

# **Southwest Light Rail Transit Construction: Metropolitan Council Oversight of Contractors**

**2023 Evaluation Report**

**Program Evaluation Division  
Office of the Legislative Auditor  
State of Minnesota**



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## Evaluation Staff

Judy Randall, *Legislative Auditor*  
Jodi Munson Rodríguez, *Deputy Legislative Auditor*

Caitlin Badger  
Gretchen Becker  
Eleanor Berry  
Stephanie Besst  
Sarah Delacueva  
Scott Fusco  
Will Harrison  
Marielynn Herrera  
Jenna Hoge  
David Kirchner  
Kelly Lehr  
Kyle Malone  
Kaitlyn Schmaltz  
Laura Schwartz  
Caitlin Zandoni-Wells

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June 2023

Members of the Legislative Audit Commission:

The Southwest Light Rail Transit (Southwest LRT) project has drawn attention from legislators, the media, and the general public, due to delays and cost overruns.

In this report—the second of two program evaluations on Southwest LRT we are issuing in 2023—we find that the Metropolitan Council has not adequately enforced several aspects of its key Southwest LRT construction contracts. Further, we found the Council did not have adequate documentation to support some of the decisions it made on the project. We make several recommendations to the Council related to contract enforcement and documentation practices.

Our evaluation was conducted by David Kirchner (project manager), Kaitlyn Schmaltz, and Caitlin Zaroni-Wells, with assistance from Matthew Fahrenbruch. The Metropolitan Council cooperated with our evaluation.

Sincerely,



Judy Randall  
Legislative Auditor



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## Summary

June 2023

# Southwest Light Rail Transit Construction: Metropolitan Council Oversight of Contractors

The Metropolitan Council has not adequately enforced several aspects of its key Southwest Light Rail Transit (Southwest LRT) construction contracts, nor does it have adequate documentation to support some project decisions.

## Report Summary

### Change Order Processes and Contractor Requirements

- The Metropolitan Council did not hold the civil construction contractor accountable for requirements in its contract to estimate change order costs. (pp. 12-13)
- In six change orders we reviewed, the Metropolitan Council settled change order costs while allowing potential schedule delays to remain unresolved. (pp. 13-14)

**Recommendation** ► The Metropolitan Council should require its contractors to meet contractual obligations related to change orders and ensure contracts include adequate language to hold contractors accountable for change order requirements. (pp. 16-17)

- When using alternative change order processes, the Metropolitan Council has not adequately limited the Council's risk for future cost increases. (pp. 20-21)
- For some change orders we reviewed, the Metropolitan Council paid the contractor even though it could not fully validate the contractor had incurred the costs it claimed. (p. 21)

**Recommendation** ► The Metropolitan Council should make greater efforts to limit change work that occurs before costs are negotiated and improve its policies for managing change orders based on a contractor's reported costs. (pp. 21-22)

### Independent Cost Estimates and Change Order Negotiations

- The Metropolitan Council directed its cost estimating consultant to systematically increase its Independent Cost Estimates. (pp. 25-28)

**Recommendation** ► The Metropolitan Council should hold its cost estimating consultant accountable for delivering acceptable estimates and consider changing its cost estimation policies and contracts. It should not accept estimates it considers deficient and then systematically increase them. (pp. 28-29)

### Background

The Metropolitan Council is the responsible authority for the Southwest LRT project. At the start of construction, the Council estimated Southwest LRT would cost \$2.003 billion and the line would open in 2023. The Council now estimates that it will cost \$2.767 billion to complete and will open in 2027.

The Metropolitan Council oversees the work of contractors who design, engineer, and construct the Southwest LRT project.

Our report focuses on how the Metropolitan Council has addressed work that deviates from contract requirements. The Council uses the **change order** process to alter the project's specifications so that the contractor does the work differently than originally planned. The Council uses the **nonconformance report** process to address project work that does not align with contract requirements.

- The Metropolitan Council paid its civil construction contractor the price the contractor initially set for change orders about half of the time, including some instances when the Council's Independent Cost Estimates for the same change orders were significantly lower. (pp. 30-31)
- For five of the change orders we reviewed, the Metropolitan Council agreed to pay the civil construction contractor what it requested with little or no explanation for the Council's conclusion that the proposed costs were reasonable. (pp. 33-34)

**Recommendation ►** The Metropolitan Council should reform its processes for determining and justifying final change order costs. (p. 35)

## Nonconformance Reports

- For the cases we reviewed, the Metropolitan Council did not adequately document its decisions or track costs related to nonconformance reports. (pp. 40-43)
- The Metropolitan Council plans to deduct money for nonconforming work from future payments to the contractor, but it has not fully estimated the amount it plans to deduct and has not collected adequate documentation to do so. (p. 44)

**Recommendation ►** The Metropolitan Council should improve its documentation practices regarding nonconformance reports and related deduction amounts. (p. 45)

## Civil Construction Contract

- The Metropolitan Council's original contract with its civil construction contractor did not provide sufficient mechanisms for the Council to enforce contract requirements. (pp. 50-51)

**Recommendation ►** The Metropolitan Council should ensure its future contracts include sufficient enforcement mechanisms. (pp. 51-52)

## Summary of Agency Response

In a letter dated June 23, 2023, Metropolitan Council Chair Charles Zelle wrote that the Council appreciated "the Office of the Legislative Auditor's attention to this matter" but stated that the report's recommendations "do not align with [federal] guidance or construction law, are not appropriate for a project of this size and complexity, and in some instances could have contributed to additional delay." Chair Zelle stated that the "root cause of the change order administration issues and inefficiencies on the Project are...due to the extraordinary number of change orders on the Project." He affirmed that the Council is "committed to continuous improvement," as exemplified by its intent to review and implement recommendations it has received from the Minnesota Department of Transportation. Chair Zelle closed by declaring the Council has "a proven track record for delivering significant Transitway projects which are significant investments that improve our transportation system and advance the region's vision for the future."

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# Introduction

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In 2022, the Legislature directed the Office of the Legislative Auditor (OLA) to conduct a special review, a program evaluation, or both, of the Southwest Light Rail Transit (Southwest LRT) project.<sup>1</sup> In response to this law, OLA released a special review in September 2022 describing Southwest LRT’s project budget and timeline and a program evaluation in March 2023 of the Metropolitan Council’s decision making since construction began.<sup>2</sup> OLA has also begun a financial audit of certain Southwest LRT activities, and we may conduct additional work as circumstances warrant.<sup>3</sup>

This report is the second of two program evaluations that focus on the Metropolitan Council’s management of Southwest LRT construction.<sup>4</sup> As encouraged by the law, this evaluation report addresses:

- The extent to which the Metropolitan Council’s current practices for reviewing change orders and negotiating change costs are reasonable and appropriate.
- The extent to which the Metropolitan Council’s current practices for resolving quality concerns during construction are reasonable and appropriate.

To conduct this evaluation, we examined extensive amounts of Metropolitan Council policies, resolutions, documents, communications, meeting minutes, presentations, and data. We performed case studies in which we selected a sample of 16 completed or requested change orders and 16 nonconformance reports (which the Council utilizes to address work that does not align with contractual requirements) and exhaustively reviewed all available documentation. Less systematically, we also reviewed documentation related to many other change orders and nonconformance reports in the course of our research. We also examined contracts between the Metropolitan Council and some of the project’s key contractors. We reviewed federal and state laws and guidance and toured the Southwest LRT corridor. We interviewed current and former managers, employees, and contractors that have worked on the Southwest LRT project, and we conducted a survey of current and former project staff. We also spoke with representatives from Hennepin County and engineers at the Minnesota Department of Transportation (MnDOT).

We focused on the civil construction process—the building of the physical tracks, stations, bridges, retaining walls, and other structures that will make up the

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<sup>1</sup> *Laws of Minnesota 2022*, chapter 39, sec. 1.

<sup>2</sup> Office of the Legislative Auditor, Special Review, *Southwest Light Rail Transit: Project Budget and Timeline* (St. Paul, 2022); and Office of the Legislative Auditor, Program Evaluation Division, *Southwest Light Rail Transit Construction: Metropolitan Council Decision Making* (St. Paul, 2023).

<sup>3</sup> We also published an October 2021 memorandum summarizing a dispute between the Metropolitan Council and the Southwest LRT design contractor, AECOM Technical Services, Inc. Joel Alter, Director of Special Reviews, Office of the Legislative Auditor, memorandum to Senator D. Scott Dibble and Representative Frank Hornstein, *Southwest Light Rail Project Costs and Management*, October 28, 2021.

<sup>4</sup> “Metropolitan Council” can refer to the agency as a whole or to its 17-member governing board. In this report, we primarily describe and evaluate the actions of the agency. We refer to the “Metropolitan Council’s governing board” when speaking specifically about the 17-member board.

Southwest LRT line. We did not examine systems construction—the building of the electrical systems that will support the line—as that construction was in its early stages at the time we did our work. We also did not examine myriad other processes necessary for the construction of the 14.5-mile light rail line, such as property and right-of-way acquisition and management, acquisition of light rail cars, environmental assessment and mitigation, communication with neighboring residents and businesses, and traffic management during construction.

We did not attempt to make independent determinations regarding engineering decisions, such as whether design specifications for specific project elements were complete, whether changes in construction plans due to unforeseen on-site conditions were needed or appropriate, or whether incorrectly performed work was good enough to be kept in place rather than being removed and replaced. Instead, we examined how the Metropolitan Council managed its processes for reaching such decisions and how those decisions, once made, were implemented, paid for, and documented.

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# Chapter 1: Background

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The Southwest Light Rail Transit (Southwest LRT) project has been in development since before 2011. As the Office of the Legislative Auditor (OLA) has discussed in its previous reports, the Southwest LRT project has faced significant delays and cost increases.<sup>1</sup> Construction began on the project in 2019, and the Metropolitan Council currently expects to open the line for service in 2027.

In this chapter, we briefly review the project’s history, timeline, and budget, and provide references to past reports that provide further detail. We also describe two processes the Southwest LRT project office has used to manage deviations from contract specifications: change orders and nonconformance reports.

## Southwest LRT Project Background

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As explained in the Introduction, OLA has produced a special review and program evaluation regarding the Southwest LRT project. Below, we briefly summarize background information from previous reports.

### Project Overview

The Southwest LRT project [will connect Minneapolis to the suburban communities of Eden Prairie, Hopkins, Minnetonka, and St. Louis Park](#). The project includes the construction of 16 new transit stations, a 14.5-mile light rail track, and extensive infrastructure.

The Metropolitan Council is responsible for overseeing the design, engineering, construction, and future operations of the Southwest LRT line. The [main project funders](#) are the Federal Transit Administration and Hennepin County.<sup>2</sup>

### Project Costs and Delays

In 2011, the Metropolitan Council estimated that the Southwest LRT line would open in 2018 and cost \$1.25 billion to complete.<sup>3</sup> However, [as the Metropolitan Council designed the project over the next several years, the cost increased significantly](#). When the Metropolitan Council awarded the civil construction contract in late 2018, the budget had grown to \$2.0 billion, and the opening date had been pushed back to 2023.<sup>4</sup>

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<sup>1</sup> Office of the Legislative Auditor, Special Review, *Southwest Light Rail Transit: Project Budget and Timeline* (St. Paul, 2022); and Office of the Legislative Auditor, Program Evaluation Division, *Southwest Light Rail Transit Construction: Metropolitan Council Decision Making* (St. Paul, 2023).

<sup>2</sup> See Office of the Legislative Auditor, *Southwest Light Rail Transit: Project Budget and Timeline*, 6 (Exhibit 3).

<sup>3</sup> Project cost estimates are reported in “year of expenditure dollars,” or the amount of money that the project is expected to cost when accounting for projected future inflation.

<sup>4</sup> See Office of the Legislative Auditor, *Southwest Light Rail Transit: Project Budget and Timeline*, 33-42 (Appendix B).

The Southwest LRT project has faced [additional significant cost increases since the start of construction](#). The original budget at the start of construction was \$2.003 billion in 2019, but in 2022, the Metropolitan Council estimated a total budget of \$2.77 billion, an increase of 38 percent.<sup>5</sup> As of June 2023, the Council had not yet determined a source for all of the funds it needed to complete the project.

The project has also faced significant delays. In 2011, the Metropolitan Council projected the Southwest LRT line would open for service in 2018. However, construction did not begin until 2019 [due to uncertainties involving the final location of freight rail lines and scope changes prior to construction](#).<sup>6</sup>

At the start of construction, the Metropolitan Council projected an opening date in 2023. But in 2022, the Metropolitan Council estimated the opening would be delayed to 2027. [The Metropolitan Council has primarily attributed these delays to three large changes to the project](#): the addition of the Eden Prairie Town Center Station, the extension of a concrete protection barrier in Minneapolis, and a change to the method used to construct a tunnel in the Kenilworth neighborhood of Minneapolis.<sup>7</sup> In addition, our office found that delays also stemmed from the Council's [introduction of substantial new or changed work after the competitive bidding process for the civil construction contract](#) and the Council's [inability to ensure its civil construction contractor provided an acceptable project schedule](#).<sup>8</sup>

Due to the above-mentioned costs and delays, the Metropolitan Council signed a settlement agreement in March 2022 with its civil construction contractor to pay the contractor more money and set a new construction schedule.

## Southwest LRT Contractors

The Metropolitan Council does not use its own employees to construct the Southwest LRT project. Instead, the design, engineering, and construction of the project are being performed by a number of [contractors and their subcontractors](#).<sup>9</sup> The Council maintains a project office of more than 70 individuals to manage and coordinate the work of the various contractors.

In this report, we primarily discuss the Metropolitan Council's oversight of two key contractors:

- **Lunda/C.S. McCrossan Joint Venture (Lunda-McCrossan)** is the Metropolitan Council's primary civil construction contractor. It is responsible for construction of the physical infrastructure, including tracks, bridges, tunnels, retaining walls, stations, and parking lots.

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<sup>5</sup> See Office of the Legislative Auditor, *Southwest Light Rail Transit Construction: Metropolitan Council Decision Making*, 4.

<sup>6</sup> See Office of the Legislative Auditor, *Southwest Light Rail Transit: Project Budget and Timeline*, 18-27.

<sup>7</sup> *Ibid.*, 10-12 and 27.

<sup>8</sup> See Office of the Legislative Auditor, *Southwest Light Rail Transit Construction: Metropolitan Council Decision Making*, 23-31.

<sup>9</sup> *Ibid.*, 5-6.

- **AECOM Technical Services, Inc. (AECOM)** has served in two roles we discuss in this evaluation: (1) as the Metropolitan Council’s primary design contractor; it designed the Southwest LRT line and provides design and engineering input and support as needed during construction, and (2) as the Council’s cost estimating consultant.<sup>10</sup> When the Metropolitan Council has decided to make changes to its construction specifications that would result in cost changes, AECOM has frequently provided an estimate of appropriate costs separate from the estimate provided to the Council by Lunda-McCrossan.<sup>11</sup>

## Managing Differences from Contract Specifications

In large projects like Southwest LRT, construction contractors build project elements according to design specifications agreed to at the time the construction contract is signed. However, no large project is ever built exactly as originally designed. Sometimes, unforeseen circumstances or scope changes require a project element to be constructed differently from the original specifications. At other times, the contractor does not build a project element to specifications due to errors or unexpected site conditions.

In this report, we focus on two key types of processes for managing contract deviations: change orders and nonconformance reports. Below, we provide a brief introduction to these two processes and describe the extent to which the Metropolitan Council has used them on the Southwest LRT project.

### Change Orders

A change order is a document that authorizes a change in the project’s original specifications so that the contractor builds a project element differently. The Metropolitan Council and the civil construction contractor generally begin processing change orders before the changed work is carried out in the field. Change orders may alter the nature of the work itself, the amount paid to the contractor, the amount of time allotted to complete the work, or any combination of these.



#### Change Order

A document authorizing a change in the work from what was initially defined in the contract, and which often results in changes to the amount paid to the contractor or time needed to complete the work.

From March 2019 to October 2022, the Metropolitan Council issued 658 construction change orders, leading to increased costs totaling nearly \$220 million. While some of these change orders decreased the cost of the project or had no impact on its cost, the vast majority resulted in increased costs.

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<sup>10</sup> As of June 2023, the Metropolitan Council was in the final stages of hiring a new independent cost estimating consultant.

<sup>11</sup> As we discuss in Chapter 3, in some instances the Metropolitan Council used its own employees instead of AECOM to develop cost estimates.

## Nonconformance Reports

The Metropolitan Council uses the nonconformance report process when work does not conform to the agreed-upon design or meet requirements defined in a contract. Unlike change orders, nonconformance reports are generally created after a project element is built, when Council employees or others discover that the work was not performed correctly. Nonconforming work could occur because of an error on the part of the contractor or consultant, or due to an unforeseen circumstance.



### Nonconformance Report

A form that documents the process to resolve a project work product that does not conform to the design or meet requirements defined in a contract or agreement.

As of November 2022, the Metropolitan Council had resolved 700 nonconformance reports related to the construction contract. As we discuss further in Chapter 4, the Council can take a variety of actions in response to nonconformance reports, ranging from allowing the nonconforming work to remain in place to requiring that work be removed and replaced with new construction that does meet specifications.

# Chapter 2: Change Order Processes and Contract Requirements

Sometimes construction projects encounter issues that call for a change from what was originally planned in the contract. In response, project leaders may use “change orders” to adjust work done, the amount paid to the contractor for the work, the amount of time allotted to complete the work, or a combination of these. Managing change orders is a key responsibility for project leaders. They must ensure that each change order effectively addresses the issue encountered while also attempting to limit the impact the change order has on the project’s cost and schedule.

## Key Findings in This Chapter

- The Metropolitan Council did not hold the civil construction contractor accountable for requirements in the contract to estimate change order costs.
- In six of nine cases we reviewed, the Metropolitan Council settled change order costs while allowing potential schedule delays to remain unresolved.
- When using alternative change order processes, the Metropolitan Council has not adequately limited the Council’s risk for future cost increases.



### Change Order

A document authorizing a change in the work from what was initially defined in the contract, and which often results in changes to the amount paid to the contractor or the time needed to complete the work.

Large construction projects, like Southwest Light Rail Transit (Southwest LRT), may involve many change orders during construction. Change orders on the Southwest LRT project have varied in magnitude; some have resulted in major changes to the project’s cost and schedule, while others have had minimal impact.<sup>1</sup> As shown in Exhibit 2.1, most Southwest LRT construction change orders from March 2019 through October 2022 increased the amount the Metropolitan Council paid to its civil construction contractor.

### Exhibit 2.1

#### Civil Construction Change Orders, March 2019 to October 2022

Effect on Project Costs	Number	Total Financial Impact
Increased	550	\$224,093,394
Decreased	44	(4,641,363)
None	64	0
Total	658	\$219,452,031

Source: Office of the Legislative Auditor, analysis of Metropolitan Council data.

<sup>1</sup> This report focuses on the period since construction began on the Southwest LRT project in 2019. As a result, this chapter reviews change orders to the civil construction contract with Metropolitan Council’s contractor, Lunda/C.S. McCrossan Joint Venture. The systems construction work on the project, which covers the electrically powered project components, was still largely incomplete at the time this report was written.

In this chapter, we first provide an overview of the Metropolitan Council's standard change order process for Southwest LRT construction change orders, in which the Council negotiates the terms of the change order before the contractor begins the change work. We describe the extent to which the Council has ensured that the civil construction contractor fulfilled requirements related to the change order process established in its contract. Lastly, we discuss the Council's management of certain change orders that follow alternative processes, where work proceeds before the change order is finalized.

## Standard Change Order Process

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The Metropolitan Council has approved change orders on the Southwest LRT project for a variety of reasons, including to add elements to the project, to correct design errors or omissions, to address site conditions that were unknown at the time of project design, and to correct construction errors.

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**The Metropolitan Council's standard process for addressing change orders involves negotiating agreements with its contractors before the work begins.**

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Metropolitan Council policy outlines a standard process for change orders to follow, from an initial request for a change through the change order's review and approval. Under this process, described in this section and Exhibit 2.2, the Council and contractor negotiate agreements for change orders before the contractor starts the change work. The agreements may set new costs and timelines, which the contractor must adhere to like any other contractual obligation.

**Identifying a Change:** Changes begin as requests from the Metropolitan Council or the construction contractor when either identifies work that differs from the work defined in the original contract.

**Determining if a Change Request Will Become a Change Order:** Not all change requests become change orders. Metropolitan Council staff review each change request from the contractor to determine whether the proposed change is needed, and to confirm that the request is actually a change and was not part of the contractor's original obligations.<sup>2</sup> As of September 2022, the Southwest LRT construction contractor had made 788 change requests; the Metropolitan Council agreed that 420 of these requests had merit and advanced them to the change order process. Change requests that originate from Council staff undergo a different, less formal review process.

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<sup>2</sup> For example, the contractor requested one change because it claimed that the presence of an apartment building under construction near a work site in Eden Prairie would require it to make changes to its work to mitigate potential vibration impacts. Metropolitan Council staff rejected this request because information about the new building had been included in materials provided when the contractor was bidding on the project; therefore, the request did not constitute a change.



**Defining the Change Order Scope:** Metropolitan Council staff specify the elements of the change order and help staff, contractors, and the estimating consultant understand the scope of the change. Staff also gather any information needed to estimate cost and schedule impacts. The Council's design consultant, AECOM Technical Services, Inc., may revise construction plans and specifications, if necessary.

**Estimating Change Order Costs:** Metropolitan Council staff obtain two estimates for the change order. The construction contractor must develop a **Change Proposal** stating what the contractor believes it should be paid to adopt the change order. Meanwhile, the Council arranges for the preparation of an **Independent Cost Estimate (ICE)**, either by a cost estimating consultant or Council staff. The ICE provides an estimate of the contractor's costs, based on industry rates and other information. These two estimates generally break out the costs of the work into labor, materials, and equipment costs, among other elements.

**Estimating Change Order Delays:** If the construction contractor expects that implementing the change order will extend the project's schedule, it must also develop a **Time Impact Analysis**, which it submits separately from the Change Proposal.

**Reviewing Estimates:** Metropolitan Council staff conduct a **cost analysis** to review elements of the ICE and Change Proposal, such as quantities of labor and materials, and to prepare the Council's negotiation position. Council staff also review the Time Impact Analysis, if applicable.

**Negotiating with the Construction Contractor:** The Metropolitan Council and the construction contractor negotiate the terms of the change order. Negotiations may involve the contractor revising the Change Proposal one or more times if, for example, Council staff believe that items included in the proposal are not necessary or could be accomplished using fewer resources.

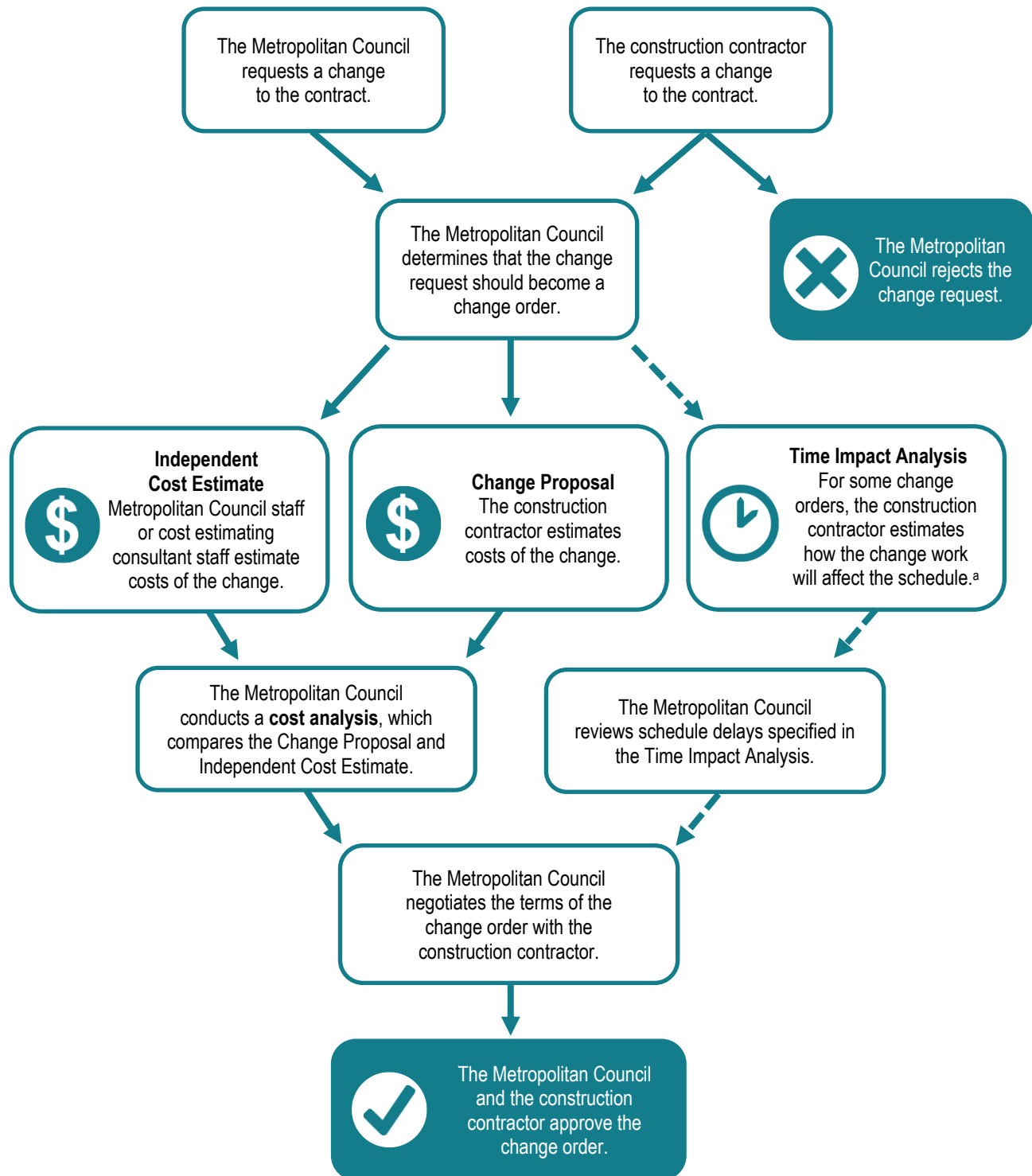
**Final Approval:** Once negotiations conclude, both the Metropolitan Council and the construction contractor formally accept the change order, and it becomes a modification to the construction contract. The Council requires that change orders with an estimated value of \$350,000 or more be reviewed and approved by Southwest LRT's Executive Change Control Board (ECCB), and change orders over \$2,500,000 be approved by the Metropolitan Council's governing body.<sup>3</sup>

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<sup>3</sup> The ECCB is a board composed of members from the Metropolitan Council's governing body, Hennepin County commissioners, and one nonvoting representative from Ramsey County. In addition to change orders over \$350,000, the ECCB reviews and approves change orders that will delay the final project completion date.

## Exhibit 2.2

## Standard Process for Southwest LRT Construction Change Orders



<sup>a</sup> The contractor is only required to submit a Time Impact Analysis if the change will extend the schedule and the contractor believes that it is not responsible for the delay.

## Enforcing Compliance with Contract Requirements

Requirements regarding the standard change order process are established in the Metropolitan Council's contract with its civil construction contractor. For example, the contract requires the contractor to submit a series of documents by certain deadlines, as shown in Exhibit 2.3. Under the contract, the Metropolitan Council pays the contractor both for the direct construction costs and for indirect overhead and administrative costs; the Council has stated that these indirect costs include the contractor's expenses to prepare Change Proposals and Time Impact Analyses.

### Exhibit 2.3

#### Required Contractor Submissions for Change Orders

Document	Submission Deadline
Technical and accounting information (if contractor requested the change)	Within 30 days of making the change request.
Change Proposal	Within 30 days of request for Change Proposal from the Metropolitan Council.
Time Impact Analysis	Within 30 days of Council's request for a Change Proposal.

Notes: The Metropolitan Council lengthened the submission deadlines for technical and accounting information and Change Proposals from 20 to 30 days in October 2020. Submission deadlines may be extended if the Council grants an extension.

Source: Office of the Legislative Auditor, analysis of Metropolitan Council contracts and change orders.

## Contractor's Proposed Costs

As described above, the Metropolitan Council's change order process depends on receiving certain key documents from its contractor, such as the Change Proposal, to assess how the change will affect the contractor's costs and schedule.



### Change Proposal

A Change Proposal estimates the amount the Metropolitan Council should pay the contractor as a result of the change order, whether that is more, less, or the same as the original compensation. The contractor must develop a Change Proposal when requested by the Metropolitan Council.

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**The Metropolitan Council did not hold the civil construction contractor accountable for requirements in the contract to estimate change order costs.**

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The civil construction contractor did not submit a Change Proposal for

**30%**

of approved change orders.

The Metropolitan Council directed the construction contractor to prepare Change Proposals for 646 change orders from 2019 through October 2022. According to the Council's records, the contractor submitted Change Proposals to the Council's documentation system for only 455 of the change orders; in other words, the contractor provided the contractually required document only 70 percent of the time.<sup>4</sup> Of the 455 Change Proposals, the contractor submitted only 19 percent within the 30 days required by the contract.<sup>5</sup>

In our more detailed examinations of a sample of individual change orders, the Metropolitan Council made limited efforts to enforce compliance with contractual change order obligations. We conducted 16 case studies of a mixture of change orders and change requests, including change orders fully approved, change orders in progress, change requests that became change orders, and rejected change requests.<sup>6</sup> The civil construction contractor frequently requested that the Council extend deadlines for providing the required documents for the change orders and change requests, claiming that it needed extra time because of the high volume of change orders on the project.<sup>7</sup> The Metropolitan Council did not grant deadline extensions in most cases, and sometimes instructed the contractor to provide the required documents. However, the Council's requests that the contractor comply with its requirements did not appear to have much effect. In 8 of the 11 cases we reviewed in which the Council directed the contractor to submit a Change Proposal, the contractor took at least four additional months to provide the proposal or never provided one.<sup>8</sup> Of these eight, the contractor did not provide the proposal for four of the change orders until at least nine months following the contractual deadlines.

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<sup>4</sup> This percentage refers to approved change orders where the Metropolitan Council had directed the contractor to submit a Change Proposal. The Council does not seek contractor Change Proposals for every construction change order; for example, unilateral change orders do not require a contractor Change Proposal. The Council sets the price of unilateral change orders without involvement from the contractor and directs the contractor to proceed with the work. The Metropolitan Council has rarely issued unilateral change orders for Southwest LRT construction.

<sup>5</sup> Of the 368 Change Proposals submitted after the contractual deadline, 24 percent were submitted within 30 days of the deadline, and another 12 percent were submitted between 31 and 60 days after the deadline. The civil construction contractor submitted the remaining 64 percent of Change Proposals 61 days or more after the deadline.

<sup>6</sup> We selected our case studies based on suggestions from Metropolitan Council staff, contractors, and legislators. Multiple change orders that we reviewed were particularly costly and involved major delays on the project, including changes related to the corridor protection barrier, the Eden Prairie Town Center Station, and the Kenilworth LRT tunnel secant wall. We describe these changes in the Appendix.

<sup>7</sup> In its communications with the Metropolitan Council, the civil construction contractor claimed that both its own staff and the Council's had been unable to keep up with change orders on the project. For example, sometimes the contractor made requests for clarification about the nature of a change in order to prepare the required Change Proposal. If Metropolitan Council staff did not provide a timely response to these requests, the contractor may have felt unable to complete a proposal.

<sup>8</sup> The civil construction contractor did not submit a Change Proposal when directed to do so for one of the cases we reviewed.

In the change orders we reviewed, the Metropolitan Council did not take other actions to enforce compliance. In some cases, as stated in the contract, the Council may delay or reduce payments to the contractor for a “failure...to comply strictly with the contract documents.”<sup>9</sup> For example, the Council could withhold requested payment for a period of time until the contractor complies with its contractual requirement to submit change order cost information. Alternatively, the Council could permanently deduct payment from the contractor if it determines the contractor did not meet the terms of its contract.<sup>10</sup> The Council did not pursue either of these options. Council representatives told us they do not believe this contract language can be used to penalize the contractor for failure to submit required change order documents. If not, it is unclear what authority the Council has to induce compliance.

Instead of enforcing the contract, the Metropolitan Council attempted to work around the lack of Change Proposals. In some instances, the Council advanced change work without having a fully negotiated change order in place; we discuss this type of change order later in the chapter. However, the Council allowed many change orders lacking Change Proposals to simply sit unresolved for months or even years, gradually accumulating a backlog of more than 100 such change orders. The Council ultimately resolved these change orders by introducing a new process; it tied them together in a single package and entered into a settlement agreement with the construction contractor in March 2022 without ever having received contractor Change Proposals. (We discuss the settlement agreement in more detail below.)

## Schedule Delays Associated with Change Orders

Even though the Metropolitan Council negotiated and approved hundreds of construction change orders prior to the 2022 settlement agreement, the Council frequently did not address potential schedule delays associated with these changes.

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**In six of nine cases we reviewed, the Metropolitan Council settled change order costs while allowing potential schedule delays to remain unresolved.**

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The Metropolitan Council and its contractor typically conclude the change order process by reaching an agreement and signing the change order, signifying that the change is “closed” and that both sides agree with the resulting modification to the contract. The Council’s Southwest LRT change order procedure assumes that staff will negotiate change order costs and delays simultaneously.<sup>11</sup> Similarly, federal law suggests that government entities administering contracts should resolve all costs and delays related to

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<sup>9</sup> Green Line LRT Extension (“Southwest LRT”) Civil Construction (Rebid), Project Number 61001, Metropolitan Council Contract Number 15P307A, Article 14.6.

<sup>10</sup> To secure a payment deduction, the Metropolitan Council must negotiate a change order with the construction contractor. We discuss the Council’s decision not to pursue this course of action in Chapter 5.

<sup>11</sup> Metropolitan Council, *Change Orders Procedure*, revised August 2019, 8.

a change order during the negotiation process.<sup>12</sup> This practice allows project managers—and funders—to understand the full impact of each change order at the time decisions are made and avoid re-entering negotiations at a later date for the same element of work.

However, six of the nine “closed” change orders we reviewed contained statements that left open the possibility for the construction contractor to continue seeking schedule extensions and additional delay-related costs in the future.<sup>13</sup> For example, one change



### Time Impact Analysis

A Time Impact Analysis demonstrates the extent to which the change will affect the project schedule, and how the contractor will incorporate the change work into the schedule. The contractor must develop a Time Impact Analysis if the change will extend the schedule and the contractor believes that it is not responsible for the delay.

order involving the removal and replacement of unsuitable soils included language reserving the right to later request a time extension for the extra work, quantified using a Time Impact Analysis, along with costs related to the extension. In four of the change orders we reviewed in detail, statements leaving open the possibility for the contractor to reopen the change were included in the Metropolitan Council’s final documentation, but did not appear in the written description of the change orders presented publicly for approval to bodies like the ECCB or the Metropolitan Council’s governing body. Although we did not attempt to comprehensively tabulate how often closed change orders included these potential schedule

claims, we encountered similar language in over 50 additional change orders.

The contractor’s request to leave open the possibility of additional schedule delays and related costs—and the Metropolitan Council’s agreement to do so—was rooted in the failure of both sides to fully agree on a construction schedule. As we explained in our March 2023 evaluation report, the Metropolitan Council did not enforce the contractor’s responsibility to provide acceptable project schedules in 2019 and 2020, and moved forward with construction despite the lack of a fully approved civil construction schedule.<sup>14</sup> Calculating schedule delays is not possible without an agreed upon underlying schedule.

## Resolution of Outstanding Claims

By the end of 2021, the Metropolitan Council was in a position where (1) it had left decisions about potential schedule delays unresolved for many “closed” change orders, and (2) it could not resolve a large number of change orders using its standard process without the required documents from the contractor. The Council worked with the construction contractor to address these issues, among others, through the 2022 settlement agreement.

<sup>12</sup> 48 *CFR*, sec. 43.204(c) (2021). This regulation is a recommendation; it is not binding.

<sup>13</sup> Other changes we reviewed but did not consider to be “closed” included two change orders that were open until the Metropolitan Council’s settlement agreement with the civil construction contractor; we discuss this process in the next section.

<sup>14</sup> Office of the Legislative Auditor, Program Evaluation Division, *Southwest Light Rail Transit Construction: Metropolitan Council Decision Making* (St. Paul, 2023), 27-29.

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**The Metropolitan Council used its comprehensive settlement agreement with the civil construction contractor to resolve change orders with outstanding potential schedule claims or missing contractor Change Proposals.**

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As described above, the Metropolitan Council regularly settled the direct costs of change orders without resolving potential schedule delays (and the costs associated with those delays). The March 2022 settlement agreement eventually resolved the delays and associated costs for these change orders that were previously “closed.” The agreement set a new construction schedule that extended the original civil construction schedule 34½ months. Additionally, the agreement ended the possibility of the contractor requesting further delays for change orders included in the agreement.

It is unclear whether the Metropolitan Council ultimately paid more or less to resolve the change-order-related delays through the settlement agreement than it would have otherwise. We cannot confidently state what would have happened if the Council had negotiated delays simultaneously with costs during the initial change order negotiations.

The settlement agreement also resolved change order costs for the backlog of change orders lacking Change Proposals. For a small number of high-cost change orders, the agreement directed the contractor to develop a Change Proposal; the Metropolitan Council and contractor would negotiate these changes individually using the standard change order process. However, for the vast majority of the change orders, the contractor did not have to provide a Change Proposal. Instead, the Council and an accounting consultant analyzed how much the Council had historically paid for other low-cost change orders relative to the Independent Cost Estimates and created a formula to apply to the outstanding change orders. The Council negotiated with the construction contractor using the numbers produced by this formula, and eventually finalized change order costs for 128 change orders that were lacking Change Proposals.<sup>15</sup>

**Negotiated Costs for Change Orders Lacking Change Proposals**

In lieu of using the contractor’s Change Proposal, the Metropolitan Council applied a formula to the Independent Cost Estimates to collectively determine final change order costs for 128 construction change orders that were lacking Change Proposals as of December 31, 2021.

Total cost of Independent Cost Estimates	\$2,350,776
Multiplied by Metropolitan Council formula	<u>128.1%</u>
Total negotiated cost of change orders	\$3,010,591

Source: Office of the Legislative Auditor, analysis of Metropolitan Council documents.

As with the resolution of change order delays discussed above, it is difficult to determine whether the settlement agreement’s approach to change orders lacking Change Proposals ultimately benefited the Metropolitan Council. Resolving change orders through the standard process was costly and time-consuming, so addressing the change orders collectively might have saved the Council and contractor staff time and expenses. However, the Council also incurred additional costs in order to resolve these

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<sup>15</sup> The Metropolitan Council and civil construction contractor approved the agreement resolving these 128 change orders (along with 55 other open change orders that did have a Change Proposal) in May 2022. The Metropolitan Council resolved an additional 43 change orders lacking Change Proposals as a group in September 2022, but these were not part of the settlement agreement.

change orders through the settlement agreement, such as the costs of retaining a legal consultant and an accounting consultant for negotiations.

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## RECOMMENDATIONS

**The Metropolitan Council should:**

- **Require its contractors to meet contractual obligations related to change orders.**
  - **Ensure contracts include adequate language to hold contractors accountable for change order requirements.**
  - **Negotiate change order costs and schedule delays in a timely manner.**
  - **Inform change order approval bodies when changes include language that leaves open the possibility of additional delays and related costs.**
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The Metropolitan Council should more rigorously enforce the terms of its contracts. In our view, the eventual solution reached through the settlement agreement—to essentially disregard the missing documentation for nearly all of the change orders—does not mitigate the Metropolitan Council’s failure to hold its contractor to the terms of its contract for the first three years of construction. Addressing change orders was one of the contractor’s key responsibilities and is an explicit component of the Southwest LRT contract.

Some Metropolitan Council staff and consultants suggested that the original contract with the construction contractor did not include adequate language to address the number and scale of changes to the project schedule, and that the settlement agreement remedied these deficiencies. In particular, they told us that a new alternative dispute resolution process in the settlement agreement would provide the Council additional tools for resolving future disputes, including change orders. While we were unable to assess these claims, we encourage the Metropolitan Council to consider whether introducing language from the settlement agreement into future contracts would permit staff to more readily hold contractors to the terms of their agreements.

We also recommend that the Metropolitan Council resolve schedule delays before approving change orders as a standard practice, and allow the separation of cost decisions and schedule decisions only in rare circumstances. Not only would this practice conform with the Council’s existing procedure, but it also would allow the Council and project stakeholders to better understand the full costs of change orders—both construction costs and delay costs—and track more accurately how quickly the project budget is being depleted as change orders are approved.



Lastly, when presenting change orders for approval to bodies like the ECCB and the Metropolitan Council's governing body—a requirement for high-cost changes—the Council should explicitly state whether the Council has agreed to let the contractor “reserve the right” to seek more payment in the future for additional delays associated with the change. These bodies should be aware that the change orders they are approving include language that leaves the Council at risk for additional unspecified cost increases.

## Alternative Change Order Processes

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Some change orders are not negotiated before the work occurs. For these change orders, the Metropolitan Council directs the construction contractor to proceed with change work before formally approving a change order. The Council has used two related, but different, processes on the Southwest LRT project to address such change orders, described below and shown in Exhibit 2.4.<sup>16</sup> These processes are defined in the Council's contract with the civil construction contractor but involve performing some or all of the change work before the change is approved.

- (1) **Two-part Change Order:** The first part of a two-part change order authorizes the construction contractor to proceed with change work up to a certain dollar amount. This cost limit may be prepared using preliminary estimates before the full scope of the work is known. The Metropolitan Council and the construction contractor then continue discussions while the work proceeds; the contractor must notify the Council if its expenses are approaching the cost limit set by the first part of the change order or if it determines the cost limit will be insufficient to cover its costs. The second part of the change order contains the final change order costs.
- (2) **Change Request with Work Authorized to Proceed:** The Metropolitan Council may direct the contractor to move forward with change work that originated as a change request from the contractor, before finalizing the change order for the request. A Metropolitan Council staff person said this process is intended to mitigate delays, so that the contractor does not simply stop work while awaiting a resolution to a change request. These change orders do not include the cost limits found in two-part change orders.

In both scenarios, the civil construction contractor is responsible for tracking its actual day-to-day spending on the work. For some change orders, Metropolitan Council staff compare the contractor's recorded costs with the Council's own records and verify the contractor's costs; this process is called price verification. However, for other changes, the Council does not use the tracked costs but instead follows a path similar to the standard change order process and negotiates with the contractor to settle on a lump-sum cost for the entire change order.

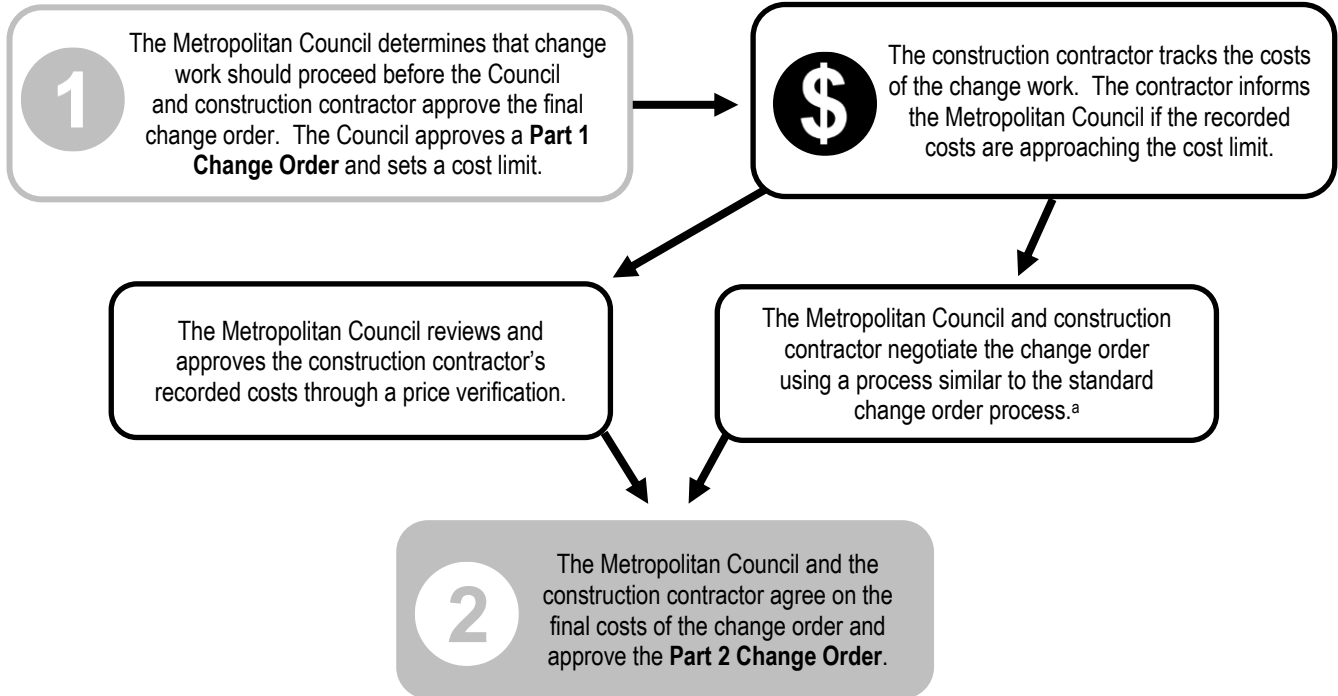
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<sup>16</sup> Metropolitan Council policy does not establish which process should be utilized for a given change order.

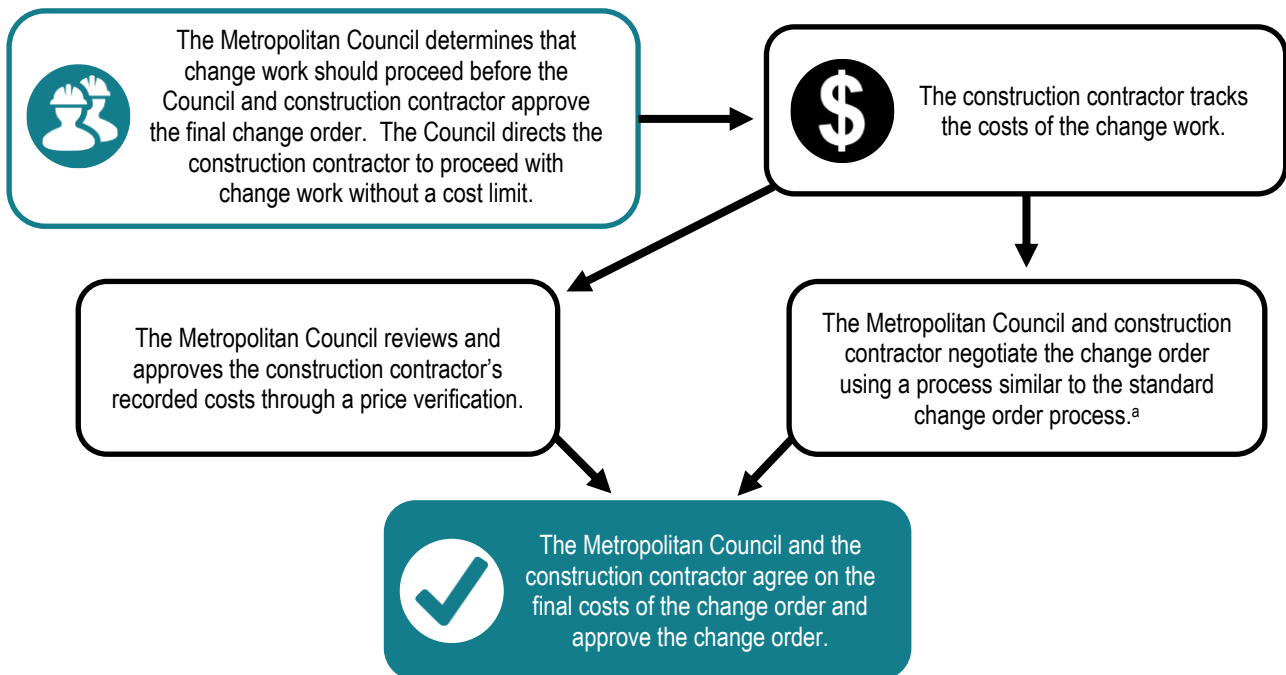
## Exhibit 2.4

## Alternative Change Order Processes

## Two-Part Change Order



## Change Request with Work Authorized to Proceed



<sup>a</sup> The standard change order process involves the Council and contractor preparing estimates for change order costs and delays, which are then reviewed prior to entering into negotiations.

According to the Federal Transit Administration’s (FTA’s) Best Practices Procurement Manual:

It is generally not a best practice to issue change orders before the price and schedule for the changed work is negotiated and agreed upon. In construction projects, however, proceeding with work prior to agreement may be necessary to avoid delay. In such cases, records of time and material must be kept, and a price should be agreed upon as soon as practicable after the contractor begins the changed work.<sup>17</sup>

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**The Metropolitan Council used alternative change order processes in about 20 percent of change orders, allowing the contractor to begin work before the Council and the contractor agreed to final costs or schedule delays.**

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From the beginning of construction to October 2022, 138 of the 658 approved construction change orders were either a two-part change order or a change request with work authorized to proceed, as shown in Exhibit 2.5.<sup>18</sup> Of these, 69 (10 percent of all change orders) involved the contractor submitting its costs for work already completed.<sup>19</sup>

#### Exhibit 2.5

#### Types of Change Orders on Southwest LRT Construction

Change Order Type	Number of Change Orders	Percentage of All Change Orders	Total Financial Impact
Standard Change Order	497	76%	\$162,375,688
Alternative Change Order	138	21	54,425,563
<i>Two-Part Change Order</i>	<i>92</i>	<i>14</i>	<i>49,529,160</i>
<i>Change Request with Work     Authorized to Proceed</i>	<i>46</i>	<i>7</i>	<i>4,896,403</i>
Unilateral Change Order	<u>23</u>	<u>4</u>	<u>2,650,780</u>
Total	658	100%	<b>\$219,452,031</b>

Notes: “Standard change order” describes change orders negotiated with the contractor before the change work began, while “alternative change order” describes change orders where some or all work was done before the Metropolitan Council determined the final change order costs. Some of these change orders were ultimately resolved through the Council’s settlement agreement with the civil construction contractor in March 2022.

Source: Office of the Legislative Auditor, analysis of Metropolitan Council data.

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<sup>17</sup> Federal Transit Administration, *Best Practices Procurement & Lessons Learned Manual*, FTA Report No. 0105 (Washington, DC, 2016), 120.

<sup>18</sup> The Metropolitan Council’s documentation system does not consistently identify the change order types we describe in this section. We used various means to identify all alternative and unilateral change orders, and then categorized all remaining change orders as “standard change orders” by default. Counts of alternative change orders in this section likely underestimate the amount of change work occurring before a finalized change order; other means of determining alternative change orders we considered—but did not use—would have resulted in more change orders in this category.

<sup>19</sup> The 69 change orders based on the contractor’s reported costs of the work are a mixture of two-part change orders and change requests with work authorized to proceed. In Exhibit 2.5, 23 of the 92 two-part change orders are based on the contractor’s reported costs, and all 46 change requests with work authorized to proceed are based on reported costs.

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**When using alternative change order processes, the Metropolitan Council has not adequately limited the Council's risk for future cost increases.**

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Under both alternative processes, the Metropolitan Council moved forward with changes without any limit on the total amount that the Council would spend on the work. Twenty-three of the 69 construction change orders with the final price based on the contractor's reported costs were two-part change orders, where the Council set a spending limit for the work authorized in the first part of the change order. However, in many cases, the final costs of the change order far surpassed the limit set by the first part of the change order. For example, one change order for installing a temporary construction fence and then relocating the original permanent fencing was addressed with a two-part change order, in which the Part 1 change order set a cost limit of \$33,000. However, the Council eventually agreed to a final change order cost of \$85,550 when it approved the Part 2 change order. In such instances, the Council proceeded with change work without a clear understanding of the impact that these change orders would have on the project budget.

The Metropolitan Council's willingness to increase the amount it paid when negotiating the second part of two-part change orders may derive from the way these are structured for the Southwest LRT project. Southwest LRT procedure and the Council's contract with the civil construction contractor do not require the full scope of a change to be included in the first part of a two-part change order. This approach may make it more likely that the total costs of the change exceeds the cost limit established in the first part of a two-part change order, which is not consistent with FTA best practice.

[W]hen time will not permit the negotiation of the change prior to issuance, FTA recommends that the recipient obtain a "not-to-exceed" price from the contractor prior to the beginning of work. A bilateral contract Change Order could then be issued defining the changed work, with a maximum/ceiling price that will be negotiated at a later date, but *downward only*.<sup>20</sup>

For change orders processed as change requests with work authorized to proceed, there was no limit on the contractor's spending. Because the Metropolitan Council authorized the contractor to proceed with change work without a preset cost limit, the Council bore the risk if costs were higher than expected. While most of these change orders were relatively low-cost, some exceeded \$100,000.<sup>21</sup>

When the Metropolitan Council directed the construction contractor to proceed with change work before approving a change order, the contractor assembled its own record of the costs incurred doing this work. Council staff then verified the contractor's costs by reviewing time and material reports, observing construction work in the field, or

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<sup>20</sup> Federal Transit Administration, *Best Practices Procurement & Lessons Learned Manual*, 116 [emphasis added].

<sup>21</sup> The 46 change orders beginning as change requests with work authorized to proceed cost \$4,896,403; the highest cost of any individual change order in this category was \$3,671,583.

checking payroll records.<sup>22</sup> The Metropolitan Council's policies do not explain how Council staff should reconcile the contractor's recorded costs with the Council's own documentation, and we observed that the process varied from change order to change order. Some Metropolitan Council staff and consultants expressed concerns about the Council's process for verifying the contractor's recorded costs for change work that had already occurred.

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**For some change orders we reviewed, the Metropolitan Council paid the contractor even though it could not fully validate the contractor had incurred the costs it claimed.**

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In three cases we reviewed where the Metropolitan Council allowed the construction contractor to proceed with change work prior to an approved change order, Council staff identified discrepancies between their own documentation and the construction contractor's documentation due to omissions or inconsistencies in the recorded information of the two parties. At times, Council staff could not resolve these discrepancies and instead relied on the contractor's documentation. In addition to these change orders, we also reviewed other change orders with work done before the change order was executed. We observed conflicts in the documentation for a number of change orders that made it difficult to determine the correct payment owed to the contractor. In a few instances, the Council chose to negotiate an agreement with the contractor rather than pay the recorded costs. In others, the Council deferred to the contractor's records and agreed to pay the contractor its requested amount, whether that was more or less than what the Council's records substantiated.

Additionally, verification of recorded change order costs was more difficult when it did not occur soon after the change work. For two of the change orders we reviewed involving work in the Kenilworth LRT tunnel in Minneapolis, verifying the contractor's reported costs involved disentangling interrelated work that had occurred over a long period of time. A staff member involved in the review told us that it was particularly difficult to verify the earliest costs incurred because so much time had passed and the quality of the Metropolitan Council's earliest records was poor. In the end, the Council's review of the contractor's costs focused more on ensuring that costs were not duplicated across the two change orders and that the number of hours worked was reasonable, not that the amounts submitted were the true costs incurred for the work.

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## RECOMMENDATIONS

**The Metropolitan Council should:**

- **Make greater efforts to limit change work that occurs before the cost and schedule impacts are negotiated.**
  - **Improve its policies for managing change orders based on a contractor's reported costs.**
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<sup>22</sup> Time and material reports record work activities from a given work date at a specific location. These reports include a summary of the work done, hours worked (including overtime hours), hours during which different equipment was used, and quantities of materials.

We recommend the Metropolitan Council make greater efforts to limit the amount of change work that occurs before cost and schedule impacts are negotiated and change orders are approved. In cases where the Council believes that it is necessary to start change work before a change order is negotiated and approved, setting a limit for the costs of the work could minimize the Council's risk. The Council should be more diligent about setting appropriate cost limits that will cover the full costs of the change when issuing the first part of two-part change orders, and then enforcing those limits, as suggested by FTA best practices.

The Metropolitan Council should also institute a better system for tracking the costs of work completed prior to formally approving a change order. We recommend that the Metropolitan Council provide formal guidelines in its change order policy to address these types of change orders. At a minimum, such change orders should incorporate a written notification, both to internal inspection staff and to the contractor, to begin tracking actual costs from the moment that the Council directs the contractor to proceed with change work in the field. This guidance should also describe how inspection staff and the contractor should document these costs so that it is easier for Council staff to verify the contractor's reported costs.

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# Chapter 3: Change Order Cost Estimates and Negotiations

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As we described in Chapter 2, change order processes exist to ensure that changes introduced to a construction project are appropriately identified, scoped, managed, and priced. We also explained in that chapter that the Metropolitan Council's standard change order process for the Southwest Light Rail Transit (Southwest LRT) project involves cost and schedule negotiations between the Council and the construction contractor prior to implementation of the change order.<sup>1</sup>

In this chapter, we continue our examination of the Metropolitan Council's change order process. We explore how the Council has used Independent Cost Estimates (ICEs) developed separately from the contractor's Change Proposals. Then we discuss how the Council has reached final change order decisions through negotiations with the contractor.

## Key Findings in This Chapter

- The Metropolitan Council directed its cost estimating consultant to systematically increase its Independent Cost Estimates.
- The Metropolitan Council paid its civil construction contractor the price the contractor initially set for change orders about half of the time, including some instances when the Council's Independent Cost Estimates for the same change orders were significantly lower.
- For five of the change orders we reviewed, the Metropolitan Council agreed to pay the civil construction contractor what it requested with little or no explanation for its conclusion that the costs were reasonable.

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## Independent Cost Estimates

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When a government entity decides to change the work after the original bidding process is complete, it generally does so by negotiating directly with the existing contractor. Because the government entity cannot easily turn to a competitor to seek a better price, the existing contractor may have significant leverage in such negotiations. Independent Cost Estimates are one way for the government entity to obtain a fair value when paying for work that cannot be competitively bid.<sup>2</sup> By having someone other than the contractor analyze the work to be done and determine the market pricing for such work, the government entity can conduct negotiations with an understanding of appropriate pricing. Typically, an ICE is developed separately from the contractor's proposed change order costs; the ICE developer does not know the contractor's suggested pricing, and the contractor may not see the ICE when preparing its Change Proposal.

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<sup>1</sup> This report focuses on the period since construction began on the Southwest LRT project in 2019. As a result, this chapter reviews change orders to the contract with Metropolitan Council's civil construction contractor, Lunda/C.S. McCrossan Joint Venture.

<sup>2</sup> Although Southwest LRT procedure requires the use of an ICE as part of the cost analysis to determine that the contractor's Change Proposal is fair and reasonable, federal law states that an ICE is one of several ways that a project can conduct a cost analysis. 48 *CFR*, 15.404-1(c) (2021).

## Assessing Independent Cost Estimate Quality

Because the Metropolitan Council uses ICEs as a comparison point when negotiating the price it will pay its contractor for change orders, it is important that it have confidence in the quality of these estimates.

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**Early in the construction process, the Metropolitan Council lost trust in the Independent Cost Estimates produced by its primary cost estimating consultant.**

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### One Company, Two Roles

AECOM has held two different roles on the Southwest LRT project: (1) as designer and engineer and (2) as the primary cost estimator. In a 2022 peer review of Southwest LRT, the Minnesota Department of Transportation (MnDOT) observed that having the same consultant serve as project designer and cost estimator can present a conflict of interest. MnDOT does not allow this practice on its own projects, and the peer review recommended that the Metropolitan Council avoid having the same consultant serve as designer and cost estimator on light rail projects.<sup>5</sup>

The Metropolitan Council retained the same firm that had designed the Southwest LRT line to provide cost estimating services for change orders during the line's construction.<sup>3</sup> However, the Council and its cost estimating consultant have had a fraught relationship over its cost estimating role. As we described previously in an October 2021 memorandum, the Council has argued that the consultant's ICEs contained many missing or underestimated costs.<sup>4</sup> The Council has also stated that the cost estimating consultant's ICEs did not adequately consider conditions in the field encountered during construction.

Metropolitan Council staff made similar criticisms of the cost estimating consultant's ICEs in the individual change orders we reviewed. We conducted 16 case studies of a

mixture of change orders and change requests, including change orders fully approved, change orders in progress, change requests that became change orders, and rejected change requests.<sup>6</sup> Eight of the approved change orders we reviewed had an ICE prepared by the cost estimating consultant; the Council identified deficiencies in seven of the eight ICEs. For example, the Council said the ICEs did not account for

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<sup>3</sup> AECOM Technical Services, Inc. (AECOM) was the Metropolitan Council's primary cost estimating consultant from the beginning of construction through early 2023. The Council opened up bids for a cost estimator for the Southwest LRT project at the end of 2022. As of early June 2023, the Council was in the process of replacing AECOM with a new cost estimating consultant. Although the firm generated the majority of the ICEs for Southwest LRT civil construction, the Council also assigned its own staff to develop ICEs. Council staff developed about one of every four ICEs for finalized construction change orders from 2019 through mid-October 2022.

<sup>4</sup> The memorandum outlines the Metropolitan Council's and consultant's arguments regarding the role the Council should play in the consultant's ICEs and provides additional history regarding the dispute between the two parties. Joel Alter, Director of Special Reviews, Office of the Legislative Auditor, memorandum to Senator D. Scott Dibble and Representative Frank Hornstein, *Southwest Light Rail Project Costs and Management*, October 28, 2021.

<sup>5</sup> Minnesota Department of Transportation, Office of Construction and Innovative Contracting, "SWLRT MnDOT Peer Review Report" (St. Paul, December 30, 2022), 7.

<sup>6</sup> We selected the cases based on recommendations from Metropolitan Council staff, contractors, and legislators. We chose to include several change orders that were particularly costly and involved major delays. See the Appendix for a list of the change orders we reviewed. Less systematically, we also reviewed documentation from dozens of other change orders in the course of our research.



additional costs the contractor would incur due to delays to pause work for passing freight rail trains in some of the change orders we reviewed.<sup>7</sup>

In response to the deficiencies the Metropolitan Council identified in the ICEs, the Council sought two different types of adjustments to the cost estimating consultant's estimates. One type of adjustment responded to specific issues in the ICEs, such as by adding missing work components or revising quantities in the estimates, such as the number of work hours needed to achieve a task. The other type systematically adjusted the ICEs' total costs.

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### **The Metropolitan Council directed its cost estimating consultant to systematically increase its Independent Cost Estimates.**

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By early 2020, the Metropolitan Council had begun instructing the cost estimating consultant to systematically increase the costs in the ICEs the consultant prepared for change orders. Following its normal process, the cost estimating consultant first produced its original estimates of costs, based on industry rates, standards, and other information. Then, the consultant adjusted the estimates using methods prescribed by the Council (described further below).

The Council would then use the *adjusted* estimates in its cost analyses, comparing the adjusted ICEs to the contractor's Change Proposals.<sup>8</sup>



#### **Change Proposal**

A Change Proposal estimates the amount the Metropolitan Council should pay the contractor as a result of the change order, whether that is more, less, or the same as the original compensation. The contractor must develop a Change Proposal when requested by the Council.

At the Metropolitan Council's direction, the cost estimating consultant adjusted about 70 percent of the ICEs it prepared for civil construction change orders executed from the beginning of construction through mid-October 2022.<sup>9</sup> For most of these change orders, the adjusted ICE was 10 to 50 percent greater than the cost estimating consultant's original ICE. The adjustments frequently lessened the gap between the costs in the consultant's original ICE and the contractor's Change Proposal. Exhibit 3.1 compares the consultant's original ICE with the adjusted ICE following Council intervention for several individual change orders we reviewed.

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<sup>7</sup> About half of the Southwest LRT line is being built next to existing freight rail lines, and the Metropolitan Council's agreements with the freight railroad companies established limited timeframes during which construction work might impede the freight trains. Outside of these times, Southwest LRT contractors must pause their work to accommodate freight rail operations.

<sup>8</sup> Sometimes the Metropolitan Council used separate negotiation positions that it created in its cost analyses rather than the original ICEs or the adjusted ICEs. We describe negotiation positions in more detail later in this chapter.

<sup>9</sup> We obtained our count of adjusted ICEs by comparing the consultant's estimates with the last ICE amount entered in the Metropolitan Council's data system. In some instances, multiple ICE versions or other circumstances made comparisons inconclusive, so 70 percent may be an undercount. The cost estimating consultant did not prepare ICEs for every change order; the 70 percent figure represents about one-half of all change orders during this time period.

## Exhibit 3.1

## Comparisons of Change Order Independent Cost Estimates (ICEs)

Change Order	Original ICE	Adjusted ICE	Percentage Increase
Adding BNSF barrier protection wall	\$27,218,259	\$36,609,462	35%
Adding Eden Prairie Town Center Station	\$7,785,698	\$8,243,201	6%
Adding fencing to address gaps	\$25,782	\$34,620	34%
Modifying foundation for bridge pier	\$370,174	\$439,531	19%
Performing design work near Currie Building	\$5,805	\$7,988	38%
Relocating retaining walls near Glenwood Avenue	\$1,798,687	\$3,108,456	73%
Replacing sheet piles with secant wall in Kenilworth LRT tunnel	\$21,440,259	\$35,350,586	65%

Notes: The original ICE is the initial estimate prepared by the cost estimating consultant. The adjusted ICE is the estimate after the consultant applied the changes required by the Metropolitan Council, and the percentage increase shows the difference from the original to the adjusted ICE.

Source: Office of the Legislative Auditor, analysis of Metropolitan Council documents.

One example of a systematic adjustment that increased the ICEs was a different method for calculating the contractor's profit and overhead. The original contract between the Metropolitan Council and the civil construction contractor stated that profit and overhead would be based on negotiations between the Council and its construction contractor, with a fallback calculation method to be applied if an agreement was not reached.<sup>10</sup> Early in the project, the cost estimating consultant applied the fallback calculation method for profit and overhead in its ICEs. Following negotiations with the construction contractor in early 2020, the Council instead directed the consultant to adjust the ICEs by using a new, higher percentage for profit and overhead. According to a Minnesota Department of Transportation (MnDOT) Peer Review of the Southwest LRT, "the decision to establish a fixed mark-up for change orders is a sensible one. It provides a streamlined approach to change orders and helps limit the amount of negotiation required for each change order."<sup>11</sup>

Other systematic ICE changes required by the Metropolitan Council, however, seemed less "sensible." For example, many of the adjusted ICEs included a new line item increasing the estimate to account for the contractor's use of Disadvantaged Business Enterprise (DBE) subcontractors.<sup>12</sup> This line item increased the cost estimates by 8 percent, prior to adding other factors like the percentage for profit and overhead described above and as shown in the example in Exhibit 3.2. However, the DBE line item was added to ICEs regardless of whether the civil construction contractor planned to subcontract with a DBE firm to perform the work. All eight of the finalized change orders we reviewed with an adjusted ICE included this 8 percent DBE allowance. However, in three of the eight

<sup>10</sup> The fallback calculation method set maximum percentages for profit and overhead applied to different costs in the change order, ranging from 5 percent for equipment and material costs to 15 percent for labor costs.

<sup>11</sup> Minnesota Department of Transportation, "SWLRT MnDOT Peer Review Report," 4.

<sup>12</sup> A Disadvantaged Business Enterprise is a small business that is majority owned and operated by individuals who are both socially and economically disadvantaged. 49 *CFR*, Subtitle A, sec. 26.5 (2021).

change orders, the Council's documentation showed no evidence that the contractor would be subcontracting with a DBE firm and the Council did not adjust its ICEs or negotiation positions to remove the DBE allowance.<sup>13</sup>

Another systematic change to the ICEs directed by the Metropolitan Council involved credits to the contractor for work that was cancelled as a result of the change. Part of the cost estimator's process for generating ICEs was to calculate the amount the Council would save for work that would no longer be performed or elements that would no longer be built. (If the change order replaced the removed elements with other work, the cost estimate could still represent a net increased payment to the contractor.) In such circumstances, the Council directed the cost estimating consultant to price equipment that the contractor would no longer need at 50 percent of the original estimate. In other words, if the civil construction contractor was originally supposed to use its equipment for two hours at the cost of \$100 but the change order removed this work, the ICE would show that the Council should pay \$50 to the contractor for the (non)use of the equipment.

### Exhibit 3.2

#### Metropolitan Council Adjustments to the AECOM Independent Cost Estimate (ICE) for Change Order Modifying Foundation for a Bridge Pier

	Original ICE by Cost Estimating Consultant	ICE with Metropolitan Council Adjustments
Labor		
Added work	\$ 78,813	\$ 78,813
Subtracted work	(7,206)	(7,206)
Overhead and profit (15%)	10,741	–
Equipment		
Added work	95,654	95,654
Subtracted work	(1,650)	(1,650)
Credit for ½ of subtracted equipment costs	–	825
Materials		
Added work	148,814	148,814
Subtracted work	(9,345)	(9,345)
Overhead and profit (5%)	6,973	–
Subcontracting		
Added work	21,753	21,753
Subtracted work	–	–
Overhead and profit (5%)	1,088	–
Insurance/bonds (2%)	6,913	–
Additional markup if subcontractor does all work (5%)	17,627	–
Disadvantaged Business Enterprise allowance (8%)	–	29,685
Overhead and profit (23%)		
23% markup applied to all amounts, including credit for subtracted equipment and DBE allowance.	–	82,189
<b>Total</b>	<b>\$370,174</b>	<b>\$439,531</b>

Source: Office of the Legislative Auditor, review of Metropolitan Council documents.

<sup>13</sup> In two of the three change orders, the Metropolitan Council was aware that there was no DBE subcontractor included in the civil construction contractor's Change Proposal and did not adjust the ICE or negotiation position. In the remaining case, the Council never received a Change Proposal indicating the contractor would use a DBE firm for the change work.

Despite requiring adjustments to the cost estimating consultant's ICEs, the Metropolitan Council frequently disregarded the ICEs and created new "negotiation positions" for its discussion of change order costs with the contractor. Of the 358 change orders with an

#### Change Order Cost Estimates and Final Cost Example

The Metropolitan Council approved a change order in 2021 to modify retaining wall drainage. The Council directed changes to the original Independent Cost Estimate (ICE) that increased it by almost \$1,000. The Council then used a negotiation position almost three times the cost of the original ICE.

Document	Estimated Costs
Original ICE	\$ 5,294
Adjusted ICE	\$ 6,224
Change Proposal	\$14,219
Negotiation position	\$14,792
Final change cost	\$14,219

Source: Office of the Legislative Auditor, analysis of Metropolitan Council documents.

adjusted ICE from the start of construction through mid-October 2022, the Council developed a separate negotiation position for 245 of them. In the vast majority of these cases, the negotiation position exceeded the adjusted ICE (and therefore also the original ICE), as shown in the example in the box at left. The Council also developed separate negotiation positions for 98 change orders that did not have adjusted ICEs recorded in the Council's data system. These negotiation positions were also frequently more similar to the civil construction contractor's Change Proposals than the ICEs.<sup>14</sup>

Four individual cases we reviewed involved a new negotiation position, though the Metropolitan Council did not develop all four the same way. In one case we reviewed, the Council simply applied a formula to the existing ICE in order to develop the negotiation position.<sup>15</sup> In two other cases, the Council put the quantities from the cost estimating consultant's ICEs and the contractor's Change Proposals side-by-side in a new spreadsheet. The Council then made

edits that deleted certain quantities from the ICEs and replaced them with quantities close to or matching those from the Change Proposals. In one of these cases, the Council demonstrated that it had separately validated the quantities from the Change Proposal before generating the negotiation position; in the other, the Council had not. In a final case, the Council developed ranges of costs for items and site conditions the ICE did not contain but the contractor's Change Proposal did, and added these to the cost estimating consultant's adjusted ICE to create a negotiation range for the change order.

## RECOMMENDATIONS

**The Metropolitan Council should:**

- **Hold its cost estimating consultant accountable for delivering acceptable estimates.**
- **Consider changing its cost estimation policies and contracts.**

<sup>14</sup> This statement applies to nonzero cost change orders with both an ICE and a Change Proposal; as we described in Chapter 2, when the Metropolitan Council directed the civil construction contractor to prepare a Change Proposal, the contractor only did so for 70 percent of approved change orders.

<sup>15</sup> This change order was included in the Metropolitan Council's settlement agreement with the civil construction contractor and was negotiated in bulk with 182 other change orders; we describe this process in more detail in Chapter 2. Of the 343 change orders with a negotiation position, 186 negotiation positions were developed for change orders included in the Council's settlement agreement with the civil construction contractor.

The Metropolitan Council's solution to the problem of deficient ICEs on the Southwest LRT project was to require systematic changes to these estimates. We disagree with this approach. We believe inadequate ICEs should have been corrected on a case-by-case basis, not accepted and then increased through across-the-board adjustments. We also question the practice of increasing cost estimates to pay the contractor for subcontractors it did not hire and equipment it did not use, and then including those amounts in the base used to calculate the contractor's profit and overhead.

More broadly, the Metropolitan Council's finding that the cost estimating consultant's ICEs were consistently incomplete or too low should have led the Council to take more direct steps to require the consultant to improve the estimates. Alternatively, the Council could have cancelled the cost estimation portion of its contract with the consultant and rebid the independent cost estimation work.<sup>16</sup> We believe it was a misuse of public resources for the Council to spend years paying for work that it then dismissed or disregarded.

In addition, the Metropolitan Council should review and revise its policies and contractual agreements regarding independent cost estimating in order to avoid some of the challenges encountered on the Southwest LRT project. MnDOT made a number of recommendations in its 2022 peer review of the Southwest LRT project, and our recommendations are compatible with MnDOT's recommendations.<sup>17</sup> MnDOT recommended that the Metropolitan Council: (1) establish a fixed percentage for profit and overhead for change orders; (2) in advance, determine the price per unit for more project components so that change order estimates can be based on competitively priced tasks and supplies; and (3) direct cost estimators to routinely visit work sites to observe on-the-ground logistical constraints. In addition, as noted above, MnDOT recommended that the Council avoid using the same engineering firm to conduct both project design and independent cost estimation. The Council's Deputy General Manager for Capital Programs has stated that the Council is committed to implementing MnDOT's recommendations from the MnDOT peer review on future transitway projects.

## Negotiating Final Change Order Costs

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As we described above, an ICE is a tool the Metropolitan Council can use to enable it to obtain a fair value for the money it is spending. The Council compares change order ICEs to the contractor's Change Proposals in lieu of receiving competitive bids for the same work. An ICE that accurately prices what the work should cost in a competitive environment can be useful for examining the contractor's proposed pricing and helping the Council determine a fair price.

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<sup>16</sup> We acknowledge that cancelling the cost estimation portion of the contract while maintaining the consultant's design services would have been complex. If the Metropolitan Council adopts the MnDOT recommendations described in the next paragraph, such services would be provided through separate contracts. The Council opened up bids for a new cost estimating consultant in November 2022, almost four years into Southwest LRT construction.

<sup>17</sup> Minnesota Department of Transportation, "SWLRT MnDOT Peer Review Report."

In many instances, the Metropolitan Council appeared to approach change order negotiations as if the ICE was an obstacle to overcome instead of a tool to help it reach a fair price. As we explained in the previous section, the Council often used negotiation positions in its negotiations with the civil construction contractor that were significantly higher than the ICEs. That is, the Council's negotiation positions were higher than both the original ICEs developed by the cost estimating consultant (which were later adjusted at the Council's direction) and the ICEs that the Council was using at the time of negotiations with the contractor.<sup>18</sup> The ICE amount at the time of negotiations could either be: (1) an ICE amount reflecting the Council's systematic increases we described in the previous section (the adjusted ICE) or (2) an ICE amount developed by the cost estimating consultant or Council staff that did not have those systematic increases.<sup>19</sup>

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**The Metropolitan Council paid its civil construction contractor the price the contractor initially set for change orders about half of the time, including some instances when the Council's Independent Cost Estimates for the same change orders were significantly lower.**

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The final cost the Metropolitan Council paid for change orders was frequently the amount the civil construction contractor had sought in its initial Change Proposal.<sup>20</sup> Of the 404 Southwest LRT construction change orders with a Change Proposal, the Council agreed to a final cost in 201 cases (50 percent) that equaled the contractor's initial Change Proposal.<sup>21</sup> In another 154 cases (38 percent), the final cost was less than the initial Change Proposal, while 49 cases (12 percent) had a final cost greater than the initial proposal.<sup>22</sup>

On the other hand, the final change order cost was generally greater than the ICE that the Metropolitan Council used in negotiations. Of the 552 construction change orders with a nonzero ICE, the Council agreed to a final change order cost that was greater than the ICE used in negotiations in 407 cases (74 percent). Many of these cases (186, or 34 percent) had a final change order cost at least 50 percent greater than the ICE.

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<sup>18</sup> We refer to the last ICE amount recorded in the Metropolitan Council's construction data system as "the ICE that the Council was using at the time of negotiations." In many cases, these ICE amounts had been updated one or more times during the change order process.

<sup>19</sup> As we described previously, the Metropolitan Council requested adjustments to ICEs for the majority of change orders in Southwest LRT construction, but there were also many ICEs that were not adjusted, created by either the cost estimating consultant or Council staff.

<sup>20</sup> We focused on the initial Change Proposal because as negotiations progressed, the construction contractor often generated new Change Proposals. Each new version incorporated decisions reached between the Metropolitan Council and the contractor during negotiations. Therefore, we expected—and found—that costs in the final Change Proposals would nearly always be close, if not equal, to the final negotiated costs.

<sup>21</sup> Our analysis captured change orders from the start of construction in 2019 through mid-October 2022. We excluded change orders and Change Proposals with zero cost.

<sup>22</sup> The Metropolitan Council may negotiate a final change order cost that is greater than the civil construction contractor's initial Change Proposal for a number of reasons. For example, later modifications to the work required for the change could increase the cost. In our review of individual change orders, we observed some instances where such cost differences were explained and some where they were not.

Final Change Order Cost Comparison to Key Estimates		
Final change order cost was...	Number of Changes	Total Cost of Changes
<b>Initial Change Proposal</b>		
Equal to the Change Proposal	201	\$ 29,347,631
Greater than the Change Proposal	49	25,753,971
Less than the Change Proposal	154	149,311,874
Zero, or there was no Change Proposal	254	15,038,555
<b>Independent Cost Estimate Used in Negotiations (Negotiation ICE)</b>		
Equal to the negotiation ICE	18	\$ 5,146,384
Greater than the negotiation ICE	407	158,880,767
Less than the negotiation ICE	127	48,675,967
Zero, or there was no negotiation ICE	106	6,748,913
<b>Original ICE Developed by the Cost Estimating Consultant</b>		
Greater than the original ICE	300	\$156,018,025
Less than the original ICE	52	12,074,575
Zero, or consultant did not prepare ICE	306	51,359,431
<b>Total Change Order Costs</b>	<b>658</b>	<b>\$219,452,031</b>

Source: Office of the Legislative Auditor, analysis of Metropolitan Council data.

As we discussed in a previous section, the final change order costs were often even further from the original ICEs than from the ICEs used in negotiations. Of the 352 construction change orders with an original ICE (which was later adjusted as directed by the Metropolitan Council), the Council agreed to a final change order cost in 300 cases (85 percent) that was greater than the original ICE. The final cost was at least 50 percent greater than the original ICE in 217 cases (62 percent), including 104 cases (30 percent) in which the final cost was at least double the original ICE.

## “Fair and Reasonable” Change Order Costs

Under federal law and Metropolitan Council procedure, the Council must document why the cost it agrees to pay the contractor for a change order is “fair and reasonable.”<sup>23</sup> For changes following the Council’s standard change order process, this determination is based on a cost analysis, which compares the contractor’s Change Proposal with the ICE.<sup>24</sup> The cost analysis generally examines elements of each estimate such as labor rates, material costs, equipment, and profit. Council procedure states that “the analysis must be based on objective information, scientific analytic methods, expertise, and sound judgment and must be fully spelled out so anyone not familiar with the procurement can follow what was done to arrive at the conclusions given.”<sup>25</sup> Under Council procedure, if the final change order costs are within 10 percent of the ICE, the

<sup>23</sup> 48 CFR, 15.406-3 (2021); and Metropolitan Council, *Cost Analysis Procedure*, issued January 4, 2019, 1.

<sup>24</sup> Federal guidelines require projects to solicit an ICE but do not necessarily require that the project owner use that estimate as the basis for their cost analysis. Metropolitan Council procedure dictates that the Southwest LRT use the ICE for the purposes of analyzing costs.

<sup>25</sup> Metropolitan Council, *Cost Analysis Procedure*, issued January 4, 2019, 1.

ICE alone serves as a cost analysis; no further justification is needed.<sup>26</sup> If not, the Council must demonstrate why the final change order costs are fair and reasonable.

## Use of Adjusted Independent Cost Estimates

As we described previously, the Metropolitan Council frequently directed its cost estimating consultant to increase its Independent Cost Estimates.

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**In nearly all the cases we reviewed, the Metropolitan Council based its determination that change order costs were “fair and reasonable” on cost totals that were higher than its original Independent Cost Estimates.**

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### Change Order Cost Estimates and Final Cost Example

The Metropolitan Council approved a change order in 2021 to build a secant wall along a portion of the Kenilworth tunnel in Minneapolis. The Council directed changes to the original Independent Cost Estimate (ICE) that increased it by nearly \$14 million. The Council ultimately negotiated a lower cost for the change order than the adjusted ICE.

Document	Estimated Costs
Original ICE	\$21,440,259
Adjusted ICE	\$35,350,586
Initial Change Proposal <sup>a</sup>	\$36,806,641
Final change cost	\$29,979,446

<sup>a</sup> Following negotiations, the civil construction contractor submitted a new Change Proposal, which the Council accepted as the final change cost.

Source: Office of the Legislative Auditor, analysis of Metropolitan Council documents.

The Metropolitan Council used the *increased* ICEs or the Council’s own negotiation positions to conclude that the contractor’s costs were “fair and reasonable” for six of the eight executed change orders we reviewed in which both an ICE and Change Proposal were submitted.<sup>27</sup> However, these justifications presented a misleading narrative. For example, in one change order we reviewed shown in the box at left, the Council’s cost analysis showed that it had negotiated millions of dollars off of the contractor’s Change Proposal amount, so that the final change order cost was less than the ICE. However, the Council was using the adjusted ICE (around \$35 million) to make this determination; the original ICE was significantly lower. In fact, the Council accepted final change order costs that were 40 percent greater than those originally estimated by its cost estimating consultant (\$21 million). In some cases, the Council

introduced new, lower negotiation positions after its adjusted ICEs exceeded the civil construction contractor’s Change Proposals.

## Acceptance of Contractor Costs

For the cases we reviewed, the Metropolitan Council’s documentation of its negotiations with the civil construction contractor generally broke out different portions of the change orders into separate work elements. The Council then addressed whether the costs for these elements were “fair and reasonable,” in addition to making a determination about the total change order costs. The Council recorded its review of change order costs in a cost analysis.

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<sup>26</sup> Metropolitan Council, *Procurement Procedure*, section 3-4-3a, revised January 1, 2017, 15.

<sup>27</sup> Of the change orders we reviewed, 11 were executed change orders (or change orders approved by the Metropolitan Council), but only 8 had both an ICE and a Change Proposal.



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**For five of the change orders we reviewed, the Metropolitan Council agreed to pay the civil construction contractor what it requested with little or no explanation for the Council's conclusion that the proposed costs were reasonable.**

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In five of the six individual change orders we reviewed in which the Metropolitan Council negotiated change order costs before change work occurred, it was unclear why the Council accepted certain costs the civil construction contractor listed in its Change Proposals. For example, in a change order adding the Eden Prairie Town Center Station to the Southwest LRT project, the contractor originally proposed a cost of \$350,000 for curb and gutter work at the station, assuming that the contractor's own crews would perform the work. But the contractor later proposed that the Council pay more than three times this amount in order to secure a DBE subcontractor for the same work. The Council accepted the contractor's higher costs for the curb and gutter work based on the argument that this increase was necessary in order to meet the contractor's DBE goals; the contractor did not submit any documentation to demonstrate why the higher amount for the DBE subcontractor was appropriate. In other cases, such as the change order described in the box below, the explanation referred to conversations with the contractor or subcontractor, but did not document how or why the Council concluded that costs were reasonable.

#### **Case Study: Placing Additional Fencing to Fill Fence Gaps**

In the fall of 2020, the civil construction contractor noted that installing fence according to the original project design resulted in gaps between different types of fencing, and the contractor asked the Metropolitan Council how it should address these gaps. The Council directed the contractor to install additional fencing to address the gaps, and to request a change order if the contractor believed it would incur additional costs for the change work. The contractor requested a change in January 2021, and the Council agreed that the change request should become a change order.

The Metropolitan Council's cost estimating consultant generated its estimate for the cost of the change work in April 2021. After the cost estimating consultant submitted its initial Independent Cost Estimate (ICE) of \$34,619—and before the civil construction contractor submitted its proposal—the Council met with the contractor to discuss the scope of the change order. The contractor had identified additional fence placements missed by the cost estimating consultant in its ICE. Council technical staff reviewed the contractor's fencing quantities and agreed they were accurate, so the Council developed a new ICE using these quantities, with an estimated cost of \$115,402. The contractor submitted its initial Change Proposal using the agreed-upon quantities in December 2021 at a cost of \$438,237.

The Metropolitan Council worked with the civil construction contractor throughout 2022 to review the remaining discrepancy between the ICE and the Change Proposal. While the Council's documentation for the change order shows that the Council met with the contractor and its subcontractor to discuss the labor and material associated with the work, it was not always clear why the Council accepted the contractor's figures when the ICE and Change Proposal were at odds. For example, the contractor's estimated material costs were \$500 per unit of fencing, compared to approximately \$81 per unit in the ICE. In its documentation, the Council stated that it had "no objection to [the contractor's] material costs" but provided no explanation for the discrepancy.

Following the conclusion of negotiations (which also shifted a large portion of the work to a separate change order that would be negotiated later), the Metropolitan Council approved a change order for this work in November 2022 and agreed to pay the contractor \$326,124.

In five of the change orders we reviewed, the Metropolitan Council often justified costs in the change orders by highlighting deficiencies in the ICEs, rather than demonstrating why it should pay the construction contractor the amounts in its Change Proposals. The Council's documentation implied that the construction contractor's costs were fair and reasonable in part *because* those costs were different from the deficient ICEs. For example, in a change order modifying a bridge foundation, the Council initially critiqued certain costs in the contractor's Change Proposal, stating that these elements of work should not be included in the change order. Following negotiations with the construction contractor, the Council's cost analysis stated that those work elements were necessary, and that the ICE was deficient for failing to include them in the first place. However, the Council's documentation did not explain why the Council ultimately determined that the construction contractor was correct in its assertion that the work must be included, or how it determined that the contractor's price for these elements was "fair and reasonable" when it had no independent estimate with which to compare them.

In several instances, the Metropolitan Council was aware of modifications to the change orders that would affect pricing, yet it did not request new ICEs. The Council then cited deficiencies in the ICEs to justify its acceptance of the contractor's costs, even though those ICEs no longer reflected the work included in the change scope. For example, in one change order to place additional geotechnical monitoring points in the Kenilworth LRT tunnel, the Council developed the ICE before the full scope of the work was known. As described in the box below, the Council added work to the change order after the ICE's initial development, but failed to use an updated ICE when conducting its cost analysis.

#### Change Order Cost Estimates and Final Cost Example

The Metropolitan Council approved a change order in 2022 to place additional geotechnical monitoring points in the Kenilworth LRT tunnel. Council staff's first Independent Cost Estimate (ICE) captured a portion of the work, but additional work was later added to the change order. The Council estimated the added work through a second ICE, rather than create a cumulative ICE that captured the entirety of the change work. The Council's cost analysis considered only the first estimate, rejected that estimate as incomplete, and used this rejection as part of its justification for accepting the civil construction contractor's recorded costs.

Document	Estimated Costs
First ICE	\$130,357
Second ICE	\$125,563
Cumulative ICE <sup>a</sup>	\$255,920
Contractor's recorded costs <sup>b</sup>	\$345,290
Final change cost	\$345,290

<sup>a</sup> The Metropolitan Council never generated a combined estimate and did not use this figure in its negotiations.

<sup>b</sup> The civil construction contractor completed the change work prior to the change order's approval and, therefore, submitted records of its costs rather than a Change Proposal.

Source: Office of the Legislative Auditor, analysis of Metropolitan Council documents.

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**RECOMMENDATION**

**The Metropolitan Council should reform its processes for determining and justifying final change order costs.**

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The cost analysis process is an important part of ensuring that the Metropolitan Council receives a fair price for work that was not included in the original contract. Our review of the Council's cost analysis and negotiations for select change orders shows that the Council has:

- Routinely adjusted ICEs prepared by its cost estimating consultant.
- Used those increased ICEs to justify change order costs.
- Provided little explanation or support for its acceptance of change costs in the contractor's Change Proposals.

This approach to analyzing and negotiating change order costs for Southwest LRT construction should not be carried forward on the Southwest LRT project nor applied to future Metropolitan Council projects. The practices employed to justify change order costs conflict with federal best practices and the Council's own policy. The Council should both require the contractor to provide an explanation for why the costs it proposes are appropriate and should document why the Council accepts the final agreed-upon amount.



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# Chapter 4: Nonconforming Work

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Errors during construction are part of any project of Southwest Light Rail Transit's (Southwest LRT's) size and scope. Additionally, sometimes unforeseen circumstances may cause work not to meet quality standards set in the construction contract. Work that does not align with contract specifications or standards is called nonconforming work. Large construction projects like Southwest LRT typically have a process through which ongoing work is monitored and inspected in order to identify and address instances of nonconforming work.

In this chapter, we review the Metropolitan Council's process for addressing nonconforming work, including the Council's practices for documenting decisions and costs related to nonconforming work, and how the Council has enforced related provisions in the construction contract.<sup>1</sup>

## Key Findings in This Chapter

- For the cases we reviewed, the Metropolitan Council generally failed to adequately document its decisions related to nonconformance reports.
- The Metropolitan Council did not sufficiently track costs related to nonconformance reports.
- The Metropolitan Council plans to deduct money for nonconforming work from future payments to the contractor, but it has not fully estimated the amount it plans to deduct and lacks adequate documentation to do so.

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## Nonconformance Report Overview

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The Metropolitan Council monitors the work done on the Southwest LRT project through a variety of means, including construction observations and inspections. The Council contracts with a quality management consultant to conduct many of the inspections; Council staff and other project consultants sometimes also perform inspections. When an inspector identifies work that does not align with design requirements, the Council assesses the issue and decides whether to open a “nonconformance report.”<sup>2</sup> The civil construction contractor may also identify nonconforming work through its own quality control staff.



### Nonconforming Work

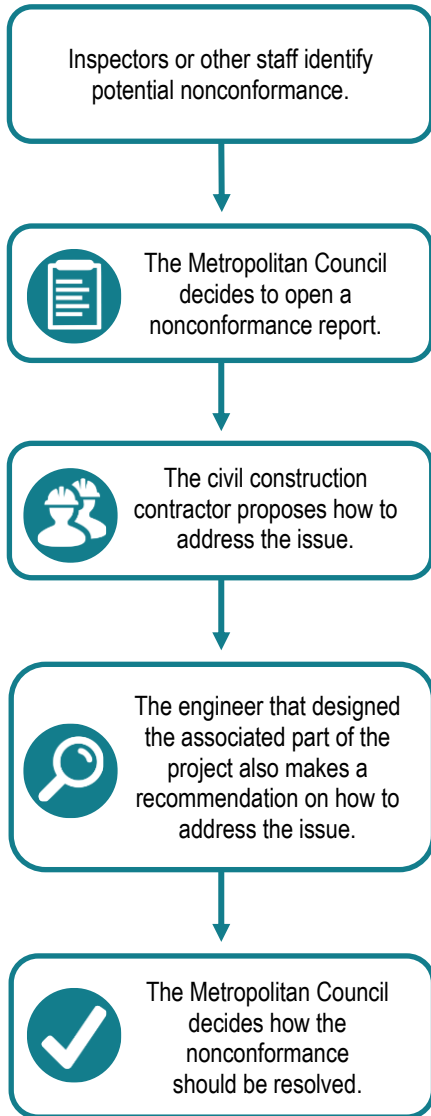
A project work product that does not conform to the design or meet requirements defined in a contract or agreement.

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<sup>1</sup> In this chapter, we focus on nonconforming work of the civil construction contractor, Lunda/C.S. McCrossan Joint Venture (Lunda-McCrossan).

<sup>2</sup> A nonconformance report is a form that documents the process to resolve a project work product that does not conform to the design or meet requirements defined in a contract or agreement.

### Typical Nonconformance Report Process on Southwest LRT Project



Nonconforming work can range in type, scope, and severity. For example, one nonconformance report on the Southwest LRT project involved rust that had developed on handrails at a station. Other nonconforming work can have more serious consequences, such as damage to a building during construction.

Nonconformance reports generally follow the process shown in the box at left. However, not all nonconformance reports follow every step. For example, sometimes a design engineer does not review the nonconformance report, either because the Metropolitan Council determines a design review is not necessary, or because the nonconformance report involves an issue unrelated to the design. In a few cases, the Council has hired third-party engineering consultants to provide additional opinions on how nonconforming work should be resolved.

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### The Metropolitan Council has the authority to deduct or withhold payment from the civil construction contractor in response to nonconforming work.

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Because nonconforming work can occur when the civil construction contractor does not meet its obligations in the contract, there may be a financial aspect to resolving a nonconformance report. If the nonconforming work must be repaired or replaced, the Metropolitan Council should not be billed for the extra work.<sup>3</sup> If the contractor believes it should not be responsible for the costs of the repair, it may submit a change request to the Council, which the Council would resolve through the processes described in Chapter 2. The Council may choose to withhold payment for nonconforming work until the nonconformance report is resolved.

If the nonconforming work is left in place, the Council may consider reducing the amount it pays the contractor. In such cases, the Council would negotiate a deduction in the amount it agreed to pay in the construction contract.<sup>4</sup>

<sup>3</sup> The contract states that the contractor must pay for “defective work.” The Metropolitan Council uses the nonconformance report process to address defective work on the project. Green Line LRT Extension (“Southwest LRT”) Civil Construction (Rebid), Project Number 61001, Metropolitan Council Contract Number 15P307A, Articles 12.10-12.11.

<sup>4</sup> Green Line LRT Extension (“Southwest LRT”) Civil Construction (Rebid), Project Number 61001, Metropolitan Council Contract Number 15P307A, Articles 12.14-12.15.

Example of Nonconformance Report That Resulted in Repair or Replacement	Example of Nonconformance Report That Resulted in a Potential Deduction
An inspector found significant voids in the concrete of a support pillar. The Metropolitan Council determined that these voids weakened the pillar's structural integrity, and required the civil construction contractor to replace the pillar at its own cost.	The civil construction contractor failed to install a work item required in the contract. The Metropolitan Council determined that it was safe for the contractor to continue construction without installing the item, but noted that it would seek a deduction for the uninstalled work.

As of November 2022, the Metropolitan Council had resolved 700 construction-related nonconformance reports. Among these, the Council originally identified 436, and the civil construction contractor identified 264.<sup>5</sup> As Exhibit 4.1 suggests, the Council usually agreed with the contractor's recommendation on how a nonconformance report should be resolved and rarely decided to remove and replace nonconforming work.

Metropolitan Council staff told us the Council has typically left nonconforming work in place if there was no safety concern and the project elements as built still functioned and met the designer's intent. In these cases, the Council concluded that fixing nonconforming work would be more expensive, time consuming, or disruptive than leaving the work in place. The engineer who designed the project elements typically reviewed and approved instances where the Council kept nonconforming work in place. For example, in one nonconformance report we reviewed, the civil construction contractor failed to install the number of supports for a water main pipe called for in the design specifications. After Council staff reviewed the nonconforming work and consulted with the design engineer and the City of Minneapolis, the Council determined that the pipe would function adequately without the supports, and it would be safe to leave the work in place.<sup>6</sup>

In other cases, work initially identified as nonconforming ultimately met the design requirements. For example, many nonconformance reports involved concrete that did not pass an initial strength test performed four weeks after the contractor installed the concrete. After the concrete was given another four weeks to set, the concrete was retested and met the strength requirement in the contract; accordingly, the Metropolitan Council decided to keep the work in place. A Minnesota Department of Transportation (MnDOT) materials specialist told us that it is not unusual for concrete to fail an initial four-week strength test and then pass the eight-week strength test.

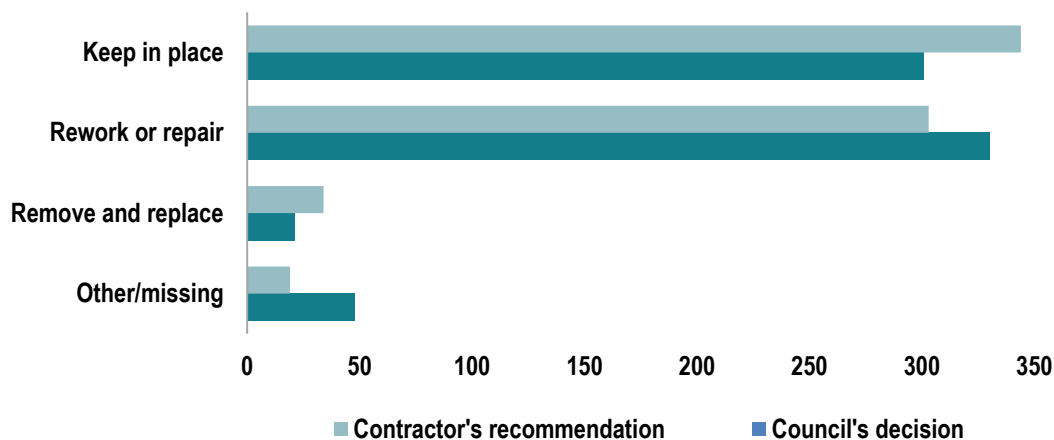
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<sup>5</sup> Inspectors who work for the Metropolitan Council's quality management consultant often identify nonconforming work for the Council. For the sake of simplicity, we refer to these as nonconformance reports identified by the Metropolitan Council.

<sup>6</sup> In this case, the water main pipe would ultimately be owned and managed by the City of Minneapolis. Therefore, the city provided input and approval.

Exhibit 4.1

**The Metropolitan Council typically agreed with the civil construction contractor's recommendation for resolving nonconformance reports.**



Note: This exhibit includes all construction nonconformance reports resolved from the start of construction through November 2022.

Source: Office of the Legislative Auditor, analysis of Metropolitan Council data.

## Inadequate Documentation

The Metropolitan Council's internal nonconformance reports policy requires it to maintain "all supporting documents associated with a nonconformance report."<sup>7</sup> Proper documentation of decisions and costs related to nonconformance reports is essential for the Council to effectively track and manage the progress of work occurring across the Southwest LRT project.

**For the cases we reviewed, the Metropolitan Council generally failed to adequately document its decisions related to nonconformance reports.**

We conducted case studies of 16 nonconformance reports, which we selected based on recommendations of Southwest LRT project staff and contractors.<sup>8</sup> The documentation for the nonconformance reports in at least one-third of the cases we reviewed lacked adequate information to explain the Metropolitan Council's decisions to repair, replace, rework, or keep in place the nonconforming work. For example:

- A nonconformance report cited multiple problems with the work performed by the civil construction contractor at a light rail station, such as a curb built in the wrong location, other elements not built to the correct size, and the contractor failing to properly clean areas before placing concrete. However, the exact extent and number of specific problems was difficult to determine from the

<sup>7</sup> Metropolitan Council, Nonconformance Report TSD-15-05, *Nonconformance Report Procedure*, Revision 02-00, issued July 11, 2018.

<sup>8</sup> We chose 16 nonconformance reports for which we exhaustively reviewed all available documents; we also reviewed partial documentation for dozens of additional nonconformance reports in the course of our research.



Metropolitan Council's documentation. The documentation contained a checklist noting 28 separate concerns that needed to be addressed by the contractor. The Council closed the nonconformance report with a short statement that all items had been resolved, even though only 10 of the 28 items on the checklist were marked as completed. Council project leaders told us some of these items were addressed through separate nonconformance reports, but we could not find any confirmation in the Council's documentation for this nonconformance report. The Council and the contractor agreed to keep some of the nonconforming work in place, but the Council's file contained incomplete documentation of what elements were repaired and what were retained. Further, some of the problems referred to in other documentation in the file did not appear on the checklist and were not otherwise noted as addressed in the file.

- In two instances where installed concrete did not meet strength requirements after both four-week and eight-week strength tests, the Metropolitan Council permitted the civil construction contractor to keep testing the concrete repeatedly for nearly a year until the Council agreed to accept the test results as satisfactory, despite objections from its design engineer. There was limited documentation explaining why the Council permitted repeated testing, and no documentation to indicate how many tests the Council would have allowed before requiring replacement. The longer the contractor waited, the more disruptive replacement of the concrete would have been to surrounding project construction, had it been deemed necessary.
- The Metropolitan Council issued a nonconformance report stating that the civil construction contractor was not providing adequate security at construction sites. The contractor disagreed and the Council then dropped the matter without further action; it did not document that the contractor made any security changes in response to the nonconformance report.

### Case Study: Soil Hauling

In December 2020, an inspector notified Metropolitan Council staff that the civil construction contractor inappropriately hauled an estimated three truckloads of noncontaminated soil to a landfill. The construction contract requires the civil construction contractor to haul certain classifications of *contaminated* soil, and only at the approval of a Council representative. In response to this incident, the Council opened a nonconformance report and withheld approximately \$13,000 in payments to the contractor.

The civil construction contractor disputed the inspector's characterization of the incident; it argued that the soil it hauled was actually contaminated, and therefore, it had followed the proper protocol for hauling contaminated waste. The Metropolitan Council's documentation did not clearly record the soil classification or the cost of the work, in part because the contractor hauled the soil without an inspector present.

It was difficult to determine how the Metropolitan Council resolved this nonconformance report. Council staff provided multiple explanations that were neither consistent with each other nor with the information recorded in the nonconformance file. According to both the file and a Council representative, the Council was unable to determine whether the hauled soil had been contaminated. Ultimately, because the Council could not determine whether the soil was contaminated, it decided to close the nonconformance report without seeking a deduction and release the withheld funds back to the contractor. However, Council project leaders later stated that this account was "false," and that the Council had determined that the soil was, in fact, contaminated. The Council did not provide any supporting documentation for this determination or explain why its own file contained "false" information.

The Metropolitan Council’s civil construction contract requires the civil construction contractor to pay to address nonconforming work if the Council determines the work is defective. In order to enforce this requirement, the Council must determine which entity is responsible for paying for the costs of addressing the nonconforming work. The Council must also determine the costs of addressing the nonconforming work.

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**The Metropolitan Council did not sufficiently track costs related to nonconformance reports.**

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The Metropolitan Council’s documentation did not identify which entity would be responsible for paying for the costs related to the nonconforming work in 15 of the 16 nonconformance reports we reviewed. For example, two related nonconformance reports involved concrete piles that were damaged during installation due to an unforeseen obstruction underground.<sup>9</sup> A representative from the Council told us that the Council paid for the work to fix these issues because the underground obstruction was not the fault of the civil construction contractor. But, the Council did not document that it would pay for the costs to repair the work, or how much it paid. A Council representative told us the Council does not track the costs or locations of individual piles; the contractor aggregates together pile driving work and bills the Council for multiple piles at a time.<sup>10</sup>

It was difficult to use the Metropolitan Council’s documentation to track whether the civil construction contractor appropriately paid for repairing, reworking, or replacing nonconforming work. None of the 16 nonconformance reports we reviewed contained formal estimates or records of costs to repair or resolve the nonconforming work. Because the contractor should not bill the Council for this repair work, the Council does not track the costs of this work within the nonconformance reports. Rather, the Council pays the contractor only the contractually agreed amounts for that element, and the contractor is responsible for absorbing the costs of any repair, rework, or replacement.

However, costs associated with nonconforming work can involve more than just the direct construction costs. Several nonconformance reports we reviewed led the Metropolitan Council to conduct additional testing, reviews, engineering, or design. The civil construction contract states the contractor must pay for “claims, costs, losses, and damages caused by or resulting from” the correction or removal of defective work.<sup>11</sup> As far as we are aware, the Council has not sought compensation from the contractor for additional costs from tests, engineering, or design that resulted from the repair, removal, or replacement of nonconforming work. In the cases we reviewed, the Metropolitan Council did not take any action to track these additional costs or ensure the civil construction contractor paid for them. In 2021, an internal Council quality review recommended that the Council track costs related to processing and closing

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<sup>9</sup> A pile is a long cylinder driven or pushed into the ground to support a structure built on top of it.

<sup>10</sup> In a subsequent change order, the Metropolitan Council agreed to pay an additional \$2.3 million for additional piles needed on the project, but the change order did not reference the nonconformance report described above.

<sup>11</sup> Green Line LRT Extension (“Southwest LRT”) Civil Construction (Rebid), Project Number 61001, Metropolitan Council Contract Number 15P307A, Article 12.12.

nonconformance reports and report them on a monthly basis so that it knows the magnitude of these costs.<sup>12</sup> To date, Council staff have not implemented this recommendation, although a Council representative told us the Council could gather such information if necessary.

#### Case Study: Currie Building Damage

On October 6, 2021, the civil construction contractor notified the Metropolitan Council of damage to the Currie Maintenance Facility, a building owned by the City of Minneapolis where city staff repair and service city vehicles. The damage—gaps in floor and wall joints and a broken connection between an exterior wall and the roof—had occurred while the civil construction contractor was excavating next to the building. A consulting engineer stated that the damage was likely due to soil settlement caused by project construction. The Council hired an outside firm to repair the damage, at a cost of \$240,000. Additionally, the Council directed the civil construction contractor to take steps to ensure the building would not sustain further damage. The Council also issued a nonconformance report, stating that the damage was due to improper excavation techniques by the contractor. The contractor disagreed with the assertions in the nonconformance report, arguing its activity had not caused the damage.

As of March 2023, over 18 months after the damage to the Currie Building occurred, responsibility for the damage remains in dispute. According to the Metropolitan Council, the Council and the civil construction contractor have both reserved the right to dispute costs at a later point in time. The contractor has claimed that it is not at fault for the damage, and that in fact it should be paid additional money for the extra work it did to stabilize the building. Project staff told us that the Council intended to negotiate a deduction with the contractor for the costs the Council incurred due to the Currie Building damage. The settlement agreement the Council negotiated with the civil construction contractor noted that certain claims related to the Currie Building damage will be settled through the agreement's alternative dispute resolution process.

In our assessment, the Metropolitan Council's preparation to recover any damages from the civil construction contractor is inadequate. The Council has not analyzed the contractor's excavation work that was occurring prior to the damage; such an analysis would be important to demonstrate whether the contractor bears responsibility for the building settlement. (Council project leaders told us they still intend to conduct such an analysis in the future and have retained an engineering firm to do so.) Further, the Council's file on this nonconformance does not quantify any related costs, such as the costs to assess the damage, repair the building, and any associated delays. Without this documentation, it is unclear how the Council can effectively negotiate a resolution to the dispute.

## Deductions of Payment for Nonconforming Work

The civil construction contract authorizes the Metropolitan Council to deduct payment from the civil construction contractor when the Council decides to keep nonconforming work in place. In other words, if the civil construction contractor does not complete the work it agreed to complete at the level specified in the contract, the Council is not obligated to pay the full amount for that work. However, the Council has yet to deduct payment in this way from the contractor for any nonconforming work, and only plans to seek a deduction on a small fraction of the nonconforming work it agreed to leave in place.

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<sup>12</sup> Ram Kimal, "Southwest Green Line LRT Extension, Quality Review, Civil Contractor – LMJV, Low Break Concrete (QR4)" (2021), 8.

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**The Metropolitan Council plans to deduct money for nonconforming work from future payments to the contractor, but it has not fully estimated the amount it plans to deduct and lacks adequate documentation to do so.**

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Project leaders told us in November 2022 that the Metropolitan Council continues to “reserve the right” to deduct payment in the future for a total of 14 nonconformance reports. They said that the Council intended to wait to negotiate payment deductions until the end of construction.<sup>13</sup> Project leaders told us the strategy of waiting to impose deductions until the end of the project improves the Council’s negotiating position. Through March 2023, the Council had not deducted payment for any nonconforming work that it elected to leave in place on the Southwest LRT project; in May 2023, the Council told us it had begun the process to deduct payment for a handful of nonconformance reports.

Among the 15 finalized nonconformance reports we reviewed, the Metropolitan Council “reserved the right” to pursue a deduction in 3 cases. Additionally, we reviewed one unresolved nonconformance report (the Currie building damage described previously) for which the Council plans to reserve its rights when the report is closed and eventually pursue compensation from the civil construction contractor. As of March 2023, the Council had not yet estimated the cost of the potential deductions for three of these four cases; it had made only a “rough order of magnitude” estimate for the fourth.<sup>14</sup> Aside from this estimate, the nonconformance reports we reviewed lacked any records of the cost of the work. The Council’s documentation also lacked other potentially important records for calculating these deductions, such as studies of how the nonconforming work might impact the lifespan of the affected structure, or records of how much time engineers or outside consultants spent on analysis related to the nonconforming work.

Representatives from the Metropolitan Council told us they would negotiate deduction amounts at a later date. However, given the lack of documentation in the nonconformance reports we reviewed, we are concerned that the Metropolitan Council will not have adequate information to negotiate appropriate deductions, especially if Council or contractor staff familiar with the associated nonconformance report have left the project before such negotiations occur.

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<sup>13</sup> The Metropolitan Council retains 5 percent of the amount of each payment to the contractor until it closes out the contract at the end of construction. The Council told us the closeout process will occur separately for the 32 different sections of the project as construction is completed for each section. The Council plans to address any potential deductions as it closes out each section, rather than the end of the Southwest LRT project in general.

<sup>14</sup> We discussed “rough order of magnitude” estimates in Office of the Legislative Auditor, Program Evaluation Division, *Southwest Light Rail Transit Construction: Metropolitan Council Decision Making* (St. Paul, 2023), 40-41.

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## RECOMMENDATIONS

**The Metropolitan Council should improve its documentation practices regarding:**

- **Its decision making related to nonconformance reports.**
  - **Costs associated with responding to and resolving nonconformance reports.**
  - **Which entity paid for work associated with nonconformance reports.**
  - **Estimated deduction amounts.**
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According to Metropolitan Council policy, all documentation related to nonconformance report decision making should be stored in its construction data system. But the documentation stored in this system often lacked crucial information and was disorganized. For 16 different nonconformance reports, we requested the Metropolitan Council provide us with documentation of:

- The Council's decisions to begin the nonconformance report process.
- The Council's determinations of the resolution of each nonconformance report.
- The Council's determinations of whether to withhold payment.
- The Council's decisions regarding whether it should hire a third party to evaluate the nonconforming work.

For just these 16 examples, the Metropolitan Council responded to our request by providing us with 6,000 unsorted and unlabeled e-mail messages, attachments, and related files. We do not view this as an effective documentation system, especially since most of the e-mail messages were not relevant to our request.

Further, it is redundant to ask staff to spend time addressing nonconformance reports twice; once when initially determining how to resolve the nonconformance report, and then again later to understand how the nonconformance report was resolved and to determine an appropriate deduction amount. The Metropolitan Council should ensure its documentation is useful and understandable for all parties (Council staff, contractors, project partners, or auditors) who need to review it in the future.

Finally, the Metropolitan Council's lack of cost documentation for nonconformance reports could place the Council in a disadvantaged position when it negotiates deductions with the civil construction contractor. Some of the nonconformance reports for which the Council has informed us it may pursue payment deductions occurred years ago. By the time negotiations occur, the staff involved in addressing the nonconformance reports may have left the project or may otherwise be unable to create sufficient documentation to support the Council's position. The Metropolitan Council should follow the recommendations of its own internal quality review and track cost information associated with all nonconformance reports, so that the Council has the information it needs for potential future deductions.



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# Chapter 5: Discussion

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One of the Metropolitan Council's key roles as the project owner of the Southwest Light Rail Transit (Southwest LRT) project is to oversee the work of contractors. This responsibility includes ensuring that all contractors perform the work as outlined in the contract; it also includes enforcing all provisions of the contracts.

Over the past year, the Office of the Legislative Auditor has conducted a special review and a program evaluation regarding the Metropolitan Council and Southwest LRT.<sup>1</sup> Our findings across different areas of the project have raised concerns regarding the Metropolitan

Council's management of its contractors. In this chapter, we summarize these concerns and offer broad recommendations regarding contractor oversight.

## Key Findings in This Chapter

- The Metropolitan Council has not adequately enforced several aspects of its key Southwest LRT contracts.
- The Metropolitan Council did not have adequate documentation to support some of the decisions it made on the Southwest LRT project.
- The Metropolitan Council's original contract with its civil construction contractor did not provide sufficient mechanisms for the Council to enforce contract requirements.

## Contractor Oversight

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In both this report and our March 2023 evaluation report on the Metropolitan Council's work related to Southwest LRT, we have identified a number of deficiencies in the Council's management of its contractors. While we mostly examined the Council's oversight of its civil construction contractor (the largest contract on the project), we have noted concerns about its management of other contractors as well. The Council's ineffectiveness when enforcing contract terms may have contributed to the significant delays and cost increases on the Southwest LRT project.

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### **The Metropolitan Council has not adequately enforced several aspects of its key Southwest LRT contracts.**

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In our March 2023 evaluation report and this report, we identified several areas in which the Metropolitan Council did not adequately enforce its contract with the project's civil construction contractor. We also noted that despite its dissatisfaction with the cost estimating consultant, the Council did not take sufficient action to address concerns. We discuss each of these areas of weak contractor oversight below.

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<sup>1</sup> Office of the Legislative Auditor, Special Review, *Southwest Light Rail Transit: Project Budget and Timeline* (St. Paul, 2022); and Office of the Legislative Auditor, Program Evaluation Division, *Southwest Light Rail Transit Construction: Metropolitan Council Decision Making* (St. Paul, 2023). This is the second of two evaluation reports about the Metropolitan Council's oversight of Southwest LRT construction.

**The Metropolitan Council did not enforce project schedule requirements for its civil construction contractor.** As we discussed in our March 2023 evaluation report, the Metropolitan Council’s contract with its civil construction contractor required the contractor to submit various construction schedules. The Council planned to use at least some of these schedules as a basis for assessing and approving payment requests. However, the Council identified numerous issues with the project schedules submitted by the civil construction contractor. In fact, the Council did not fully accept any construction schedule submitted by its civil construction contractor until 2022, three years after the start of construction.<sup>2</sup>

Although the Metropolitan Council repeatedly criticized the deficiencies it found in the construction contractor’s schedules, its efforts to hold the contractor accountable were largely ineffective. The contract permitted the Council to withhold payments until the contractor submitted an acceptable schedule, but it did not do so. Instead, the Council allowed the construction contractor to continue construction of the project—and continued to pay the contractor—for at least two years without an unconditionally approved schedule.<sup>3</sup>

**The Metropolitan Council did not enforce civil construction contract requirements for generating documents to estimate costs and schedule impacts of change orders.** As discussed in Chapter 2 of this report, the civil construction contractor must submit key documents, such as Change Proposals, as part of its change order responsibilities. But the contractor failed to submit Change Proposals for about 30 percent of approved change orders from 2019 through October 2022. The civil construction contractor also often did not provide required technical and accounting information when requesting a change order for the individual cases we reviewed.

Although these documents were necessary to estimate the costs and schedule impacts of change orders, the Metropolitan Council took no meaningful action to hold the civil construction contractor accountable for failing to supply the required documents in the cases we reviewed. The only action the Council took was to reiterate that the contractor must submit documents as required by the contract. More than 100 change orders remained unresolved on the project for a period of up to three years. Instead of resolving these change orders through the Council’s standard processes, the Council and contractor eventually bundled many of these change orders together and resolved them through a settlement agreement without the contractor ever submitting Change Proposals.

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<sup>2</sup> The Metropolitan Council did “conditionally” accept one version of the schedule. See Office of the Legislative Auditor, *Southwest Light Rail Transit Construction: Metropolitan Council Decision Making*, 27-31.

<sup>3</sup> *Ibid.*



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**After losing trust in its cost estimating consultant, the Metropolitan Council directed the consultant to systematically increase its Independent Cost Estimates.**

As discussed in Chapter 3, the Metropolitan Council contracted with a cost estimating consultant to independently estimate the cost impacts of change orders.<sup>4</sup> In theory, these Independent Cost Estimates would help the Council negotiate the impact of change orders with the construction contractor.

However, as discussed in Chapter 3, the Metropolitan Council repeatedly identified deficiencies with the change order cost estimates it received from its cost estimating consultant. Instead of terminating the contract and hiring a new cost estimator, the Council requested systematic adjustments to the cost estimates it received, and then often disregarded those estimates entirely by creating alternative “negotiation positions.”

It is not entirely clear why the Metropolitan Council did not do a better job of enforcing its contracts. One possible reason is that the Council prioritized speed—constructing Southwest LRT as quickly as possible—over all other project management considerations. In a survey we conducted of Southwest LRT project office staff, more than 50 percent of staff who responded said that leadership sometimes, often, or always prioritized the speed of project completion over all other factors.<sup>5</sup> Some staff told us they felt the emphasis on speed had led the Council to make decisions during the change order negotiation process that resulted in higher costs, simply to keep the project moving.

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**The Metropolitan Council did not have adequate documentation to support some decisions it made on the Southwest LRT project.**

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In this evaluation, we identified several instances where the Metropolitan Council did not have adequate documentation to support its decisions or explain why it took certain actions. Below, we discuss two examples of the inadequate documentation that we saw in the change order and nonconformance report processes.

**The Metropolitan Council did not have adequate documentation to validate the actual costs of some change orders.** As we discussed in Chapter 2, in change orders we reviewed where the Metropolitan Council approved expenses on a reimbursement basis, the Council’s documentation was sometimes inadequate to verify the costs claimed by its civil construction contractor. In some of the cases we reviewed, the Council eventually paid the contractor even though the Council’s documentation conflicted with the documentation the contractor provided. The Council also failed to adequately document why it chose to accept costs proposed by the civil construction contractor during change order negotiations, as we discussed in Chapter 3.

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<sup>4</sup> AECOM Technical Services, Inc. (AECOM) served as the Metropolitan Council’s cost estimating consultant on the Southwest LRT project through June 2023 as part of its project design responsibilities. In late 2022, the Council rebid the cost estimating portion of AECOM’s work. Another firm submitted the winning bid; as of June 6, 2023, the Council was still finalizing the contract with the new firm.

<sup>5</sup> In January 2023, we sent a survey to 127 current and former Southwest LRT project office staff who had been included in the Southwest LRT Project Office organizational chart at any time since January 2017. We received responses from 113 staff, for a response rate of about 89 percent. We excluded 11 respondents who had not worked on the Southwest LRT project since 2017, had worked there for less than 6 months, or had worked on the project less than half time. We were unable to locate contact information for 16 staff no longer associated with the project.

**The Metropolitan Council did not adequately document its decisions related to nonconformance reports.** As we discussed in Chapter 4, the Metropolitan Council lacked clear documentation to explain its determinations to replace, repair, or keep in place nonconforming work. Further, in the cases we reviewed, the Council's documentation of the costs related to nonconforming work and whether the Council or its contractors would pay those costs was often inadequate. In general, the Council's documentation related to nonconformance reports was hard to follow and incomplete.

More broadly, to the extent the Metropolitan Council lacks adequate nonconformance documentation related to costs and work performed, it may be at a disadvantage during future cost negotiations with the construction contractor. Without adequate documentation, it may be challenging for the Council to reach agreements that are in the best interests of taxpayers.

## Civil Construction Contract

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As we discussed above, the Metropolitan Council did not enforce aspects of the civil construction contract. Southwest LRT leadership told us that it would not have been practical for the Council to enforce the contract as written due to the challenges the project has faced, including the high number of large changes. The Council stated that its decision not to follow the processes outlined in the original contract was a "sound management practice" given the circumstances it faced.

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**The Metropolitan Council's original contract with its civil construction contractor did not provide sufficient mechanisms for the Council to enforce contract requirements.**

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The civil construction contract allowed the Metropolitan Council to withhold or deduct payment when the civil construction contractor did not meet contract requirements. The contract provided few other enforcement mechanisms.

However, the Metropolitan Council appeared reluctant to withhold or deduct payment as a method to enforce contract compliance. For example, as we discussed in our March 2023 evaluation report, the civil construction contractor failed to provide a project schedule acceptable to the Council for years. The Council withheld a small portion of the payment due to the contractor for two months, but did not withhold additional funds despite the continued lack of an acceptable schedule.

Further, as we discussed in Chapter 2 and earlier in this chapter, the civil construction contractor did not submit required documents for more than 100 change orders during the first few years of the project. Although the Metropolitan Council complained that the contractor had not provided these documents, it did not withhold payment in order to induce the contractor to meet its contractual obligations. Council project leaders told us they did not believe the contract enabled the Council to do so.

Southwest LRT project leaders told us that it would have been counterproductive for the Metropolitan Council to withhold funds to incentivize the civil construction contractor to comply with such requirements. They said that such an approach could have led to expensive and time-consuming litigation, with no guarantee that the contractor would eventually comply with the contract terms. Project leaders also pointed out that the Council retains 5 percent of every payment it makes to the contractor, only releasing that amount when it closes out the contract. They stated that the retainage provides a strong incentive for the contractor to resolve all outstanding issues so it can receive its full payment.

We acknowledge that the risks associated with litigation make it imprudent for the Metropolitan Council to enforce the contract by withholding or deducting payment for every contract violation. However, we believe the Council's dilemma derived from the limitations of the original contract it entered into with the contractor. Enforcement provisions consisting mainly of actions the Council is reluctant to take are tantamount to having no enforcement provisions at all. Further, while we agree with the Council's practice of retaining 5 percent of payments, it is unclear how this practice encourages a contractor to meet its contractual obligations *during* construction—the Council retains this amount regardless of the contractor's performance.

As we described in Chapter 2, the Metropolitan Council and the civil construction contractor reached a settlement agreement in March 2022. The settlement agreement's primary purpose was to reach agreement on how to reorganize construction work to mitigate the project's ongoing challenges and delays. However, the two parties also agreed to replace the contract's provisions for resolving disagreements with an alternative dispute resolution process that requires both sides to engage in mediation and, when necessary, binding arbitration. Council leadership acknowledged that the contract's original language had not been sufficient to address the challenges the project encountered. As one project leader put it, it was necessary to go "outside the four walls of the contract" in order to move the project forward successfully.

## Recommendations

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The Metropolitan Council should properly manage its contractors on the Southwest LRT project and on all light rail construction projects going forward. In earlier chapters, we made recommendations specific to individual processes. Below, we present some more general recommendations related to the Metropolitan Council's management of its contractors.

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### RECOMMENDATION

**The Metropolitan Council should ensure its future contracts include sufficient enforcement mechanisms.**

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Contract enforcement is one of the Metropolitan Council's key roles as the project owner of Southwest LRT. However, the original civil construction contract lacked tools for the Council to effectively enforce the terms of the contract. The Council

ultimately resolved many outstanding contract violations through the settlement agreement, rather than through standard contract processes.

In the future, the Metropolitan Council should ensure its contracts contain a range of sanctions it can use to hold the contractor to the terms of the contract without risking derailing the entire project due to litigation. The contracts should include requirements that can be reliably enforced, even if the project encounters significant challenges.

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## **RECOMMENDATION**

### **The Metropolitan Council should fully enforce its contracts.**

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The Metropolitan Council's inability to fully enforce its civil construction contract may have contributed to delays or cost increases on the project, such as through inflated change order costs or the failure to recoup costs for nonconforming work. The Council has a responsibility to taxpayers to ensure work is completed efficiently and at a high quality, while also minimizing costs and delays.

We recommend above that the Metropolitan Council develop contracts that give it a wider range of tools to enforce contract compliance. The Council should then make use of those tools when necessary to ensure that contractors follow contract specifications. The Council should use limited sanctions (and, perhaps, rewards) to address minor deviations from contract requirements. However, when a contractor repeatedly fails to meet requirements, the Council should consider withholding or reducing payments. Additionally, when the Council is not satisfied with a contractor's work over a sustained period of time, it should formally explore the costs and benefits of cancelling the contract and rebidding the work.

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## **RECOMMENDATION**

### **The Metropolitan Council should ensure it has documentation to support its decisions.**

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Proper documentation and recordkeeping are essential for the Metropolitan Council to track its management of the Southwest LRT project. Without high-quality documentation, it is more difficult for the Council to hold contractors accountable to the terms of their contracts. Lack of adequate documentation may also put the Council at a disadvantage during negotiations with its contractors, and may exacerbate existing cost overruns and delays.

In the future, the Metropolitan Council should ensure it more clearly documents its decisions during the Southwest LRT project and other LRT projects, particularly with regard to decisions related to contract change orders and nonconforming work. The Council should ensure its records of costs and work completed are accurate and thorough so that the Council can ensure it pays a fair amount.

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# List of Recommendations

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- The Metropolitan Council should:
  - Require its contractors to meet contractual obligations related to change orders.
  - Ensure contracts include adequate language to hold contractors accountable for change order requirements.
  - Negotiate change order costs and schedule delays in a timely manner.
  - Inform change order approval bodies when changes include language that leaves open the possibility of additional delays and related costs. (p. 16)
- The Metropolitan Council should:
  - Make greater efforts to limit change work that occurs before the cost and schedule impacts are negotiated.
  - Improve its policies for managing change orders based on a contractor's reported costs. (p. 21)
- The Metropolitan Council should:
  - Hold its cost estimating consultant accountable for delivering acceptable estimates.
  - Consider changing its cost estimation policies and contracts. (p. 28)
- The Metropolitan Council should reform its processes for determining and justifying final change order costs. (p. 35)
- The Metropolitan Council should improve its documentation practices regarding:
  - Its decision making related to nonconformance reports.
  - Costs associated with responding to and resolving nonconformance reports.
  - Which entity paid for work associated with nonconformance reports.
  - Estimated deduction amounts. (p. 45)
- The Metropolitan Council should ensure its future contracts include sufficient enforcement mechanisms. (p. 51)
- The Metropolitan Council should fully enforce its contracts. (p. 52)
- The Metropolitan Council should ensure it has documentation to support its decisions. (p. 52)



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# Appendix

## Background Information About Change Order and Nonconformance Report Case Studies

Change Description	Date Opened	Date Closed	Final Change Amount
Build an additional light rail station at Eden Prairie Town Center. (The station had originally been planned, then deferred. It was reintroduced with this change.)	Jan 2019	Mar 2020	\$11,413,550
Relocate retaining walls and build additional retaining walls to accommodate work on freight rail tracks.	Jan 2019	Nov 2020	\$9,310,000
Compensate contractor for additional costs for changed work plans to address vibration and noise affecting a newly constructed apartment building near work site.	Jun 2019	Sep 2019	Council rejected change request
Account for added costs of installing sheet piling for the Kenilworth LRT tunnel, including removal of underground obstructions, relocation of equipment, additional equipment costs, and additional road closure costs.	Dec 2019	Dec 2021	\$3,671,583
Conduct additional monitoring of soil behavior where contractor was installing concrete sheeting near buildings neighboring the Kenilworth LRT tunnel.	Mar 2020	Jan 2022	\$345,290
Substitute alternative foundation for Minneapolis, Northfield, and Southern (MN&S) Railway bridge pier to avoid possible vibration impacts.	May 2020	Nov 2020	\$864,561
Add shoring to support ductbank installation.	Jun 2020	Aug 2020	Council rejected change request
Add a special type of wall underground adjoining the Kenilworth LRT tunnel at a location where the tunnel is very close to neighboring buildings, in order to limit risks to buildings.	Jul 2020	Sep 2021	\$29,979,446
Compensate contractor for its crews being unable to work as a result of freight rail cars being parked on adjacent tracks (contractor had to pay employees for time not working).	Sep 2020	Dec 2020	Council rejected change request
Reduce payment to contractor after construction error blocked traffic on neighboring freight rail track for over six hours (penalty prescribed by the contract).	Oct 2020	Nov 2020	\$(15,734)
Add rail, electrical, and foundation updates and public utility infrastructure near the Shady Oak Park and Ride.	Nov 2020	TBD	TBD
Add mile-long concrete corridor protection barrier between light rail tracks and neighboring freight rail tracks to limit damage in the case of derailment.	Nov 2020	Apr 2021	\$82,604,905
Install “flags” (short fence units) in various locations to span gaps between permanent and temporary fencing.	Jan 2021	Oct 2022	\$326,125
Redesign and reengineer excavation near the Currie Maintenance Facility, adjacent to the Glenwood Avenue Bridge, in Minneapolis.	Feb 2021	June 2022	\$9,548
Remove and replace unsuitable soils near the Downtown Hopkins Station.	May 2021	Oct 2021	\$20,199
Change work schedule to accommodate delays caused by a city not notifying contractor of the locations of its existing public utilities infrastructure.	Apr 2022	Aug 2022	Council rejected change request

Notes: Change orders in our review included approved changes and change order requests. “Date Closed” refers to either the approval date of the change order or to the date that the Metropolitan Council rejected and closed out a change request from the contractor. One proposed change (noted with “TBD”) was still in negotiation at the time of our review; thus, it does not have a final approval date or a final change amount.

Source: Office of the Legislative Auditor, analysis of Metropolitan Council documents.

Nonconformance Report Description	Date Opened	Date Closed	Resolution
Soil placed in excavation next to the Shady Oak Station did not meet requirements for consistency or moisture content.	Oct 2019	Apr 2020	Reworked
Installed temporary freight rail track was out of compliance with federal track standards in 15 separate locations.	Jan 2020	May 2020	Reworked
Thieves removed installed copper wiring from construction sites. Contractor's security was insufficient to protect against theft.	Mar 2020	Jun 2020	Repaired wiring; no action required regarding security
Contractor constructed the wall in an incorrect location, making it impossible to properly install other infrastructure elements.	Apr 2020	Jun 2020	Replaced
Installed concrete in a retaining wall did not pass strength tests.	May 2020	Jun 2020	Kept in place; concrete passed later tests
Contractor failed to install thrust restraints (extra support at pipe joints) during installation of water main.	May 2020	Dec 2020	Kept in place
Installed concrete at I-394 overpass did not pass strength tests.	Jun 2020	May 2021	Kept in place; concrete passed later tests
Installed concrete in a retaining wall did not pass strength tests.	Jul 2020	Aug 2020	Kept in place; concrete passed later tests
Installed concrete in a tunnel under Highway 62 did not pass strength tests.	Sep 2020	Jan 2022	Kept in place but required contractor to add sealant
Piles (large concrete cylinders that support structures) driven into the ground were damaged or did not reach the required depth after encountering underground obstructions. (Two related reports.)	Sep 2020	Nov 2020	Reworked most piles; replaced one
Installed concrete columns contained "honeycombs" of voids where concrete was not solid all the way through.	Nov 2020	May 2021	Replaced
Contractor incorrectly treated noncontaminated soil as contaminated soil, hauling it offsite and disposing it at increased cost to the Metropolitan Council.	Dec 2020	Mar 2021	No action required
Contractor made numerous errors in installing sidewalks and curbs near the Downtown Hopkins Station, including omitting or incorrectly building required accommodations for persons with disabilities.	Jul 2021	May 2022	Kept in place, repaired, or replaced
During Glenwood Avenue Bridge excavation, soil settlement under the neighboring Currie Maintenance Facility caused damage to the building.	Oct 2021	TBD	Repaired
While pouring a concrete foundation, a rebar cage shifted position and ended up in a skewed alignment.	May 2022	Jun 2022	Kept in place

Note: One of the nonconformance reports we reviewed is still open (noted with "TBD").

Source: Office of the Legislative Auditor, analysis of Metropolitan Council documents.





Judy Randall  
Legislative Auditor  
658 Cedar Street, Room 140  
St Paul, MN 55155

June 23, 2023

Dear Ms. Randall:

Thank you for the opportunity to review and respond to the *Office of the Legislative Auditor's report on the Southwest Light Rail Transit (SWLRT) Construction: Metropolitan Council Oversight of Contractors*. As part of the special review process, the Metropolitan Council ("Council") was afforded an opportunity to provide feedback on the draft report. Attached to this letter is the Council's technical response to the final report.

While we appreciate the Office of the Legislative Auditor's attention to this matter, several of the report's recommendations do not align with the U.S. Department of Transportation's Federal Transit Administration ("FTA") guidance or construction law, are not appropriate for a project of this size and complexity, and in some instances could have contributed to additional delay.

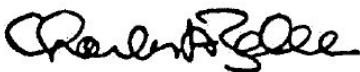
- **Cumulative Impact of Change Orders.** The root cause of the change order administration issues and inefficiencies on the Project are not the result of the Contractor's paperwork delays, but due to the extraordinary number of change orders on the Project. The Council estimates a substantial number of civil change orders were a result of the Advanced Design Consultant ("ADC") errors and omissions.
- **Delay Impact of Complex Change Orders.** To address the delay impact of the complex change orders, the Council and Contractor worked cooperatively to re-baseline the schedule and implement a streamlined turnover sequence. The Council's construction claims and schedule consultant estimates that the re-baselined schedule mitigated the overall delay to the Project by at least two years. It would have been far more difficult, if not impossible, to implement the new turnover sequence had the Council followed the recommendation in the Report to resolve each schedule delay separately.
- **Benefits of the Settlement Agreement.** Under the Settlement Agreement, the Contractor continues to advance construction in accordance with the re-baselined schedule while the Council's experts review and analyze the Contractor's cost documentation related to the delays. The processes established through the Settlement Agreement provide undisputed best practices for dispute resolution while construction is ongoing. The Settlement Agreement provided Council with a more thorough evaluation of the schedule and cost impacts to the Project than the original contract terms allowed.
- **Enforcing Compliance.** The recommendation to withhold payment due to the Contractor's delay in submitting documentation would not serve a productive purpose which is why it is not an industry standard on complex construction projects. Due to the volume and complexity of the change orders, it would have been difficult, if not impossible for the Council to strictly implement the submittal

requirements outlined in the contract. There is also a risk that the Contractor would stop work and litigate the matter, causing additional project delays.

- Independent Cost Estimate (ICE) Deficiencies. The recommendations related to ICE deficiencies are not actionable because they do not address AECOM's refusal to accept Council's input on missing scope and underrepresented costs. Following input from MnDOT during its Peer Review of the Project, in April 2023 the Council awarded a new cost estimating contract to a separate consultant.
- **Nonconformance Process.**
  - The Report suggests that the Contractor should pay for additional testing, reviews, engineering, or design resulting from nonconforming work. However, under the terms of the civil construction contract, these costs can only be considered when the non-conforming work is used as-is or not corrected; the Council is tracking nonconformance reports applicable to this contract provision. The Council does not consider this recommendation to be actionable for nonconforming work that is corrected.
  - The Council's documentation of nonconforming work complies with applicable Federal requirements and guidance. The Council takes project oversight seriously which is why it retained experts in construction law, scheduling, claims resolution, forensic engineering, construction management, and quality assurance to advise the Project team and Council management on complex construction issues. The Council also reviews nonconforming issues regularly with the FTA.
- Minnesota Department of Transportation ("MnDOT") Coordination. The Council worked closely with MnDOT during its Peer Review addressing construction management methods, change order processes, and contractor oversight. The Council is committed to continuous improvement which is exemplified by the implementation of Peer Review recommendations, including procuring new construction cost-estimating services. Furthermore, the Council intends to review applicable recommendations by MnDOT, and within the Report, for contract changes on future projects.

In closing, I would like to reiterate my appreciation for the opportunity to respond. The Council has a proven track record for delivering significant Transitway projects which are significant investments that improve our transportation system and advance the region's vision for the future.

Sincerely,



Charles A. Zelle  
Chair

Attachment: Technical Response to the final Report "*Southwest Light Rail Transit Construction: Metropolitan Council Oversight of Contractors*"

**Metropolitan Council's Technical Response to the Final Report**  
***"Southwest Light Rail Transit Construction: Metropolitan Council Oversight of Contractors"***

**June 23, 2023**

**Contract Compliance.** The Report recommends that the Council withhold payments to the contractor to compel them to submit technical data more quickly for change requests. The Report, however, does not explain how the timing would materially impact the Project.

Footnote 6 in Chapter 2 identifies "multiple" change orders as "particularity costly"; however, the Council considers all but two change orders (CHG 552 which is a liquidated damage deduction as a result freight rail delays and CHG 703 which addressed replacement of unsuitable soils) to be either costly, complex, or both costly and complex. This context is important for understanding why the Council would permit additional time for the contractor to submit technical data.

- When the contractor delays providing backup information for a change order, the resolution of the change order and any payment to the contractor are delayed. Withholding payment for work performed to penalize a contractor's delayed submittal would not serve a productive purpose in resolving outstanding change orders which is why it is not an industry standard on complex construction projects. There is also a risk that the contractor would stop work and litigate the matter, causing additional project delays and cost. The Council has retained and regularly engages outside legal counsel and construction claims consultants to advise on matters related to contract compliance.
- Regarding Time Impact Analysis ("TIA")<sup>1</sup>, under Civil Contract Specifications Section 01 32 16 Construction Schedules and Reports, Article 1.09.JJ, LMJV is required to submit a TIA for *"any excusable delay for which the Contractor is requesting additional Contract Time in accordance with Document 00700, Article 11 of the Contract Documents."* This means a TIA is only required for changes for which the contractor believes it is entitled to an extension of time. There were many changes which did not result in an excusable delay to the Project and therefore TIAs were not required.

**Schedule Delays.** The Report implies that resolving schedule delays before approving change orders is a standard practice. The recommendation that the Council resolve schedule delays before approving change orders is not consistent with industry practices, especially for a complex project of this scale with many significant changes. The Report's statement that federal law suggests costs and delays to be resolved during the negotiation process omits the full context of the federal regulation which in fact provides sample language contemplating the inclusion of reservations in change orders (48 CFR, sec.

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<sup>1</sup> A time impact analysis is a method used to determine the extent of the impact that a change order will have on the contractor's schedule.

43.204(c)). The cited regulation included in the Report is not binding on the Council and is merely guidance.<sup>2</sup>

The Corridor Protection Barrier (CPB) and secant wall change orders provide examples for why resolving schedule delays before approving change orders would be damaging to the Project. Had the Council waited to execute the CPB and secant wall change orders until the re-baselined schedule was agreed to, execution of the CPB change order would have been delayed by 328 days and the secant wall change order by 177 days.

FTA was routinely consulted with and supportive of the Council's strategy to enter into a Settlement Agreement establishing a re-baselined schedule. This resulted in a streamlined turnover sequence which mitigated delay to the start of the follow-on systems contract work and the Project's completion date. The Council's claims and schedule consultant estimates that the re-baselined schedule mitigated the overall delay to the Project by at least two years. It would have been far more difficult, if not impossible, to implement an efficient turnover sequence if the schedule delays for each change order were resolved individually.

**Settlement Agreement.** The Report's conclusion that the Council failed to hold the contractor to the submittal requirements included in the civil construction contract disregards the thorough evaluation of the contractor's cost and schedule impacts performed pursuant to the terms of Settlement Agreement. The Report statement that the OLA is unable to assess whether the alternative dispute resolution process in the Settlement Agreement would provide the Council with additional tools for resolving future disputes is quite surprising given the information the Council provided to the OLA. In addition to interviews with the Council's outside counsel and construction accounting expert, the OLA was provided with "SWLRT Civil Construction Settlement Agreement Executive Summary" on January 6, 2023. The processes established through the Settlement Agreement provide undisputed best practice for dispute resolution while construction is ongoing. The Settlement Agreement also benefited both Council and contractor by clearing a backlog of change orders.

The Settlement Agreement closes all reservations for future cumulative impact arguments related to the changes incorporated into the re-baselined schedule, establishes a process for the Council to vet the contractor's costs using industry-recognized experts, and provides a framework for resolving future issues efficiently without protracted litigation. The Settlement Agreement minimized the overall cost and schedule risks, resulted in continued construction during dispute resolution, and advanced the Project towards revenue service.

The Report states that the Council disregarded "missing documentation" for the open changes; this is incorrect. These open changes were resolved in accordance with the process in the Settlement

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<sup>2</sup> The Federal Transit Administration Q & A on FAR as Guidance for Grantees provides: "Grantees are not required to comply with the FAR. When the FAR is cited in the FTA's Best Practices Procurement Manual (or "BPPM"), it is done so that grantees may see how the Federal government treats a given issue. Grantees may learn something that will be useful from the FAR, and if so, they may use the FAR technique or modify it to suit their own particular situation. Grantees may also review the FAR and find that it offers nothing helpful for their particular problem, in which case grantees are free to ignore the FAR approach." <https://www.transit.dot.gov/funding/procurement/third-party-procurement/far-guidance-grantees>

Agreement and did not require the documentation which OLA characterized as “missing”. The settlement benefited both Council and contractor by clearing a backlog of change orders.

**Deficient Independent Cost Estimating (“ICE”) Performed by AECOM<sup>3</sup>.** The Report’s conclusions regarding ICEs and potential misuse of funds omits the Council’s attempt to work collaboratively with AECOM to improve the quality of estimates and does not address AECOM’s refusal to accept Council’s input to improve the quality of the ICEs, even when the ICE missed scope elements or underrepresented costs. The Report notes that AECOM’s estimates did not adequately consider conditions in the field encountered during construction. For the SWLRT Project, these include low productivity due to site constraint restrictions, downtime due to train delays, and low productivity and downtime due to noise and vibration mitigation.

The Report suggests that the Council inflated its cost estimates by “systematically applying” production factors to estimates. These factors were recommended by AECOM in its December 21, 2020, letter proposing process changes for preparing ICEs. In the letter, AECOM’s Project Manager endorsed the estimating factors as *“a method that I have used on previous projects [...]”*

The Report omits that in May and June 2021, AECOM notified the Council of its refusal to utilize the production factors it had previously endorsed and further asserted that Council’s input on estimates undermined the independence of the estimates. The Council is within its rights to incorporate appropriate and applicable cost data into its ICEs. There is no contractual basis for AECOM asserting that the Council has no right to review and comment on AECOM’s estimates, especially when they are demonstrably incorrect. As the Council noted in its August 2021 letter to AECOM: *“the cost estimate is independent because it is performed independently from the Contractor’s proposal... not because or if it is performed by a consultant without government input,”* a statement supported by FTA guidance<sup>4</sup>.

The MnDOT Peer Review highlights a variety of reasons Project ICEs have been historically deficient. As noted, deficiencies in the construction cost estimating process may have included overreliance on computer estimating software and/or under reliance on field conditions. Additionally, the Peer Review recommended that the Council hire separate consultants for the engineering services and construction cost estimating services. The Council has already implemented this by awarding a new cost estimating contract to a separate consultant.

The Report suggests that the Council should have terminated the cost-estimating portion of its contract with AECOM earlier yet does not reference the unique external circumstances that were occurring at the same time as the disputes over AECOM’s cost-estimating work. Specifically, the OLA began investigating the cost-estimating dispute between the Council and AECOM in 2021, and the Legislature enacted a bill requiring a special review on the Project including cost estimating techniques in 2022.

**Change Orders and Cost Analysis.** The Report draws inaccurate conclusions about change order negotiations with the contractor. The Council disagrees with the interpretation of federal guidance

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<sup>3</sup> AECOM Technical Services, Inc. (AECOM) was the Metropolitan Council’s primary cost estimating consultant from the beginning of construction through mid-2023.

<sup>4</sup> <https://www.transit.dot.gov/funding/procurement/third-party-procurement/independent-cost-estimate>

**related to the Council's analysis of the contractor's costs.** The Report analyzes 16 change orders which are used to make broad conclusions without actionable recommendations.

The Council was unable to validate any of the conclusions based on the limited information in the Report. For example, the Report states *"For five of the change orders we reviewed, the Metropolitan Council agreed to pay the civil construction contractor what it requested with little or no explanation for the Council's conclusion that the proposed costs were reasonable."* The Report does not identify which change orders were selected from the 16 analyzed and provides little or no explanation for the conclusion, nor does it include audit methodology for which the OLA analyzed the Council's data.

The Report's analysis of pricing data concluded that for 201 out of 404 change orders with a change proposal, the Council agreed to pay the contractor for the amount the contractor proposed. This conclusion omits that for 73 of the 201 changes the contractor's estimate was *lower than* the Council's estimate and 30 of the 201 changes were based on the contractor's actual cost.

The Report introduces a concept of an "Alternative Change Order Process" which is not a term recognized by the Council and could lead the reader to conclude it is not a standard construction practice. However, a two-part change order process is included in the civil construction contract specification 01 26 63, section 3.02. The Report also suggests that the Council is not in compliance with FTA requirements because the Part-1 change does not set the maximum amount for the change work. The Report cites the FTA's Best Practices Procurement & Lessons Learned Manual ("BPPM") for its source of this approach. First, the BPPM is not a regulation; it is a best practices guide. Second, the Council's contract requires the contractor to notify the Council if expenses are approaching the cost limit set by the Part-1 change order or if it determines the cost limit will be insufficient to cover its costs.

The Council is concerned that the Report's oversimplification of the data and change management process could lead readers to draw incorrect conclusions about the Council's change management practices. Furthermore, the Report concludes that the Council's fair and reasonable determinations are not well documented and lack detail. This conclusion, however, is not supported by the Project record. The federally required cost analysis, which documents the analysis of whether changes are fair and reasonable, is included with every executed change order.

**Disadvantaged Business Enterprise ("DBE")**. The Report characterizes the Council's practice of including a DBE allowance in its estimates as less "sensible." The Council takes DBE participation seriously and encourages the use of DBEs for change order work which is evidenced by the standard practice of including a DBE allowance in ICEs.

The Report also takes issue with the use of a DBE subcontractor to perform curb and gutter work at Eden Prairie Town Center Station, when the contractor's own crews could perform this work at a lower cost. The Report states that the contractor did not submit any documentation to demonstrate why the higher amount for the DBE subcontractor was appropriate. The guidance to the Federal DBE regulations recognizes that at times a DBE may be more expensive and that a contractor may not use the fact that it can self-perform work as a reason for not using a DBE. Specifically, in the context of evaluating whether a contractor who doesn't meet the numeric goal made good faith efforts to meet the goal, Appendix A to 49 CFR Part 26 provides: *"the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract*

*with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.”*

**Nonconformance Report (“NCR”) Process. The Report’s conclusions regarding NCRs demonstrate a lack of understanding of the NCR and payment application processes.**

- The assumption that payment and estimating documentation is always required as part of the NCR process is not correct. The purpose of the NCR process is to determine an acceptable technical action, such as use as-is, remove and replace, rework, or repair. Payment and estimating documentation are not required when making this technical determination. Furthermore, the conclusion that the Council does not document whether the contractor paid to repair nonconforming work demonstrates the OLA’s lack of understanding of the contract and applications for payment. There is no contractual requirement to track the costs expended by the contractor to repair, rework, or replace nonconforming work; this is not a contract requirement because it does not serve a public purpose. The contractor cannot be paid for work that is not included in its bid or added as a change order.
- The Report states: *“Several nonconformance reports we reviewed led the Council to conduct additional testing, reviews, engineering, or design.* The civil construction contract states the contractor must pay for ‘claims, costs, losses, and damages caused by or resulting from’ the correction or removal of defective work.” (Emphasis added.) It is inaccurate to imply that the OLA’s review led the Council to conduct additional testing. Furthermore, under the terms of the Council’s contract with the contractor, these costs can only be considered when the non-conforming work is used as-is or not corrected; the Council is tracking nonconforming work applicable to this contract provision. The Council does not consider this recommendation to be actionable for nonconforming work that is corrected.
- Regarding the Currie Building, the Report states that the *“Council has not analyzed the contractor’s excavation work that was occurring prior to the damage; such an analysis would be important to demonstrate whether the contractor bears responsibility for the building settlement.”* The Council prioritized the repairs to ensure the structural integrity of the building and reserved the right to seek remedies from the contractor on this matter. The Council has retained a forensic engineer and outside legal counsel who are actively investigating and advising on this matter.

**Documentation. The Report identifies several instances where, in the opinion of the OLA, the Council lacks proper documentation but offers no reasonable standard by which it believes the Council should adhere. The Council’s document management is consistent with industry standards and appropriate for a project of this size.** The Project records will fully support the ability to process deductive change orders. The Report’s suggestion that the Council’s production of emails in response to a data request demonstrates the Council’s document management system is inadequate or unorganized is not factually accurate. This production was in response to a broad data request for “any documentation such as meeting minutes, internal emails, etc.” The production was organized by Bates numbers which is the common practice for document production.

The Project maintains documentation pursuant to its Document Management and Control Plan, Project Management Plan Appendix 11-A, which was reviewed by the FTA, to ensure control and management of project records. The document management system complies with:

- FTA Circular C.5010.1E Award Management Requirements;
- CFR Title 2 Grants and Agreement, subtitle A OMB Guidance for Grants and Agreements, Chapter II, Part 200 Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, Subpart D Post Federal Award Requirements, Section 200.333 to 200.337 Records Retention;
- FTA Master Contract, Chapters 8-9; and
- Metropolitan Council Procedure 2-6a Records Management, Policy 3-9 Document Management.



## Recent OLA Evaluations

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*Pesticide Regulation*, March 2020  
*Agricultural Utilization Research Institute (AURI)*,  
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*Agricultural Commodity Councils*, March 2014

### Criminal Justice and Public Safety

*Driver Examination Stations*, March 2021  
*Safety in State Correctional Facilities*, February 2020  
*Guardian ad Litem Program*, March 2018  
*Mental Health Services in County Jails*, March 2016  
*Health Services in State Correctional Facilities*,  
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### Economic Development

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*Minnesota Research Tax Credit*, February 2017  
*Iron Range Resources and Rehabilitation Board (IRRRB)*,  
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*Collaborative Urban and Greater Minnesota Educators  
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*Compensatory Education Revenue*, March 2020  
*Debt Service Equalization for School Facilities*,  
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*Early Childhood Programs*, April 2018  
*Perpich Center for Arts Education*, January 2017  
*Standardized Student Testing*, March 2017  
*Minnesota State High School League*, April 2017  
*Minnesota Teacher Licensure*, March 2016

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*Public Facilities Authority: Wastewater Infrastructure  
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*Recycling and Waste Reduction*, February 2015  
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### Financial Institutions, Insurance, and Regulated Industries

*Department of Commerce's Civil Insurance Complaint  
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*Mineral Taxation*, April 2015  
*Councils on Asian-Pacific Minnesotans, Black  
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### Health

*Emergency Ambulance Services*, February 2022  
*Office of Health Facility Complaints*, March 2018  
*Minnesota Department of Health Oversight of HMO  
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*Minnesota Health Insurance Exchange (MNSure)*,  
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*Minnesota Board of Nursing: Complaint Resolution  
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### Human Services

*Child Protection Removals and Reunifications*, June 2022  
*DHS Oversight of Personal Care Assistance*, March 2020  
*Home- and Community-Based Services: Financial  
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*Managed Care Organizations' Administrative Expenses*,  
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### Jobs, Training, and Labor

*Unemployment Insurance Program: Efforts to Prevent  
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### Miscellaneous

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*State Programs That Support Minnesotans on the Basis  
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*Minnesota Department of Human Rights: Complaint  
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*Public Utilities Commission's Public Participation  
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*Economic Development and Housing Challenge Program*,  
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*Minnesota State Arts Board Grant Administration*,  
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*Board of Animal Health's Oversight of Deer and  
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*Voter Registration*, March 2018  
*Minnesota Film and TV Board*, April 2015

### Transportation

*Southwest Light Rail Transit Construction: Metropolitan  
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*Southwest Light Rail Transit Construction: Metropolitan  
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*MnDOT Workforce and Contracting Goals*, May 2021  
*MnDOT Measures of Financial Effectiveness*,  
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*MnDOT Selection of Pavement Surface for Road  
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LEGISLATIVE AUDITOR



Office of the Legislative Auditor  
Suite 140  
658 Cedar Street  
Saint Paul, MN 55155