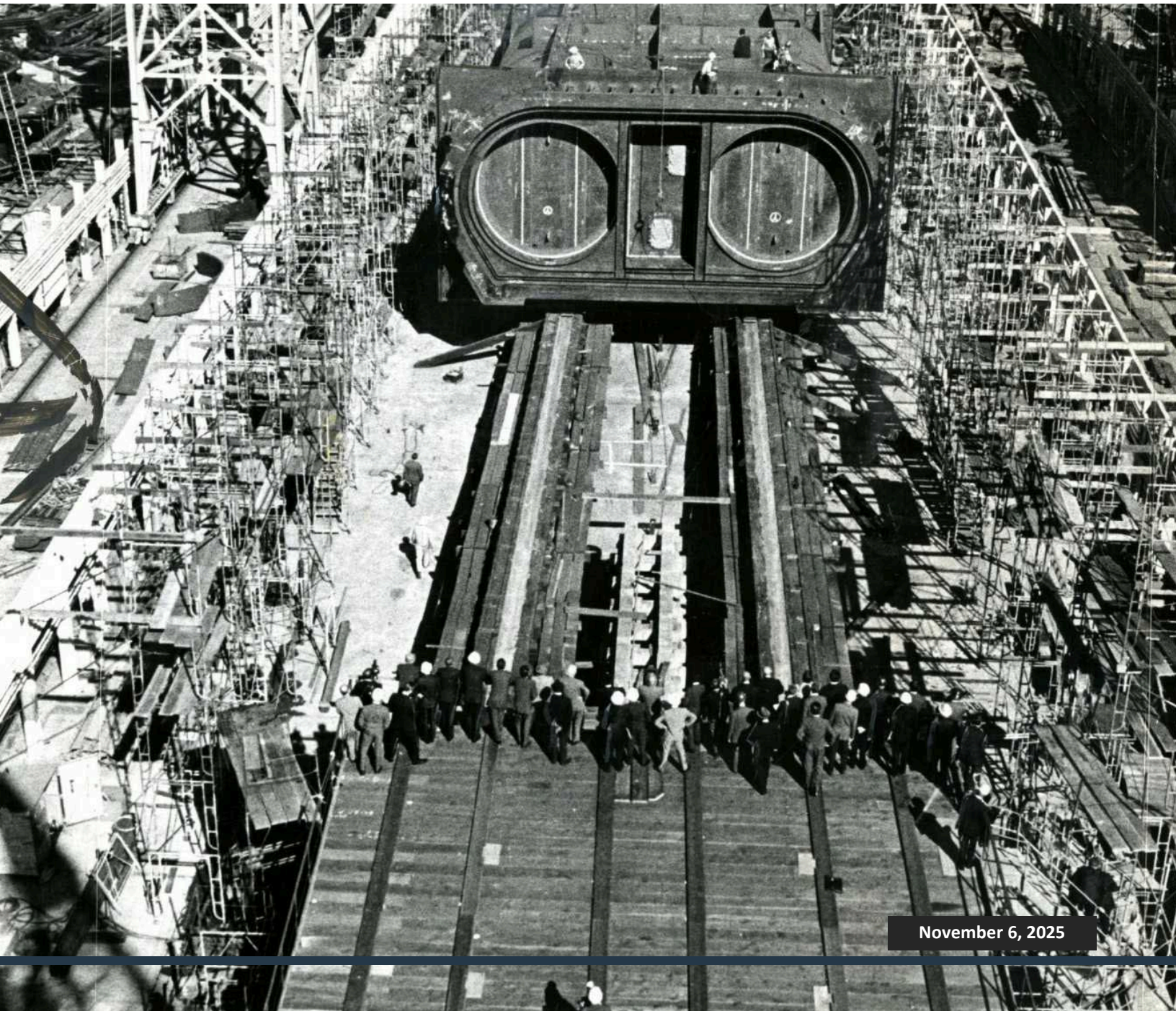


San Francisco Bay Area Rapid Transit

Office of the Inspector General

Highlights: Audit of Construction Contract Change Orders

Companion Report to Full Audit



November 6, 2025

Audit Highlights

The BART independent Office of the Inspector General (OIG) is pleased to present its report, *Audit of BART's Construction Contract Change Orders*. This audit is part of the OIG's Fiscal Year 2024–2026 Audit Plan, which focuses on large-scale reviews of areas posing the greatest risk to BART. Change orders are a routine and expected part of a large construction program but can create serious risk exposure. Given that BART's capital construction program delivers billions of dollars in infrastructure improvements, the program represents a high-risk, high-impact area warranting oversight.

Overall, BART's change order practices generally comply with established policies and reflect an active commitment to continuous improvement. Notable steps to strengthen processes include a 2023 Rapid Improvement Event aimed at streamlining procedures and clarifying BART's internal roles.

However, our analysis also identified systemic and structural limitations that reduce BART's ability to fully leverage data for risk management and oversight. These weaknesses do not indicate misconduct, but rather point to opportunities to modernize systems, clarify responsibilities, and strengthen documentation practices. Specifically, we found that:

- Overlapping project and oversight roles limit independent monitoring and trend analysis.
- Outdated systems and inconsistent data make it difficult to reconcile project costs, analyze change order patterns, or identify recurring issues across projects.
- Fragmented documentation and decentralized storage hinder BART's ability to track Disadvantaged Business Enterprise (DBE) and small business participation.
- Planning and design gaps occasionally lead to avoidable change orders and cost increases.

Addressing those gaps in procedures will help BART keep its governance framework in pace with its investments in capital projects and culture of continuous improvement.

Why This Audit Matters

Change orders are inevitable, and they represent a key window into project performance, cost control, and potential risk. Our audit helps BART ensure that its portfolio of complex projects is supported by independent oversight, transparent data, and sound internal controls. Strengthening how change orders are tracked, reviewed, and reported will help BART safeguard public funds, maintain compliance with federal and state requirements, and make better use of lessons learned to improve future project planning and design.

In short, this work helps BART turn good project management into great governance, building public trust through accountability, accuracy, and continuous improvement.

Recommendations in Brief

To strengthen change order management, BART should:

- Expand Independent Oversight
- Strengthen Systems and Data Governance
- Improve Compliance Oversight
- Enhance Planning and Design

Users of this highlight report should refer to the accompanying report for full details on our findings, conclusion, and recommendations, as well as BART's responses to those recommendations.

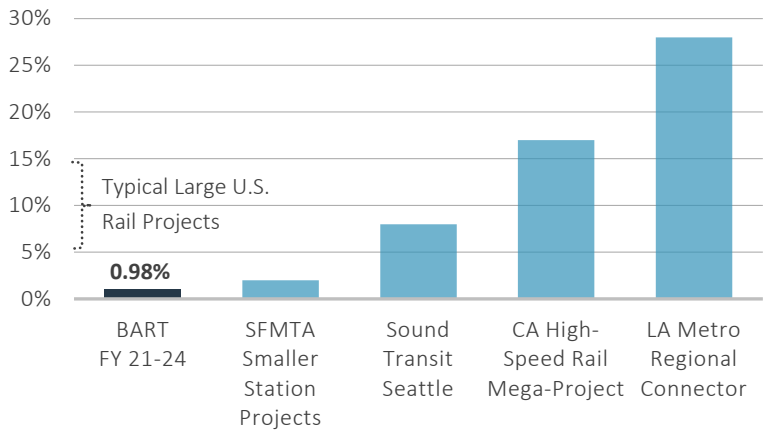
Why Change Orders Happen	Why They're Not Always Bad
Design Refinements	Improve Safety
Owner Requests	Enhance Functionality
Regulatory Changes	Ensure Compliance
Unforeseen Conditions	Reflect Site Conditions

Change Orders Are Normal

Change orders occur when the scope, schedule, or cost of a project needs to be modified, often for legitimate and unavoidable reasons. Common drivers include unforeseen site conditions, like discovering utilities or soil conditions that differ from design assumptions; design refinements as the project evolves from concept to construction; regulatory or safety requirements that change mid-project; and owner-initiated adjustments to improve functionality, durability, or aesthetics.

How BART Compares

From Fiscal Year 2021-2024, BART's net change orders averaged 0.98%, well below the 5-15% typical for similar U.S. rail projects. However, these figures can vary widely depending on project scope, complexity, and descopes. Because descopes recorded as credits can mask large additions, BART's low overall rate may not tell the full story. Accurate reporting and data reconciliation are essential to determine whether BART truly outperforms its peers or if net credits are offsetting significant increases elsewhere.



Note: Accurate reporting and data reconciliation are essential to confirm whether BART truly trends below peers, or if net credits mask sizable additions elsewhere.

Fraud and Cost Overrun Risks

While normal, change orders also present some of the highest risk areas for fraud, waste, and cost escalation in public construction. Because they adjust contract scope, price, or time after competitive bidding has ended, they inherently reduce the protections that open competition provides. When internal controls or data visibility are insufficient, change orders can be used, intentionally or inadvertently, to inflate costs, disguise poor planning, or favor certain contractors.

From a financial management perspective, repeated change orders also pose a risk of cost overruns and budget volatility. Change order activity not analyzed across the portfolio risks underestimating project contingencies or not identifying recurring causes, such as design omissions or site conditions that could have been anticipated.

Why Auditors Worry About Change Orders

Scope Creep or Bid Manipulation

Low Bids, High Costs Later

Contractors might submit low bids to win a contract, expecting to recover profits later through a series of change orders.

Data Gaps and System Silos

Can't See the Full Picture

When change orders are tracked in multiple systems that do not reconcile, staff cannot see patterns of excessive costs or repeated vendor behavior.

Inadequate Documentation

Paper Trail Vanishes

Missing cost justifications or unclear approvals can make it impossible to determine whether additional payments were reasonable.

Limited Independent Review

No Separation of Duties

If the same team responsible for managing contractors also approves contract changes, it can create a perceived or actual conflict of interest.

Insufficent Analysis

Cost Overruns & Budget Volatility

If change-order activity is not analyzed across the portfolio, staff may underestimate contingencies or not identify recurring causes for changes.

Recommendations

100%
Agreement with Recommendations

BART management agreed to strengthen oversight and accountability in response to our recommendations by expanding Internal Audit's independent review role; enhancing controls and visibility across departments; improving data access and governance through integrated systems; and implementing stronger design and planning practices under the new Design Quality Management Plan. Together, these actions aim to prevent fraud, improve transparency, and reduce change orders through better coordination, documentation, and quality control.

Special Thanks

The OIG thanks GPP Analytics (GPP) for their excellent work in completing this audit. We contracted with GPP to conduct the audit on our behalf as part of our FY 24-26 Audit Plan. Their attention to detail and expertise is evident in their work.

We also thank BART officials for their cooperation and assistance during this audit. Their valuable input helped complete a fair and balanced audit.

Full Audit Report

Users of this summary report should refer to the accompanying audit report for full details on the audit findings, conclusion, and recommendations, as well as BART's responses to those recommendations.

Providing Independent Oversight of the District's Use of Revenue

Stop Fraud, Waste, & Abuse

Report What You See to the OIG

24/7 Fraud, Waste, & Abuse Whistleblower Hotline

www.bart.gov/oighotline

510-464-6100

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Reports

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GPP Analytics
Government Performance & Policy

Audit of Construction Contract Change Orders

for the San Francisco Bay Area Rapid Transit's Office of the Inspector General

October 28, 2025

GPP Analytics Inc.
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Table of Contents

Transmittal Letter

Claudette Biemeret, Inspector General
Office of the Inspector General
San Francisco Bay Area Rapid Transit
2150 Webster Street, 4th Floor
Oakland, CA 94612

Dear Inspector General Biemeret,

We are pleased to present the audit report for the "Audit of Construction Contract Change Orders" conducted by GPP Analytics Inc. for the San Francisco Bay Area Rapid Transit (BART) independent Office of the Inspector General.

Our audit was conducted in compliance with the Generally Accepted Government Auditing Standards (GAGAS) of the U.S. Government Accountability Office.

The primary objective of our audit was to evaluate BART's construction contract change order practices, ensuring compliance with laws and regulations, and identifying opportunities to improve controls related to risks of fraud, waste, and abuse.

The following is a summary of the audit findings in the report:

Finding 1: Change Orders Need Monitoring for the Risk of Fraud, Waste, and Abuse. BART's Office of Infrastructure Delivery (OID) simultaneously enforces contract terms and maintains project progress, creating an inherent conflict of interest that increases the likelihood of fraud, waste, and abuse. Because no other group is explicitly tasked with spotting fraud red flags or monitoring change-order trends, OID effectively operates without a meaningful check on their decisions in these areas. This vulnerability is compounded by limited data analytics, minimal cross-department monitoring, and oversight gaps that could allow vendor misconduct. As recommended, strengthening independent oversight and data monitoring would help ensure transparency, protect public funds, and allow the Board of Directors to use its newly adopted suspension and debarment policy more effectively.

Finding 2: Outdated and Missing Information In Systems Hampers Change Order Oversight and Compliance. BART relies on PeopleSoft and WongCMS to manage contract and financial data, but inconsistent records, outdated information, and weak data-governance practices hamper effective change-order oversight. Multiple instances of missing or inaccurate entries, poor system functionality, and the lack of a formal reconciliation process make it difficult to calculate the full impact of change orders or detect patterns of inflated costs. These data integrity issues obscure true project costs and also pose a compliance risk for federal funding. Implementing dedicated data fields, improving records retention, and ensuring legacy information is migrated or preserved would greatly enhance transparency and control.

Finding 3: Inconsistent Records Weaken Oversight of Change Order's Federal Compliance. Because BART's Office of Civil Rights (OCR) does not always receive conformed (final/approved) change orders or have uniform access to relevant systems, they struggle to verify Disadvantaged Business Enterprise (DBE) and small business participation. This fragmented documentation and lack of standard operating procedures make it difficult for OCR to ensure compliance with

federal regulations under 49 CFR Part 26 and California Public Contract Code § 2002. Formalizing record-routing procedures, establishing a central repository for change orders, and granting OCR staff read-only system access would significantly improve oversight of DBE and small business obligations and reduce the risk of potential funding or compliance issues.

Finding 4: Opportunities to Improve Project Design and Planning to Avoid Some Change Orders. Differing site conditions are a common cause of change orders at BART. Research and best practices suggest that almost every dollar spent on subsurface investigation during planning and design saves four times as much in construction. There may be opportunities for the Office of Infrastructure Delivery to further consider its planning and design as it relates to the change orders we observed. In addition, a small portion of changes, an estimated 5.0%, appear to be caused by errors and omissions in the planning and design process. This means that between FY 2020-21 and FY 2023-24, errors added an estimated $2.7 million of costs to BART. Both circumstances present an opportunity to improve BART's planning and design processes.

We appreciate the cooperation and assistance provided by the staff of BART. Their support was instrumental in the successful completion of this audit.

Sincerely,

Julian Metcalf, CEO
GPP Analytics Inc.
(805) 242-2071
jmetcalf@gppanalytics.com

Introduction

This audit report presents the findings of the "Audit of Construction Contract Change Orders" conducted by GPP Analytics Inc. for the San Francisco Bay Area Rapid Transit (BART) independent Office of the Inspector General. The purpose of this audit was to evaluate BART's construction contract change order practices, ensuring compliance with laws and regulations, and identifying opportunities to improve controls related to risks of fraud, waste, and abuse.

Standards of Audit

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Audit Objective

The primary objective of our audit was to evaluate BART's construction contract change order practices, ensuring compliance with laws and regulations, and identifying opportunities to improve controls related to risks of fraud, waste, and abuse.

Audit Results

Using the methods discussed below, this audit identified four findings related to the controls BART uses to manage its construction change orders. Finding 1 discusses how the Office of Infrastructure Delivery is structured and the lack of dedicated monitoring for fraud, waste, and abuse. Finding 2 assesses BART's information systems and their impact on the ability to monitor change order activities for compliance and the risk of fraud, waste, and abuse. Finding 3 examines records management related to the Office of Civil Rights' role in the change order process and its impact on compliance with Federal requirements. Finding 4 identifies opportunities where BART may be able to improve project design and planning to prevent change orders.

Throughout the audit, we encountered challenges due to BART's fragmented records and information systems, as discussed in Finding 2. This limitation affected the audit's ability to comprehensively assess for fraud, waste, and abuse, report precise and comparable numbers across all BART projects, and provide full assurance of BART's change order processes. Additionally, this limitation impacts BART's ability to internally monitor these risks and accurately report change order activity to its Board of Directors and the public.

Audit Timeline and Methods

Phase I: The audit began with an entrance conference in June 2024. We reviewed various documents and conducted interviews across several functions to understand the change order process. The audit team reviewed logs, assessed documentation, performed case studies, and analyzed policies and procedures as documents became available throughout the subsequent months. The audit team toured several construction sites in September 2024 to refine our understanding and discuss risks related to the change order process. The initial phase ended with the completion of a risk assessment and planning memo.

Phase II: The audit team implemented a four-part testing plan. We cross-referenced BART's policies and control environment with applicable laws and industry practices from peer organizations to ensure alignment and identify any procedural gaps. We performed contract level testing to correlate high frequency/value change order processors with low bid submitters by reviewing original contracts and bid materials. We engaged in detailed testing of individual change orders to assess compliance with requirements and identify opportunities for improvement. Finally, we conducted detailed case study testing to assess the application of controls.

The testing phase used a series of random selections of change orders from BART's records in the audit period of FY 2020-21 to FY 2023-24. Samples were selected with a confidence level of 90% with a 10% margin of error and in some cases the Central Limit Theorem using a sample size of 30 for large populations. This random sampling was complemented by a selection of risk-based samples. Testing information was sourced from direct access to BART's information systems related to change orders, review of paper documents stored in binders, and receipt of documentation from various stakeholders at BART. In instances of non-digitized documentation, we collected and tabulated information from paper sources and compared with digital records. Using information collected across these media, we performed pattern analysis, detailed reviews of supporting information, and validation to verify the authenticity of reported data.

Phase III: On April 25, 2025, we provided the auditees with a confidential copy of the draft report, which they reviewed for factual accuracy and any inadvertent inclusion of confidential information. We received all additional information by July 24, 2025. On July 29, 2025, we issued a revised draft with a request for a written response to each of the report recommendations. We received the written responses from auditees on October 14, 2025. Their responses provided new information and, thus, identified a discrepancy in our understanding regarding Finding 3 of the report. We revised Finding 3 and finalized the report on October 28, 2025. All management responses are included as attachments to this report. The Final Report, which combines the Revised Draft and the auditee's written responses, was transmitted to the Office of the Inspector General.

What BART Does Well

Overall, our audit testing and observations showed BART's change order practices are compliance oriented. Thus, our audit findings are not focused on any significant failure to comply with existing BART policies. Instead, the findings are focused on opportunities to improve BART's policies and processes, such as assigned roles within BART, how information is stored and used, and how stakeholders in the process can be better positioned to meet BART's objectives and legal requirements.

Another positive observation we note is BART's work on continuous improvements related to change orders. In September 2023, BART's Performance & Innovation team convened a "Rapid Improvement Event", essentially a collaborative internal consulting engagement, with stakeholders to address various inefficiencies in the change-order process. The event produced several recommendations, some of which are reportedly pending implementation. Based on our audit testing, we believe there are some additional areas that could be improved further, but the work of those involved in the Rapid Improvement Event suggests a proactive culture of continuous improvement.

Change Order Background

What Are Change Orders?

A **change order** is a modification to an existing contract that alters the scope, cost, or timeline of a construction project. These modifications can be initiated by either the contractor or BART and are often necessary to address unforeseen conditions, design adjustments, or errors in the original specifications.

In addition to standard change orders, contracts may also include:

> **Allowances**: Pre-approved amounts set aside in the contract for anticipated but not fully defined costs at the time of bidding. Contractors may later request reimbursement for actual expenses incurred under these allowances, often requiring a change order to formally allocate the funds. While allowances help manage project contingencies, they also introduce risks such as cost overruns that appear within budget or underutilization if the allowance estimates are inaccurate.
>
> *Allowances represent a relatively small portion of spending compared to change orders.*
>
> **Options**: Contract provisions that grant BART the right, but not the obligation, to add work or extend contract terms at a predetermined price. When an option is exercised, a change order is typically issued to formalize the adjustment in scope and cost.
>
> *Contract options are used sporadically by BART.*
>
> **Descoped Items and Credits**: Some change orders reduce the total contract cost by removing work from the scope of a project. These credits are returned to BART but must be monitored to ensure they are applied correctly. Change order credits are discussed further in this background section.

Trends in Change Orders, Allowances, and Options Suggest Small But Variable Part of Overall Construction Spending

In the four-year period of our audit scope, BART report $53.9 million in net change orders. Change orders are a relatively small but highly variable portion of BART's total capital construction spending, fluctuating from 1.92% (FY 2021-22) to 0.46% (FY 2023-24). Allowances account for a minimal portion of construction spending, typically around 0.03% of total capital spending, allowances reflect small, pre-approved cost adjustments within contracts. Options are a similarly small portion of total spending at 0.08%.

See Figure I.1 on the following page for a full chart of BART's change order records.

Amount Is Reported As Net

The figures below represent net values, meaning they reflect the balance of additional project costs and credits for descoped (removed) work. In some years, the reported change order amounts appear lower because of large credits applied to vendors for removed scope items. For example, in the four-year period we assessed, there were 868 change orders, 128 of those were credits back to BART from the contractor totaling $45.7 million for the period. In addition, another 109 of them were no cost change orders, generally time extensions due to things like schedule conflicts and interference with operations. If we exclude all credited change orders and no cost change orders, there are 631 change orders that added to BART's costs. These 631 change orders alone total $99.6 million of added costs in the four-year period.

General Risks From Change Orders

The nature of change orders themselves exposes BART to risks of fraud, waste, and abuse by means of possible collusion, vendor fraud, poor planning and design, and negligence to name some key areas. Further, if a pattern of change orders exists, it could indicate vendors intentionally underbidding to win awarded contracts and later making up the difference with change orders. As discussed in Finding 2 of this audit report, BART has not configured its information systems to routinely monitor for trends and that could identify potential problems.

Credits Can Save BART Money But Still Pose Risk

Note that while credits back to BART can be a positive in that they save money for BART, they still pose a risk. For example, large credits may indicate that initial project scopes were overly ambitious or poorly defined, leading to frequent scope reductions after contracts were awarded. If credits are the result of poor initial project scoping and estimates, this could lead to inadequate competition if inaccurate scope descriptions deterred some potential bidders and could become part of a deliberate collusion scheme among vendors.

When credits occur too often it could suggest inefficiencies in project planning and procurement or problems aligning contractors' ability with the required work, potentially increasing administrative costs and delaying project completion. Finding 1 of this report discusses gaps in BART's monitoring of change order risks, which includes BART's limited capacity to independently assess credited money back to BART among other change orders.

BART's Data Is Limited and Could Misrepresent These Figures

While the figures discussed in this introduction section provide insight into change order activity, they are subject to significant limitations, as outlined in Finding 2. BART was unable to fully report and reconcile change order records between its construction management system and its financial system. This data inconsistency raises concerns about whether the full financial impact of change orders is accurately represented.

Potential issues include:

- Incomplete or misclassified change orders that were approved but not fully recorded in WongCMS (BART's construction document management system).
- Differences in reporting periods, meaning some change orders may not align with the fiscal year they were recorded in.
- No reconciliation between WongCMS and BART's financial system of record, PeopleSoft.
- PeopleSoft cannot effectively report on change orders.

Given these challenges, the actual financial impact of change orders may be understated or misstated.

Figure I.1 below, is subject to the limitations discussed on the prior page and in Finding 2. The figure provides an estimate of magnitude of construction spending for comparison purposes. This was necessary since BART's financial system could not report change orders in a comparable basis as discussed in Finding 2.

Figure I.1: Change Orders Reported By BART Represent Small Portion of Total Spending Overall

	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	TOTAL
Total Capital Construction Spending[1]	*$1,294,895,000.00*	*$1,398,501,000.00*	*$1,537,500,000.00*	*$1,290,448,000.00*	*$5,521,344,000.00*
Net Change Orders	**$ 9,378,843.27**	**$26,799,475.73**	**$11,859,389.69**	**$ 5,882,320.44**	**$53,920,029**
Net Change Orders % of Total Spending	**0.72%**	**1.92%**	**0.77%**	**0.46%**	**0.98%**
Cost Increase Change Orders Only	$44,101,621.08	$30,567,312.51	$16,610,160.21	$ 8,323,831.73	$99,602,925.53
Cost Increase Change Orders as a % of Total Spending	3.41%	2.19%	1.08%	0.65%	1.80%
Cost Decrease (Credit/Descoping) Change Orders Only	$(34,722,777.81)	$ (3,767,836.78)	$ (4,750,770.52)	$ (2,441,511.29)	$(45,682,896.40)
Cost Decrease (Credit/Descoping) Change Orders as a % of Total Spending	-2.68%	-0.27%	-0.31%	-0.19%	-0.83%

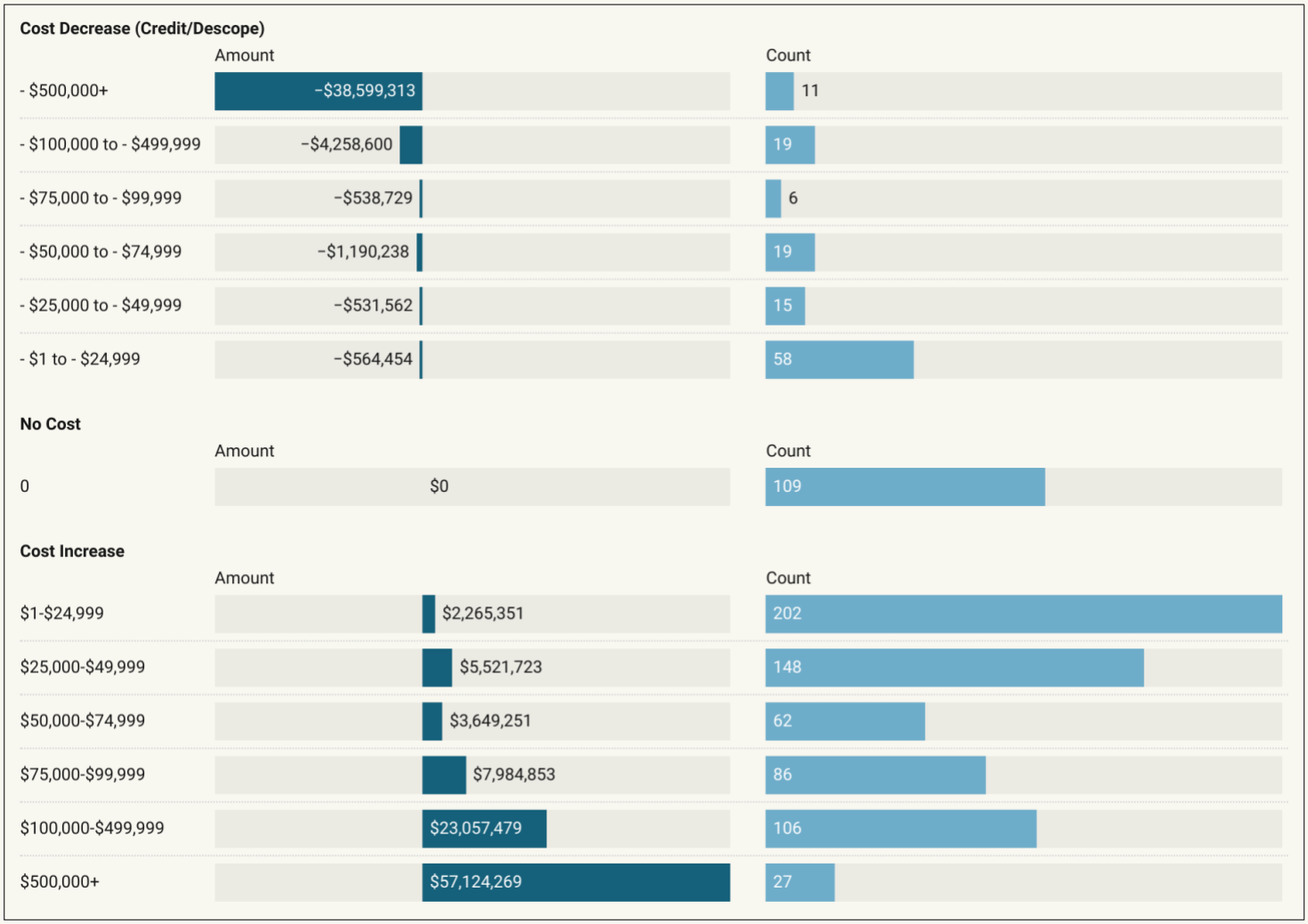
Source: Analysis of reported change order records

[1] We used the 'Additions to Capital Assets' figures from BART's financial statement notes under 'Construction in Progress,' 'Stations, Track, Structures, and Improvements,' 'Buildings,' 'System-wide Operation and Control,' 'Capitalized Construction and Start-up Costs, ' and 'Repairable Property Items' to estimate annual capital construction and maintenance costs. These categories were selected to capture approximate costs associated with ongoing and completed construction projects, infrastructure upgrades, and system-wide operations critical to capital improvements, while excluding expenditures unrelated to construction, such as revenue vehicle purchases.

BART's Change Orders Vary Widely – Some Are Very High Cost and Others Large-Sized Credits/Descoping

Change order amounts at BART can swing widely, often depending on project complexity, unforeseen conditions, and the presence of major descopes and credits. Figure I.2 below shows the distribution of the count of change orders by amount categories. In addition to change orders that add to BART's costs, there are numerous no-cost change orders, those only increasing time or changing contract terms, and numerous cost decreases or credits, often attributed to the reduction in scope of a project. Taken as whole, the total amount of change orders is skewed by a handful of large-sized cost increases and credits, which combine to make more moderate annual net totals described on the previous page. In particular, a $28.3 million credit from a single project heavily influenced these numbers and is discussed in detail on the following page.

Figure I.2: Change Orders Distributed Across Wide Range of Amounts Skew Net Total
FY 2020-21 to FY 2023-24

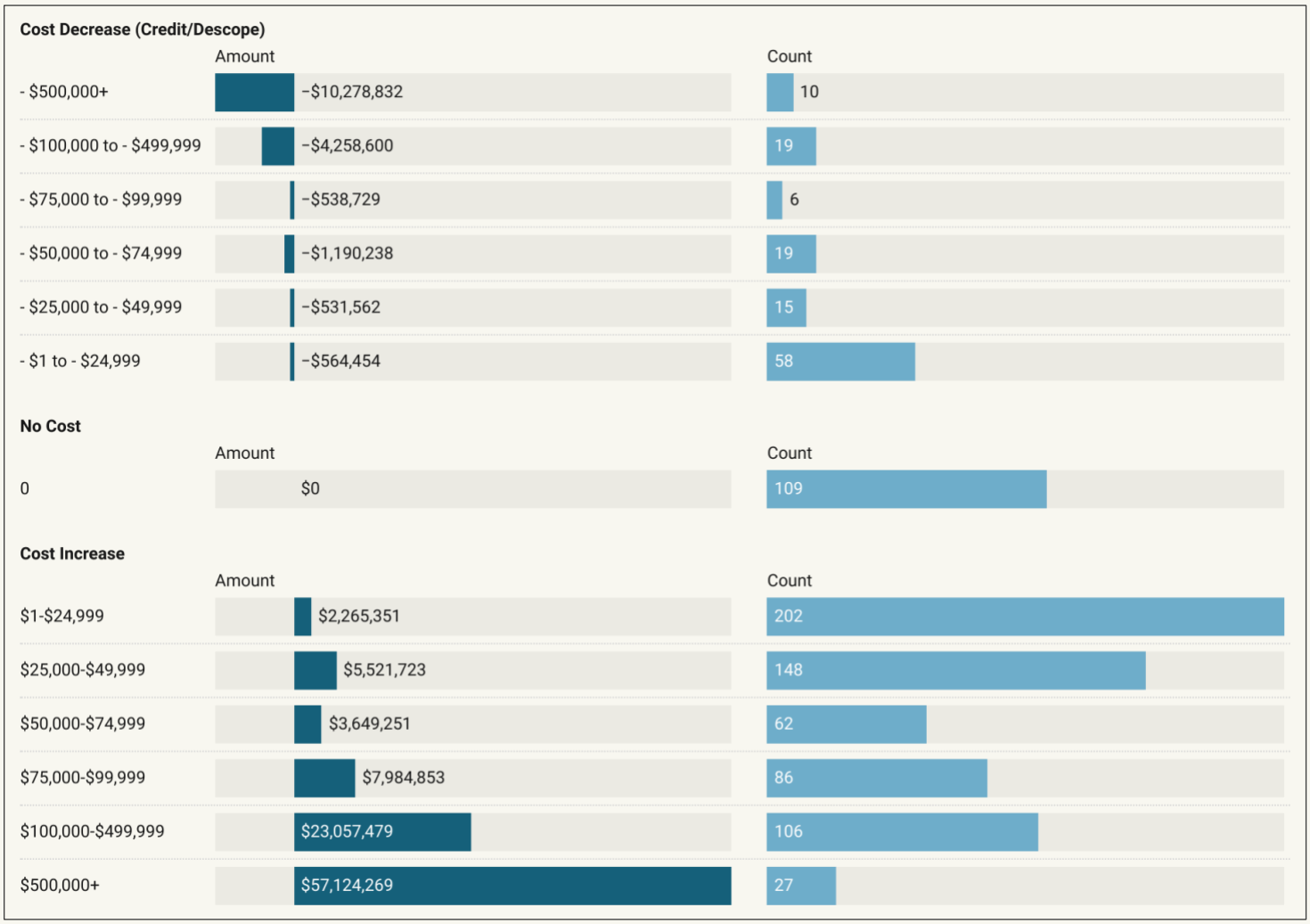


Source: Analysis of reported change order records

$28.3 Million Transbay Tube Credit Lowers Overall Change Order Results

Due to a request from BART, a sizable $28.3 million credit from the Transbay Tube Internal Retrofit project occurred in FY 2020-21 and significantly impacted the amounts presented in Figure I.2 on the previous page. This project, which is part of the Earthquake Safety Program, started before the audit period but concluded within it, meaning most of the change orders that increased costs happened prior, but the large credit at the later stage of work fell within the audit period. Without this credit, the total net change orders for the four-year audit period would have been 52.5% higher, at a net total of $82.3 million. Removing this credit would also increase change orders in the audit period to 1.5% of total capital construction spending. Figure I.3 below illustrates what the distribution of net change orders would have been without the $28.3 million credit.

Figure I.3: Net Total Change Orders Increases By Over 50% If Transbay Credit Is Excluded
FY 2020-21 to FY 2023-24
Excludes $28.3 million credit from the Transbay Tube Internal Retrofit in FY 2020-21



Source: Analysis of reported change order records

Five Project Examples Show Wide Range of Change Orders

Five examples of how change orders within BART vary from one another are shown below in Figure I.4. The **El Cerrito Del Norte Station Modernization** and the **Transbay Tube Internal Retrofit** show relatively high change order proportions, 49.6% and 29.4%, respectively, driven by extensive station upgrades and specialized seismic retrofit work. Meanwhile, simpler, or more contained efforts such as the **Hayward Maintenance Complex (Phase 2)** reflect minimal increases (1.4%), and in the case of the **Traction Power Substations Procurement**, a significant descoping returned a 31.0% credit to BART. Finally, small projects, such as the **Oakland Shops Vacuum System Replacement**, which is relatively small in scale and complexity compared with the other examples, shows how numerous small projects drive the overall low average of change orders when looking at BART as a whole.

Collectively, these projects help explain why BART's overall net change order amounts appear lower when aggregated: major descopes can offset substantial additions elsewhere, and large swings in individual projects often balance out to a more modest total percentage across BART's capital portfolio. As discussed in Finding 4, some of these large projects have opportunities to improve planning and design based on the high rate of change orders we observed.

Figure I.4: Proportion of Change Orders Vary Widely At BART Depending on Project, Circumstances, and Descoping

Project	Contract Awarded	Most Recent Conformed Change Order Occurred	Contract Amount (Includes all allowances allowed in contract and approved options)	Total Net Change Orders	Change Order Percent of Contract Amount
El Cerrito Del Norte Station Modernization Project	2017	2021	$32,535,000.00	$16,128,144.55	49.6%
Earthquake Safety Program Transbay Tube Internal Retrofit	2016	2024 *Closeout of project and other costs are still pending.*	$267,083,110.00	$78,468,593.39	29.4%
Hayward Maintenance Complex Phase 2 Civil Grading	2021	2024 *Closeout of project and other costs are still pending.*	$19,933,933.00	$281,705.89	1.4%
Oakland Shops Vacuum System Replacement	2020	2021	$639,300.00	$5,837.07	0.9%
Procurement for Traction Power Substations - Phase 1	2011	2023	$17,904,407.00	$(5,551,573.94) *Credit back to BART due to descoping of contract*	(31.0)%

Source: Analysis of reported change order records

We used case studies in this analysis due to the information limitations of BART's records as discussed in Finding 2 of this report. BART's current systems are unable to reliably report on accumulated change orders on a project-by-project basis. Instead, manual records are kept for each project, and while BART's construction management system (WongCMS) can report some total figures it does not track overall project spending or reconcile this against BART's financial system (PeopleSoft).

Other Transit Agencies Report Variable Amounts of Change Orders

BART's overall net change order amounts for the past four years appear relatively low, averaging around 0.98%, when compared to U.S. transit agencies delivering similarly scaled rail projects, which often fall in the 5–15% (or higher) range. See Figure I.5 below for peer comparisons. However, as shown in BART's individual project examples, change order percentages can fluctuate dramatically depending on scope, complexity, and whether large descopes occur.

Figure I.5: Peer Examples Show Similar Variance In Change Order Proportion to BART

Agency / Project	Approx. Change Orders % of Project(s)[2]	Notes	Source
BART (Bay Area Rapid Transit) (FY 21–24)	0.98%		See audit data above
Typical U.S. Large Projects (industry benchmark)	5–15%	Varies widely with project scale, delivery method, and site conditions.	Presented by the California High-Speed Rail Authority to the Assembly Committee on Transportation, March 2023, referencing standard industry practices for large transit projects
California High-Speed Rail (Mega-Project)	17%	Large-scale project reaching over $23B total cost, with significant scope and design evolution.	Testimony of the California High-Speed Rail Authority before the Assembly Committee on Transportation, Progress on Construction Packages, 2023
LA Metro, Regional Connector (light rail subway)	28%	Complex tunneling & downtown utility relocations contributed to above-average change orders.	Los Angeles Metro Board documents, Regional Connector Project, Change Orders, August 2022
SFMTA (San Francisco) Smaller Station Projects	2%	Low rate for routine station refurbishments & maintenance. Larger expansions can show higher change orders.	San Francisco Board of Supervisors Budget and Legislative Analyst's Office, Change Order Review, May 2011
Sound Transit (Seattle) (multiple capital projects)	8%	Agency-wide average across several design-build and design-bid-build contracts.	Washington State Auditor's Performance Audit, Sound Transit: Management of Construction Changes, June 2020, plus Sound Transit Board Materials

Source: Analysis of available records

These wide variations are not unique to BART. Peer agencies in Seattle (Sound Transit), San Francisco (SFMTA), and California (including High-Speed Rail) report equally broad swings in their audits and board presentations, ranging from around 2% for smaller station upgrades to well above 15% for multibillion-dollar "megaprojects." In many cases, net figures can mask higher underlying additions if large descopes are captured as credits. Consequently, while BART's aggregate percentage may initially seem low, the underlying project-level data reveal a similarly diverse landscape of change orders. Ensuring accurate reporting and reconciling systems data are therefore critical steps to confirm whether BART's overall levels truly trend below peers, or if net credits have simply offset substantial additions on other projects, mirroring industry-wide patterns.

[2] The numerator used in these calculations vary depending on the source and some are not listed at all. The calculation we used for BART was based on a % of total annual spending in the audit period. Others may use a different numerator such as individual project spending. The lack of standard reported industry calculations makes this figure difficult to compare with peer jurisdictions. Figure I.4 illustrates the range we see across BART's projects and demonstrates why the overall percentage is averaged to a relatively low level.

Findings

Finding 1: Change Orders Need Monitoring for the Risk of Fraud, Waste, and Abuse

WHY THIS MATTERS

BART's Office of Infrastructure Delivery (OID) enforces contract terms while also facilitating project progress, a dual role that creates inherent conflicts of interest. This overlap could lead to lenient contract enforcement if OID prioritizes relationships with contractors over strict restrictions and are under pressure to meet project milestones. Industry research (including the Association of Certified Fraud Examiners' guidance) shows that weak controls over change orders increase the likelihood of inflated costs, favoritism, and potential fraud. Strengthening independent oversight can protect both public funds and BART's reputation.

There are recent examples of this in other transit agencies. For example, a 2022 case involving the California Department of Transportation (Caltrans) illustrates these risks, where a contract manager accepted nearly $1 million in bribes in exchange for approving favorable change orders.[3]

RELEVANT CRITERIA AND GUIDANCE

a. Resident Engineer Manual (April 2020): outlines their responsibilities, including overseeing both construction quality and contractor change orders while managing daily interactions with the same contractors they are expected to regulate.
b. Federal Transit Administration Best Practices (October 2016): Encourages separation of contract oversight functions from day-to-day project management to mitigate the risk of fraud and abuse. Their guidance states "While best practices differ, all authorities recognize a fundamental need for a system of checks and balances […]"[4]
c. BART Board's Suspension and Debarment Policy (2024): Identifies 22 conditions under which a vendor may be temporarily or permanently suspended, reinforcing the need for monitoring and detection of misconduct.

WHAT WE FOUND

According OID's Resident Engineer Manual, Resident Engineers are primarily responsible for acting on this dual role of both enforcer and facilitator. Even as other staff within OID reportedly participate in managing this role, [5] OID as a whole bears this conflicting mandate. They face unavoidable tension between ensuring project progress and enforcing contractual, financial, and performance requirements. They oversee both construction quality and contractor change orders while managing daily interactions with the same contractors they are expected to regulate. This structure could lead to a lenient approach in which OID could, intentionally or not, prioritize maintaining good relationships with contractors over strict compliance. OID effectively works without a distinct check or balance because no other function within BART is explicitly assigned to look for fraud red flags or monitor change order trends.

Other Stakeholders Are Not Positioned to Provide Full Oversight

Other BART stakeholders participating in the change-order process are not equipped to provide full independent oversight. The **Procurement Department's** role is primarily procedural, ensuring change-order documentation is complete and occasionally flagging anomalies. However, Procurement is not mandated to

[3] US Department of Justice, "Former Public Official and California Contractor Sentenced for Bid Rigging and Bribery", April 24, 2023
[4] Federal Transit Administration, "Best Practices Procurement & Lessons Learned Manual" FTA Report No. 0105, October 2016.
[5] OID reports that in practice other staff within the Office help manage the dual roles with additional reviews and other staff often take a contrarian perspective to support the Resident Engineer's dual mandate of enforcement and facilitation. However, these practices were neither documented in the Resident Engineer Manual (April 2020) nor mentioned during interviews.

perform independent cost-analyses[6] or evaluate trends across multiple change orders that might signal fraud or manipulation. The **Internal Audit Division** reviews change orders above $500,000 (and is notified of those over $100,000) but relies on limited documentation. It does not receive automated data feeds or access to BART's construction management system (WongCMS), making it difficult to detect patterns of vendor misconduct or consistent price inflation.[7]

Meanwhile, the **General Counsel's Office** focuses on legal compliance and contract terms rather than cost or fraud risks, and the **Office of Civil Rights** monitors only Disadvantaged Business Enterprise and small-business criteria, its scope does not explicitly extend to broader fraud detection.[8]

OID's responsibilities are outlined and compared with other functions at BART in Figure 1.1.

Figure 1.1: OID's Monitoring Duties Conflict with Project Delivery and No Other Roles Are Assigned to Monitor Change Risks Broadly

	Facilitates Project Delivery with Contractor	Assesses Cost Reasonableness	Reviews for Document Compliance of Process	Monitors for Fraud Risks	Tracks Vendor Behavior	Monitors Federal Disadvantaged Business Compliance
Office of Infrastructure Delivery (Resident Engineer)	✓	✓	✓	✓	✓	✓
Procurement Department		*Reviews Resident Engineer's analysis for compliance only*	✓			
Internal Audit Division		*Reviews overhead rates of contract, but not change orders*	✓			
General Counsel's Office			✓			
Office of Civil Rights			✓	*Limited scope*[9]		✓

Source: Analysis of BART policies and practices

[6] The Procurement Department performs a high-level price analysis "as needed", but the "User Department/Project Manager" conducts a more detailed cost analysis, which they review for reasonableness.

[7] Internal Audit noted that they have "developed an expanded Change Order review process, which would be earlier in the process and include potentially cost or price testing […]" but it is still in development with internal stakeholders at BART.

[8] See Finding Four of this report for additional discussion on the Office of Civil Rights' role.

[9] OCR's change-order review is limited to federal compliance checks: (a) verifying that the prime and any subcontractors are not suspended or debarred under 2 CFR Part 180, and (b) confirming that each listed DBE continues to perform a "commercially useful function" (49 CFR § 26.55). OCR does not analyze cost reasonableness, test supporting documentation, or perform trend analyses across change orders.

Information Systems Limit Oversight

Having systems that can collect and report out on key information is essential for fraud prevention and detection. BART's information systems are unable to generate and track reports for this purpose. Without appropriate reporting and fraud-detection analytics, even a designated oversight entity would be hampered in detecting vendor misconduct or contract abuse. Finding 2 discusses the limitation of BART's current systems further.

The risk of fraud becomes especially salient when considering real-world cases such as a 2022 incident at Caltrans, where a contract manager accepted nearly $1.0 million in bribes. In that instance, absent strong oversight, a contractor was able to inflate costs through favorable change orders. BART, remains vulnerable to similar schemes unless it bolsters its monitoring and accountability frameworks.

Ability to Address Misconduct Under the Board's Suspension and Debarment Policy is Severely Limited

Finally, because OID controls so much of the contract-monitoring function, BART's Board of Directors could be unaware of serious vendor performance issues that might trigger debarment or suspension under the Board's newly adopted policy. Without a separate role to flag recurring cost overruns, unethical behavior, or repeated compliance violations, BART's ability to address misconduct under the Board's Suspension and Debarment Policy is severely limited.

Recommendations

The Internal Audit Division should:

1.1 Expand its role to provide independent oversight of contractor performance and change orders. The designated function should independently review change orders, monitor contractor performance, and seek to detect fraud, waste, and abuse through periodic audits and monitoring of trends. The oversight should align with Federal Transit Administration best practices by ensuring contract enforcement is separate from project execution and using data analytics to detect vendor performance trends and anomalies. This process should function separately from the existing change order approval workflow the Office of Infrastructure Delivery uses to route and approve change orders internally. This separate process would allow Internal Audit to review change orders in parallel without adding to the review timeline of each orders' approval.

The Office of Infrastructure Delivery should:

1.2 Update the Resident Engineer's Manual to define the expansion of an independent monitoring role of the Internal Audit Division.

1.3 Provide the Internal Audit Division full read-only access to all data systems they need to monitor change orders.

The Procurement Department should:

1.4 Provide the Internal Audit Division full read-only access to all data systems they need to monitor and track procurement activities.

Finding 2: Outdated and Missing Information In Systems Hampers Change Order Oversight and Compliance

WHY THIS MATTERS

BART relies on two primary systems to manage financial and construction data: PeopleSoft and WongCMS. Both systems should accurately capture the status and value of change orders to ensure transparency, enable oversight, and maintain compliance with federal and internal policies. However, we found that the lack of clear information-governance controls in these systems undercuts effective monitoring. Missing, outdated, or inconsistent data make it difficult for BART to reconcile contract changes, detect anomalies, and fulfill Federal Transit Administration (FTA) recordkeeping requirements.

RELEVANT CRITERIA AND GUIDANCE

a. Federal Transit Administration (FTA) Best Practices Procurement Manual. Requires thorough and accurate contract documentation to promote proper funding use and compliance.
b. BART Resident Engineer's Manual (April 2020). Outlines how Resident Engineers should record and maintain contract documentation, although it does not explicitly address robust data-governance policies.

WHAT WE FOUND

In examining a sample of change orders, we identified recurring instances of outdated or missing documented information in both WongCMS and PeopleSoft. These deficiencies appear in three critical areas: (1) the accuracy of key data fields, (2) the systems' ability to classify and track various types of contract modifications, and (3) data reconciliation between the two systems. We also noted inconsistent retention of supporting documentation, which further complicates attempts to monitor overall contract and project expenditures.

Recurring Data Errors Obscure Change-Order Accuracy

Key fields in WongCMS do not consistently reflect final negotiated values. For instance, some multi-part change orders were updated to show only placeholder amounts, causing the total cost recorded in the system to deviate from the official approval. In other cases, credits for descoped items were missing altogether, while bid allowances were sometimes included and sometimes omitted. These irregularities lead to an incomplete picture of project expenditures and contract modifications.

Limitations in System Functionality

Neither WongCMS nor PeopleSoft reliably distinguishes between a "change order," "allowance," or "option." Because both systems treat them as a single category, staff cannot perform meaningful cost-analysis or reporting. This lack of specificity makes it challenging to identify patterns such as cost overruns, repeated scope changes, or potential bid manipulation.

Misalignment Between WongCMS and PeopleSoft

Data discrepancies exist between WongCMS and PeopleSoft reporting, which makes it impossible

to compare or reconcile change-order totals. Each system uses its own criteria to record transaction data, and there is no scheduled reconciliation process. As a result, BART cannot easily confirm the total impact of change orders on project budgets or detect inconsistencies that might signal errors, fraud, or abuse.

Inconsistent Document Retention

In some instances, change-order records are absent from WongCMS, forcing staff to locate documents stored in emails, shared drives, or physical binders. Employees reported that pre-digital records were never fully integrated into current electronic systems, leaving key information scattered across locations. This inconsistent retention practice makes it difficult to maintain a complete and verifiable audit trail.

Planned System Upgrades Lack a Legacy Data Plan

The Office of Infrastructure Delivery (OID) reports that it is developing a new Project Performance Monitoring System (PPMS) to replace or supplement WongCMS, but no timeline or migration strategy has been finalized. In particular, it is unclear how existing data from WongCMS will be preserved, nor has BART developed a formal approach for archiving legacy information. These uncertainties raise concerns about future compliance, given that FTA guidelines and internal policies require that contract records remain accessible and accurate.

Data Governance Weaknesses Increase the Risk of Cost Overruns And Noncompliance

Because financial data in PeopleSoft and WongCMS are often incomplete or not kept in sync, BART cannot reliably calculate the aggregate effect of change orders on project budgets. This shortcoming limits the agency's ability to uncover patterns, such as contractors who bid low and subsequently increase costs through excessive change orders, and undermines BART's capacity to identify potential fraud or vendor favoritism. Furthermore, these data integrity gaps pose a compliance risk if federal or state oversight entities request detailed change-order documentation that BART cannot readily produce.

Recommendations

The Office of Infrastructure Delivery should:

2.1 Work with the Information Technology Department and the appropriate vendors to add fields that allow WongCMS and PeopleSoft to distinguish between change orders, allowances, and options.

2.2 Update the Resident Engineer's Manual to include an information and data governance policy that requires key data fields including but not limited to the amount, type of change, and status, to be accurate and updated, and a review of all files to ensure they are retained in a centralized and consistent manner.

2.3 If WongCMS is replaced with another system, ensure that access to WongCMS is maintained in some form such as preserving a read-only copy of the system, importing the data into the new system, or some other form of accessible information storage aligned with BART's record retention policy.

Finding 3: Inconsistent Records Weaken Oversight of Change Orders' Federal Compliance

WHY THIS MATTERS

BART receives federal funding for some projects meaning it must comply with 49 CFR Part 26, which requires public transit agencies to implement Disadvantaged Business Enterprise (DBE) programs and ensure equitable participation by DBE firms. In addition, California Public Contract Code (PCC) Section 2002 mandates that agencies offering small business preferences adopt measures to prevent fraud and misuse of small business status. BART's Small Business Program, authorized under PCC § 2002, extends similar protections and opportunities to state and locally funded projects.

However, incomplete documentation, decentralized information systems, and limited access to change-order records make it difficult for BART's Office of Civil Rights (OCR) to validate DBE or small business participation. This risks noncompliance with federal and state requirements and could jeopardize BART's eligibility for federal funds.

RELEVANT CRITERIA AND GUIDANCE

a. 49 CFR Part 26: Requires recipients of U.S. Department of Transportation funds to establish DBE programs, ensure nondiscrimination, and prevent the denial of contracting opportunities to DBE firms.
b. California PCC § 2002: Allows for small business preferences but obligates agencies to adopt policies preventing fraudulent claims of small business status.
c. BART Small Business Program: a Board-approved program that applies small business participation goals to state and locally funded projects, analogous to DBE requirements on federally funded contracts.
d. Office of Civil Rights, Standard Operating Procedures, revised July 2025 states that OCR analysts will "Review all change orders for DBE/SB/LSB utilization and/or opportunities for subcontractor participation."

WHAT WE FOUND

OCR administers BART's DBE Program and enforces small business requirements. On federally funded contracts, OCR verifies that prime contractors fulfill DBE commitments under 49 CFR Part 26. For state and locally funded contracts, OCR oversees small business participation under BART's Small Business Program. Our audit shows inconsistent monitoring and gaps in documentation related to these monitoring responsibilities. This is caused by OCR not receiving or having access to all necessary information to perform the monitoring.

Testing Suggests OCR Does Not Have Complete Documentation and Information Needed To Fulfill Role

Our audit testing showed the OCR does not have access to all the information it needs to perform its roles. One of our tests requested documentation related to 41 change orders from OCR. Of the 41, OCR was only able to provide the requested documentation from eight using information they maintained in their own records. The remaining 33 requested documents OCR obtained by emailing the project management staff from the Office of Infrastructure Delivery. Of the missing samples, 28 had either a DBE, SB, or other utilization goals, which OCR's procedures require them to review. While OCR staff could have reviewed some records previously but not retained them, the significant number of records not in their procession suggests they are unable to monitor these programs with their current information access.

It is worth noting that for most of the 33 samples that OCR did not have documentation for, they were able to retrieve them from project teams. OCR did this by requesting documents for our samples over email, indicating that they do not have direct access to the records they need to assess the adequacy of the change order documentation, information on who the subcontractors were, and what payments were made. In most cases, project staff were able to provide it to OCR, but this information would not have normally been provided to OCR had it not been part of this audit's requests.

Incomplete Information and Decentralized Systems Limit Monitoring

According to BART's processes, OCR does not need to approve every change order, but OCR does need to know about all change orders so they can fulfill their compliance monitoring responsibilities. At the time of the audit, only change orders that needed OCR's approval were automatically sent to them, while those not required were generally not provided to OCR unless they requested them.

We observed that conformed (approved/final) change orders, essential to OCR's review often reside in multiple locations. Some documents appear in WongCMS while others are saved on SharePoint sites or staff-managed shared folders. OCR staff do not have access to WongCMS and may not have access to the project team's shared folders.

This fragmentation makes it challenging for OCR to confirm the most current version of a change order and to locate supporting evidence, such as proof of subcontractor eligibility, proof of work, and payment applications. Because BART's financial system (which captures lump-sum amounts) does not reconcile with subcontractor-level data, OCR's ability to verify DBE or small business compliance is severely limited. As a result, oversight could be sporadic, leaving BART vulnerable to potential noncompliance with 49 CFR Part 26 and PCC § 2002.

No Standard Procedure for Routing and Archiving Conformed Change Orders

A critical contributor to the inconsistent documentation is the lack of a mandatory process for distributing conformed change orders to OCR and storing them in a single repository. Currently, some project teams may notify OCR of a newly executed change order, while others rely on informal communication or provide notice only after payments have been processed. Under this arrangement, OCR's ability to intervene or ensure contractors meet DBE and small business obligations is severely constrained, as staff could learn of non-compliant practices only after the fact.

Standard Operating Procedures Could Improve Information Flows

In September 2023, BART's Performance & Innovation team convened a Rapid Improvement Event to address various inefficiencies in the change-order process. Participants report highlighting the need for formal standard operating procedures (SOPs) across functions to govern how project teams communicate new or amended change orders to stakeholders, including OCR, and how records should be stored. If implemented, SOPs could require real-time routing of conformed change orders to OCR, a single repository for these documents, and consistent labeling practices that reduce confusion over versions and date stamps.

Receipt and Access to All Change Order Documentation Will Better Enable Existing Oversight Procedures

If OCR is able to receive and access all change order information, it would be better positioned to perform its own procedures and review change orders for utilization. This in turn will help ensure BART's change orders are conducted in accordance with federal and state law.

Recommendations

The Office of Infrastructure Delivery should:

3.1 Issue formal Standard Operating Procedures stipulating (a) a single repository for all conformed change orders, (b) mandatory routing of all change orders to the Office of Civil Rights for real-time visibility, particularly for any change order with subcontractors, and (c) uniform naming and version-control standards so that conformed copies are consistently labeled and date-stamped.

3.2 Provide the Office of Civil Rights staff with read-only access to systems such as WongCMS, SharePoint, or any platform that captures change order information and supporting records so they can access the same information as construction teams.

The Office of Civil Rights should:

3.3 Update existing procedures for reviewing all applicable change orders given the procedural enhancements made under recommendations 3.1 and 3.2.

Finding 4: Opportunities to Improve Project Design and Planning to Avoid Some Change Orders

WHY THIS MATTERS

Differing site conditions are a common cause of change orders at BART. Research and best practices suggest that almost every dollar spent on subsurface investigation during planning and design saves four times as much in construction. There may be opportunities for the Office of Infrastructure Delivery to further consider its planning and design as it relates to the change orders we observed. A small portion of changes, an estimated 5.0%, appear to be caused by errors and omissions in the planning and design process. This means that between FY 2020-21 to FY 2023-24, errors added an estimated $2.7 million of costs to BART.[10] Both problems present an opportunity to improve BART's processes.

RELEVANT CRITERIA AND GUIDANCE

a. U.S. Department of Transportation (U.S. DOT) Project Delivery Center of Excellence's *Understanding Construction Change Orders*, states that "The quality and consistency of work in key phases in project development—planning, design, estimating, scheduling, contracting, and construction—significantly impact the likelihood of change orders." It further suggests that poor design often "stems from inaccurate or missing information […]".[11]
b. The Federal Highway Administration notes in its *Synthesis of Subsurface Utility Engineering (SUE) Practices*, the appropriate level of investigation depends on each project's complexity, budget, and tolerance for hidden conditions.[12]

WHAT WE FOUND

We saw two types of problems in the change orders we reviewed. First, were unexpected site conditions that might be preventable with more testing and investigation during planning and design, but at an added cost. The others are preventable problems caused by apparent errors and omissions.

Some Surprises Could be Prevented, But At a Cost

Several of the sampled change orders we reviewed in this audit were due to differing site conditions, meaning the conditions differed from what the project plans accounted for. This can include things like unexpected buried utilities, concealed infrastructure behind walls, or sub-surface soils not meeting a plan's requirements.

In some instances, these surprises could potentially be minimized through more extensive pre-construction testing (e.g., ground-penetrating radar, test borings, Subsurface Utility Engineering). However, each additional step raises upfront costs and must be weighed against the risk of unforeseen conditions later. As the Federal Highway Administration notes in its *Synthesis of Subsurface Utility Engineering (SUE) Practices* (2019), the appropriate level of investigation depends on each project's complexity, budget, and tolerance for hidden conditions.[13] A Purdue University study cited by FHWA quantified a total

[10] Based on a dollar weighted calculation and a sample size of 30 using the Central Limit Theorem using for large populations. Our samples with causes linked to apparent errors and omissions was valued at $87,704.34 out of a $1,764,337.34 sample population. When extrapolated to the entire population of change orders in our audit period it equals $2,680,338.08, or 5% of $53,920,029.00 total change orders in the period.
[11] John A. Volpe National Transportation Systems Center (U.S.), *Understanding Construction Change Orders*, January 2025. Available at: https://www.volpe.dot.gov/project-delivery-center-excellence/understanding-construction-change-orders
[12] Federal Highway Administration, *Synthesis of Subsurface Utility Engineering (SUE) Practices*, 2019. Available at: https://www.fhwa.dot.gov/policy/otps/pubs/index.cfm
[13] Federal Highway Administration, *Synthesis of Subsurface Utility Engineering (SUE) Practices*, 2019. Available at: https://www.fhwa.dot.gov/policy/otps/pubs/index.cfm

of $4.62 in savings for every $1.00 spent on SUE,[14] underscoring the potential cost benefits of more thorough site investigations.

Ultimately, it is a risk trade-off: spending more on exploratory work can mitigate, but not entirely eliminate, the possibility of costly mid-project discoveries. The recommendations made in Finding 2 of this report to improve systems and records related to change orders, would help BART better assess the impact of planning and design on its construction outcomes and the cost they may have on change orders in particular.

5% of Change Orders Could Be Prevented With Better Planning

On a smaller scale, five of the 32 randomly sampled change orders we tested may be tied to planning and design-related errors and omissions. On a dollar-weighted basis, this suggests that 5.0% of contract changes may share this problem. This means that between FY 2020-21 and FY 2023-24, errors added an estimated $2.7 million of costs to BART.

The issues we observed ranged from missing or unclear specifications, such as inadequate details for lighting and a gravity damper, to omissions in the scope for installing web cameras and conflicts with an upgraded fence design in a prior contract. In addition, corroded 50-year-old conduits went unaddressed until demolition revealed the need for replacement. Each scenario required a mid-project change order to resolve, underscoring how improved up-front planning, more accurate design, clearer contract documentation, and better coordination of related work could minimize avoidable costs and delays.
Figure 4.1 details the random samples we found that contained seemingly avoidable problems.

No Industry Standards for Comparison

There are no industry standards for reporting errors or change order rates, making comparisons with other transit agencies difficult. Without more focused technical analysis on this topic, we do not know whether BART's planning and design have already mitigated significant issues, or if systemic shortcomings exist. Therefore, we can't determine how much BART could reasonably prevent additional problems since some amount of inherent uncertainty and errors are likely to occur in any environment.

Figure 4.1: Change Orders (CO) Caused By Avoidable Problems

Contract # & Title	CO #	CO Amount	Key Issue / Description
15EK-102: TCCCP West Bay Core Capacity	75.4 Part 1	$10,000	**Contract Lack of Clarity** regarding lighting details (mounting, power, etc.) leading to extra contractor clarifications and a change order.
15EK-102: TCCCP West Bay Core Capacity	75.13	$8,368	**Contract Lack of Clarity** on exact size/location of a 12 × 12 gravity damper, prompting additional negotiation and cost.
01RQ-120: Hayward Maintenance Complex – Site, Track, and Systems	10	$48,238	**Web Cameras Omitted** from contractor's original scope due to BART's original intention to self-perform the work. This required a change order for mounting/power of the cameras.
01RQ-120: Hayward Maintenance Complex – Site, Track, and Systems	39	$4,752.34	**Fence Specification Mismatch** (previous contract used pipe rail, while this one called for tension wire), resulting in added cost to align fences.
05HA-100: El Cerrito Del Norte Station Modernization	140	$16,346	**Corroded Conduit Not Anticipated** despite ~50-year infrastructure; resulted in a mid-project change once the old conduit was found to need replacement.

Source: Results from audit's random testing of change orders in scope period

[14] Purdue University, *Cost Savings on Highway Projects Utilizing Subsurface Utility Engineering*, as cited by the Federal Highway Administration at: https://www.fhwa.dot.gov/programadmin/pus.cfm

RECOMMENDATIONS

The Office of Infrastructure Delivery should:

4.1 Review recent projects to evaluate whether investing more in upfront subsurface investigations or enhanced quality control in the planning and design phases could cost-effectively reduce change orders from unforeseen conditions and errors or omissions.

4.2 Review recent errors and omissions identified through change orders to determine common themes or recurring issues in the planning and design phases, assessing whether additional quality assurance or review processes would reduce these issues in future projects.

Recommendations List

Ref.	Responsible Party	Recommendation
1.1	Internal Audit Division	Expand its role to provide independent oversight of contractor performance and change orders. The designated function should independently review change orders, monitor contractor performance, and seek to detect fraud, waste, and abuse through periodic audits and monitoring of trends. The oversight should align with Federal Transit Administration best practices by ensuring contract enforcement is separate from project execution and using data analytics to detect vendor performance trends and anomalies. This process should function separately from the existing change order approval workflow the Office of Infrastructure Delivery uses to route and approve change orders internally. This separate process would allow Internal Audit to review change orders in parallel without adding to the review timeline of each orders' approval.
1.2	Office of Infrastructure Delivery	Update the Resident Engineer's Manual to define the expansion of an independent monitoring role of the Internal Audit Division.
1.3	Office of Infrastructure Delivery	Provide the Internal Audit Division full read-only access to all data systems they need to monitor change orders.
1.4	Procurement Department	Provide the Internal Audit Division full read-only access to all data systems they need to monitor and track procurement activities.
2.1	Office of Infrastructure Delivery	Work with the Information Technology Department and the appropriate vendors to add fields that allow WongCMS and PeopleSoft to distinguish between change orders, allowances, and options.
2.2	Office of Infrastructure Delivery	Update the Resident Engineer's Manual to include an information and data governance policy that requires key data fields including but not limited to the amount, type of change, and status, to be accurate and updated, and a review of all files to ensure they are retained in a centralized and consistent manner.
2.3	Office of Infrastructure Delivery	If WongCMS is replaced with another system, ensure that access to WongCMS is maintained in some form such as preserving a read-only copy of the system, importing the data into the new system, or some other form of accessible information storage aligned with BART's record retention policy.
3.1	Office of Infrastructure Delivery	Issue formal Standard Operating Procedures stipulating (a) a single repository for all conformed change orders, (b) mandatory routing of all change orders to the Office of Civil Rights for real-time visibility, particularly for any change order with subcontractors, and (c) uniform naming and version-control standards so that conformed copies are consistently labeled and date-stamped.
3.2	Office of Infrastructure Delivery	Provide the Office of Civil Rights staff with read-only access to systems such as WongCMS, SharePoint, or any platform that captures change order information and supporting records so they can access the same information as construction teams.
3.3	Office of Civil Rights	Update existing procedures for reviewing all applicable change orders given the procedural enhancements made under recommendations 3.1 and 3.2.
4.1	Office of Infrastructure Delivery	Review recent projects to evaluate whether investing more in upfront subsurface investigations or enhanced quality control in the planning and design phases could cost-effectively reduce change orders from unforeseen conditions and errors or omissions.
4.2	Office of Infrastructure Delivery	Review recent errors and omissions identified through change orders to determine common themes or recurring issues in the planning and design phases, assessing whether additional quality assurance or review processes would reduce these issues in future projects.

Auditee Response

Audit of Construction Contract Change Orders – Recommendation List

Ref.	Responsible Party	Recommendation	Management Response Due 8/28/2025
1.1	Internal Audit Division	Expand its role to provide independent oversight of contractor performance and change orders. The designated function should independently review change orders, monitor contractor performance, and seek to detect fraud, waste, and abuse through periodic audits and monitoring of trends. The oversight should align with Federal Transit Administration best practices by ensuring contract enforcement is separate from project execution and using data analytics to detect vendor performance trends and anomalies. This process should function separately from the existing change order approval workflow the Office of Infrastructure Delivery uses to route and approve change orders internally. This separate process would allow Internal Audit to review change orders in parallel without adding to the review timeline of each orders' approval.	Agreed, with qualifications: In addition to the review procedures conducted by Internal Audit (IA) concerning Change Orders (CO), as referenced in footnote 8 of the audit report, IA intends to further improve oversight activities related to the change order processes to better align with emerging best practices. All review work performed by IA includes monitoring for red flags or indicators of fraud, waste, and abuse. Similarly, these and all review activities are connected to Federal Acquisition Regulations (FAR) and Cost Accounting Standards (CAS), as prescribed by our Internal Audit Charter, the Government Accounting Office's (GAO) Generally Accepted Government Audit Standards (GAGAS), IIA's Global Audit Standards, and FTA best practices. IA will continue to have no active role in the execution of the contract, providing only CO *advisory* services to management. To maintain our independence and objectivity, IA has no approval role in an active contract. The CO review process conducted by IA is already independent from the OID approval process and functions concurrently with existing activities.
1.2	Office of Infrastructure Delivery	Update the Resident Engineer's Manual to define the expansion of an independent monitoring role of the Internal Audit Division.	Agreed, The Resident Engineer's Manual (RE Manual) is presently undergoing updates. The roles and responsibilities of the Internal Audit division concerning independent monitoring will be incorporated. The RE Manual is scheduled to be updated by the first quarter of fiscal year 2027.
1.3	Office of Infrastructure Delivery	Provide the Internal Audit Division full read-only access to all data systems they need to monitor change orders.	Agreed, Construction Management Team within Office of Infrastructure Delivery will provide read access to Internal Audit for all change orders. Access will be provided by June 30, 2026
1.4	Procurement Department/OCIO	Provide the Internal Audit Division full read-only access to all data systems they need to monitor and track procurement activities.	The Internal Audit division will collaborate with the Office of the Chief Information Officer (OCIO) and Procurement department to ensure that it possesses "full read-only" access to the systems associated with Change Orders. It is important to note that Internal Audit has access to Procurement data as required, and Internal Audit also has access to PeopleSoft financials for the purpose of monitoring and tracking purchase orders and related materials. Furthermore, Internal Audit has access to the archives of the Executive Decision Document and SharePoint folders pertinent to projects and change orders.
2.1	Office of Infrastructure Delivery	Work with the Information Technology Department and the appropriate vendors to add fields that allow WongCMS and PeopleSoft to distinguish between change orders, allowances, and options.	Agreed, The Office of Infrastructure Delivery (OID) will collaborate with the Office of the Chief Information Officer (OCIO) to incorporate fields in the construction management tools, database, and software that differentiate between change orders, allowances, and options in contractual language. This will be completed by the first quarter of fiscal year 2027.

2.2	Office of Infrastructure Delivery	Update the Resident Engineer's Manual to include an information and data governance policy that requires key data fields including but not limited to the amount, type of change, and status, to be accurate and updated, and a review of all files to ensure they are retained in a centralized and consistent manner.	The Resident Engineer's Manual (RE Manual) will be updated to include SharePoint sites and provide a centralized data location. The RE Manual will also integrate updated Information and change orders on a regular basis. Estimated Completion Date: FY 27Q1
2.3	Office of Infrastructure Delivery	If WongCMS is replaced with another system, ensure that access to WongCMS is maintained in some form such as preserving a read-only copy of the system, importing the data into the new system, or some other form of accessible information storage aligned with BART's record retention policy.	The data from WongCMS will be archived and preserved in accordance with BART's record retention policy. This process is currently underway and is projected to be finalized by the fourth quarter of fiscal year 2027
3.1	Office of Infrastructure Delivery	Issue formal Standard Operating Procedures stipulating (a) a single repository for all conformed change orders, (b) mandatory routing of all change orders to the Office of Civil Rights for real-time visibility, particularly for any change order with subcontractors, and (c) uniform naming and version-control standards so that conformed copies are consistently labeled and date-stamped.	Agreed. The Resident Engineer's Manual will encompass the procedure for a single repository, along with the standard operating procedure for consistent naming and version control standards. All change orders are currently routed to the Office of Civil Rights. Estimated Completion Date: FY27Q1
3.2	Office of Infrastructure Delivery	Provide the Office of Civil Rights staff with read-only access to systems such as WongCMS, SharePoint, or any platform that captures change order information and supporting records so they can access the same information as construction teams.	The Construction Management team will provide access to the Office of Civil Rights for all pertinent documents. Estimated Completion Date: FY27Q1
3.3	Office of Civil Rights	Update existing procedures for reviewing all applicable change orders given the procedural enhancements made under recommendation 3.1 and 3.2.	Agreed. The Office of Civil Rights will update its policies and procedures once recommendation 3.1 and 3.2 enhancements are realized.
4.1	Office of Infrastructure Delivery	Review recent projects to evaluate whether investing more in upfront subsurface investigations or enhanced quality control in the planning and design phases could cost effectively reduce change orders from unforeseen conditions and errors or omissions.	The Office of Infrastructure Delivery (OID) has recently implemented the Design Quality Management Plan (DQMP), which is expected to significantly enhance design quality. Additionally, OID is also incorporating requirements for subsurface investigations during the planning and design stages, all to be complemented by training, post-project evaluations and lessons learned, independent and peer design reviews, as well as outreach to the industry to further elevate design quality. Estimated Completion Date: June 2026.
4.2	Office of Infrastructure Delivery	Review recent errors and omissions identified through change orders to determine common themes or recurring issues in the planning and design phases, assessing whether additional quality assurance or review processes would reduce these issues in future projects.	With the recent implementation of the Design Quality Management Plan, OID anticipates enhanced quality in our design packages. Additionally, OID intends to provide training, expand peer and independent reviews, conduct post-project evaluations, share lessons learned, and address design reviews and challenges as integral components of the design and planning process to improve quality. Estimated Completion Date: June 2026.