



Southwest Light Rail Transit: Project Budget and Timeline

SPECIAL REVIEW
September 2022

OFFICE OF THE LEGISLATIVE AUDITOR
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September 2022

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Both before and after the beginning of construction in 2019, the Metro Green Line Extension—also known as Southwest Light Rail Transit (Southwest LRT)—encountered numerous delays and cost overruns.

Since 2011, the cost of the Southwest LRT project has more than doubled, and the line's opening date has been delayed by nine years. More than \$500 million of the project's estimated \$2.74 billion budget is currently unfunded, and the Metropolitan Council—the agency responsible for overseeing the design, engineering, construction, and future operation of the light rail line—has not yet identified a funding source.

Three factors have been key drivers of project delays and cost increases: (1) uncertainty about the final location of freight rail along the project's alignment, (2) the construction of a light rail tunnel in Minneapolis's Kenilworth Corridor, and (3) the need for a concrete barrier wall between freight rail and light rail traffic along a portion of the alignment.

This special review was conducted by Katherine Theisen (Special Reviews Director) and Lucas Lockhart. The Metropolitan Council cooperated fully with our review, and we thank them for their assistance.

Sincerely,

Handwritten signature of Judy Randall in black ink.

Judy Randall
Legislative Auditor

Handwritten signature of Katherine Theisen in black ink.

Katherine Theisen
Director, Special Reviews



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INTRODUCTION

The Metro Green Line Extension, also known as Southwest Light Rail Transit (Southwest LRT), will connect downtown Minneapolis to the suburban communities of Eden Prairie, Hopkins, Minnetonka, and St. Louis Park. The project includes the construction of 16 new transit stations, 2 light rail tunnels, and a 14.5-mile light rail track. Exhibit 1 shows the route of the Southwest LRT line. The Metropolitan Council, in consultation with county and municipal authorities, is the agency responsible for overseeing the design, engineering, construction, and future operation of the light rail line.¹

Both before and after the beginning of construction in 2019, Southwest LRT encountered numerous delays and cost overruns. In response to these well-publicized challenges, the Minnesota Legislature directed the Office the Legislative Auditor (OLA) in March 2022 to “conduct a special review, program evaluation, or a combination of the two, of the Southwest light rail transit project.”²

This special review describes the timing and scope of cost overruns and project delays. Additionally, as encouraged by the law, this special review presents:

- The primary reasons for cost overruns and project delays, according to Metropolitan Council officials.
- The current estimated project budget.
- The amount of funding committed to the project by Hennepin County and other government entities.
- The factors Hennepin County would have to consider if the Metropolitan Council requests additional funding for Southwest LRT construction.
- The balance of the project’s contingency funds.
- The project’s timeline.
- Changes to the project’s schedule.³

To conduct this review, we examined Hennepin County, Hennepin County Regional Railroad Authority (HCRRA), and Metropolitan Council transit studies and planning documents; media reports and press releases; and Metropolitan Council policies, resolutions, budget documents, meeting minutes, presentations, and data. We also

¹ The Metropolitan Council is governed by a board of 16 members and a chair, all of whom are appointed by the governor, with the advice and consent of the Minnesota Senate. Unless we specify that an action was taken by the governing body, our references in this report to the Metropolitan Council pertain to the agency.

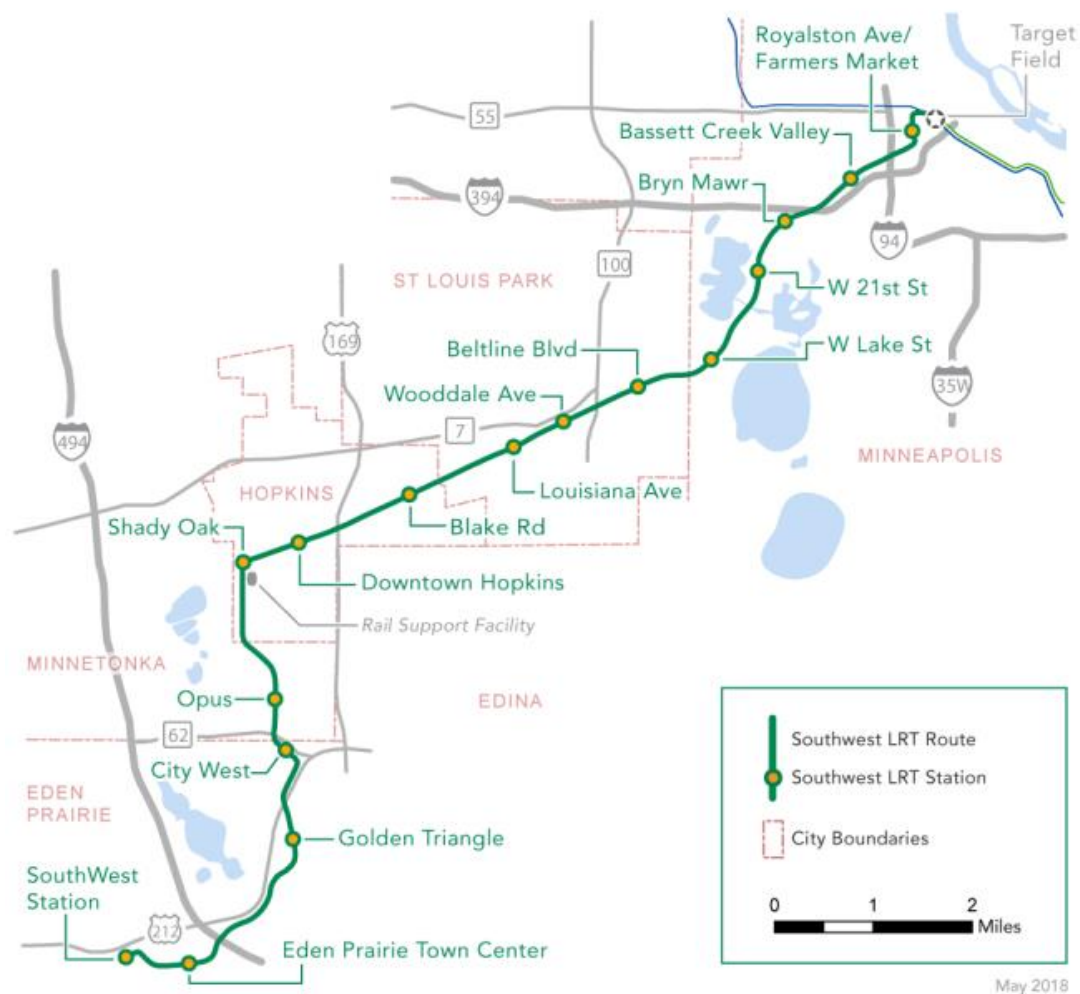
² *Laws of Minnesota 2022*, chapter 39, sec. 1(a).

³ These topics reflect, in whole or in part, the topics specified in *Laws of Minnesota 2022*, chapter 39, secs. 1(b), 1(c)(4), and 1(c)(8)-(12).

reviewed federal laws and guidance related to the New Starts Capital Investment Grants Program, toured the Southwest LRT corridor, and interviewed Hennepin County and Metropolitan Council officials.

This was a limited review; we did not examine many topics of interest to legislators and the public. We did not evaluate whether cost overruns or project delays were justified. We also did not evaluate the quality of project designs or engineering; the adequacy of the route-selection process; or whether different designs, engineering, or routes could have resulted in lower costs or fewer delays.

Exhibit 1
Southwest LRT Route



Source: Jim Alexander and Nick Thompson, "Metropolitan Council Meeting," (slide deck, Metropolitan Council, St. Paul, January 26, 2022), 4.

This report is one in a series of OLA reports on Southwest LRT. In October 2021, OLA published a memorandum summarizing a dispute between the Metropolitan Council and the project's design contractor, AECOM Technical Services, Inc.⁴ An upcoming program evaluation, scheduled for release in early 2023, will explore additional aspects of the Southwest LRT project.

In this report, we present questions and answers organized into two larger categories: project budget and project timeline. Additionally, Appendix A defines key terms used in this report and in public discussions of the project; Appendix B provides a detailed timeline of the Southwest LRT project, from the 1980s to 2022; and Appendix C describes the federal grant process that established key milestones for the development of the Southwest LRT project.

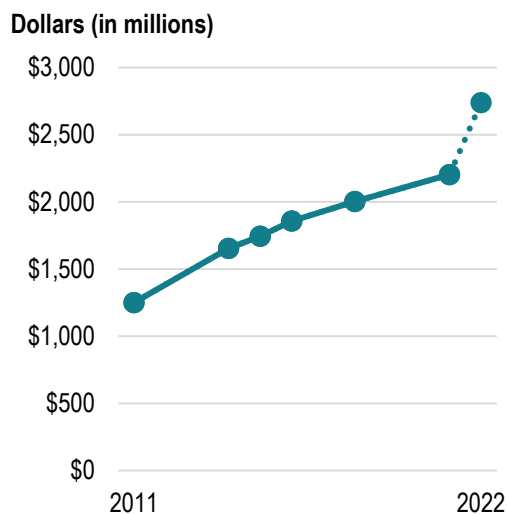
⁴ Joel Alter, Director of Special Reviews and Interim Legislative Auditor, Office of the Legislative Auditor, memorandum to Senator Scott Dibble and Representative Frank Hornstein, *Southwest Light Rail project costs and management*, October 28, 2021.



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PROJECT BUDGET

Exhibit 2
**Estimated Cost of Southwest LRT,
2011 to 2022**



Notes: These estimates reflect year-of-expenditure dollars; see footnote 6. At the time this report was published, the Metropolitan Council’s governing body had not yet formally adopted the 2022 estimate.

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

March 2022, the federal government was the largest source of funding for the project, representing 35 percent of the approximately \$2.74 billion project budget estimate.

What is the total budget for Southwest LRT, and how has it changed over time?

In 2011, the Federal Transit Administration approved the Metropolitan Council’s application to pursue funding for Southwest LRT through a federal grant program.⁵ In that year, the Council projected that the line would cost \$1.25 billion and that it would begin service to the public in 2018.⁶

Since 2011, the Metropolitan Council has increased its estimate of the project’s cost several times, as Exhibit 2 shows. By March 2022, the Council’s projected budget for the line was approximately \$2.74 billion for a 2027 opening date. At the time this report was published, the Metropolitan Council had not yet determined the exact cost of the project, and its governing body had not formally adopted a revised estimate.

Who is paying for Southwest LRT?

Funding for Southwest LRT has come from the Counties Transit Improvement Board (CTIB), the federal government, Hennepin County, HCRRA, the State of Minnesota, and four of the five cities that encompass the Southwest LRT corridor.⁷ As Exhibit 3 shows, in

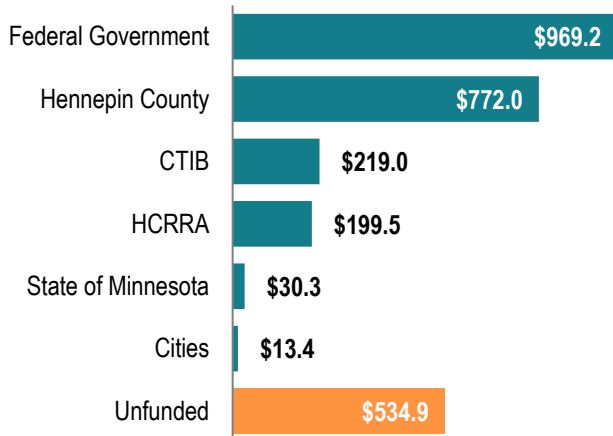
⁵ During the early 2010s, HCRRA and the Metropolitan Council both worked on the development of Southwest LRT. HCRRA is a political subdivision and local government unit of Minnesota that conducts certain planning activities and provides funding for light rail and other major transit capital projects in Hennepin County. (See Appendix A for more information.) Through December 2012, HCRRA was the lead local agency responsible for analyzing the environmental impacts of Southwest LRT, which it did in close consultation with the Council. Because the Metropolitan Council was to be the agency responsible for designing, engineering, and constructing Southwest LRT, it applied to the Federal Transit Administration for approval to begin seeking federal funding for the project. HCRRA assisted the Council in developing that application.

⁶ Project cost estimates in this report reflect “year-of-expenditure” dollars. These dollars are the actual expenses the Metropolitan Council had incurred for the Southwest LRT project at the time it made the overall budget estimate, summed with projected future expenditures that the Council adjusted for inflation.

⁷ CTIB was formed in 2008 when five metropolitan counties (Anoka, Dakota, Hennepin, Ramsey, and Washington) entered into a joint powers agreement and approved a transit-dedicated sales and use tax of one-quarter of one-percent and an excise tax of \$20 per motor vehicle. Through the joint powers agreement, the board managed the proceeds of the tax until the board’s dissolution in 2017. The four cities that have provided funding for Southwest LRT are Eden Prairie, Hopkins, Minnetonka, and St. Louis Park. Southwest LRT also runs through Minneapolis; that city has not provided funding for the project.

Exhibit 3
Sources for the Southwest LRT Project Budget,
March 2022

Dollars (in millions)



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

The majority of the federal contribution (96 percent) comes from the New Starts Capital Investment Grants (New Starts) program.⁸ Other federal grants made up 4 percent of the federal source of funding for the Southwest LRT project.

After the federal government, Hennepin County was the next largest contributor to the Southwest LRT project budget, as of March 2022. At that time, Hennepin County had committed \$772.0 million, 28 percent of the project budget.

Prior to 2017, Hennepin County had not directly committed funding to the Southwest LRT project. Instead, it participated in CTIB, which funded transit projects such as the Southwest LRT project within the Twin Cities metropolitan area.

CTIB dissolved in 2017. In the same year, Hennepin County assumed the unpaid funding commitments of CTIB—and the remaining balance of the state’s share of the capital costs of the Southwest LRT project.⁹ Additionally, in 2018, Hennepin County committed to funding the first 10 percent (\$200.3 million) of cost overruns on the project. In August 2021, Hennepin County made these funds available to the Metropolitan Council to shore up the Southwest LRT project’s contingency fund.

According to a Hennepin County official, the county anticipates that it would be challenging for the county to accommodate additional requests to provide capital costs for Southwest LRT. Statutes restrict how the county uses the revenue it raises for transit

⁸ The New Starts program is a competitive grant program that provides federal funding for state and local transit capital investments, including heavy rail, commuter rail, light rail, streetcars, and bus rapid transit. We provide more information about this program in Appendix C.

⁹ When CTIB dissolved, Hennepin County imposed a sales and use tax of one-half of one-percent and an excise tax of \$20 per motor vehicle to pay for transit projects within the county. The Metropolitan Council had planned to issue “certificates of participation”—revenue agreements in which investors provide funds for projects in exchange for scheduled payments from revenues—to pay for a portion of the Southwest LRT project. However, the 2017 Legislature restricted the ability of the Metropolitan Council to issue certificates of participation for light rail transit projects (*Laws of Minnesota* 2017, First Special Session, chapter 3, sec. 119, codified as *Minnesota Statutes* 2021, 473.39, subd. 7). This action resulted in the need for an additional \$103.5 million to meet the capital costs of the project, which Hennepin County agreed to provide. The 2017 Legislature also eliminated the state’s 50 percent share of net operating costs for Southwest LRT, costs which Hennepin County also assumed (*Laws of Minnesota* 2017, First Special Session, chapter 3, sec. 120, codified as *Minnesota Statutes* 2021, 473.4051, subd. 2).

projects.¹⁰ Additionally, the county has made commitments to fund the construction and/or operation of other transit lines using the same revenue sources it has used to fund the construction of Southwest LRT. For example, Hennepin County is responsible for a portion of the operating costs for the Northstar Commuter Rail, Metro Blue Line, and Metro Green Line. Further, Hennepin County has committed to funding a portion of the capital and operating costs for the Metro Blue Line Extension project (also known as the Bottineau Light Rail project), Metro Orange Bus Rapid Transit project, and Riverview Corridor Streetcar project. Hennepin County has also committed to funding a portion of the operating costs for Southwest LRT, and must make debt service payments for funds it borrowed to meet its current funding commitment to Southwest LRT. According to a Hennepin County official, the county would be unable to provide additional funding to Southwest LRT if doing so would impair the county's ability to meet any of these other commitments.¹¹

At the time this report was published, the Metropolitan Council had not secured funding for over \$500 million of the estimated \$2.74 billion cost. This to-be-determined source represents nearly 20 percent of the estimated cost of the Southwest LRT project.

What led to increases in the Southwest LRT project budget?

According to Metropolitan Council officials, one of the key contributors to budget increases so far has been the proximity of the Southwest LRT line to existing freight rail lines. (About half of the 14.5-mile Southwest LRT line is located next to active freight rail lines.) This proximity has resulted in costly scope and design changes and schedule delays.

Exhibit 4 shows a high-level comparison of the Southwest LRT project's scope in 2011 and 2022. Most significantly, in 2011, the Metropolitan Council did not anticipate locating light rail and freight rail lines along the same alignment in parts of Minneapolis and St. Louis Park.¹² As we explain in greater detail on page 18, the decision to colocate the freight and light rail lines had major effects on the cost and timeline of the Southwest LRT

¹⁰ *Minnesota Statutes* 2021, 297A.993, subd. 1, states that counties may “impose (1) a transportation sales tax at a rate of up to one-half of one percent on retail sales and uses...and (2) an excise tax of \$20 per motor vehicle.” The proceeds of these taxes must be dedicated exclusively to the payment of capital costs for a specific transportation project or improvement; capital and/or operating costs of a specific transit project or improvement; general transit operating costs; capital costs of a safe routes to school program; or capital costs for constructing buildings and other facilities for maintaining transportation or transit projects or improvements (*Minnesota Statutes* 2021, 297A.993, subd. 2). Most of the funding provided by HCRRA has been from property tax revenues. Statutes state that county regional railroad authorities, such as HCRRA, “may not contribute more than ten percent of the capital costs of a light rail transit or commuter rail project” or “contribute any funds to pay the operating and maintenance costs for a light rail transit or commuter rail project” (*Minnesota Statutes* 2021, 398A.10, subs. 1 and 2).

¹¹ Hennepin County has obligated funds to the transit lines in this paragraph through grant agreements with the Metropolitan Council and, in some instances, contracts with Anoka County, HCRRA, Ramsey County, and the Ramsey County Regional Rail Authority.

¹² As we discuss on pages 18-24 of this report, early plans for Southwest LRT assumed that an existing freight rail line would be moved to make way for the light rail along portions of the alignment in Minneapolis and St. Louis Park. These plans were recommended by HCRRA—and adopted by the Metropolitan Council's governing body in 2010—as the “locally preferred alternative.” The locally preferred alternative is the mode of transportation (such as commuter train, bus, or light rail) and route selected by local and/or regional authorities for a future transit project.

Exhibit 4
Southwest LRT Project Scope, 2011 Compared to 2021

| Project Element | 2011 | 2021 |
|-------------------------------------|--|--|
| Stations | 17 stations, 15 of which were park-and-ride facilities with 3,500 total parking spaces | 16 stations, 9 of which were park-and-ride facilities with 2,500 total parking spaces |
| Length (miles) | 15.8 | 14.5 |
| Tunnels (count) | 1 (located near Target Field in Minneapolis) | 6 pedestrian, 2 light rail (1 under Trunk Highway 62 and 1 in the Kenilworth Corridor) |
| Operations and maintenance facility | New facility included in scope | Modifications to an existing operations and maintenance facility included in scope |
| Light rail vehicles | 26 | 27 |
| Location of freight rail | 4.3 miles of relocated freight rail in portions of Minneapolis and St. Louis Park to occur in a separate project | 7.8 miles of shared light rail and freight rail corridor |

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

project, including the addition of a nearly half-mile long tunnel through a narrow corridor in Minneapolis known as the Kenilworth Corridor.

Delays have increased the cost of the Southwest LRT project; the timeline for completing the line directly affects several elements of the Metropolitan Council's estimates of the project's total cost. For example, the Council's budget estimates include costs to purchase materials, which have increased over time. The budget also includes costs to retain consultants and construction contractors who design, build, and inspect the light rail line. The cost of consultants and construction contractors is based in part on the duration of their work, so delays to the project timeline have increased the total cost of the project. In addition, delays to the project timeline have meant that the Council has had to account for an escalation in property values within the right-of-way and the extension of leases for the project office, among other things. Later in this report we explain key factors that have led to delays in completing Southwest LRT.

In January 2022, the Metropolitan Council announced that the completion of the line would be delayed from 2023 to 2027. It estimated that construction-related delays—and adequate contingency funds to pay for future changes to the project—would cost an additional \$450 to \$550 million, raising the estimated cost of the project from \$2.20 billion to approximately \$2.74 billion.

In March 2022, the Metropolitan Council and construction contractor Lunda-McCrossan Joint Venture reached a settlement agreement, costing up to \$210 million in contingency funds, to resolve issues related to project changes and delays.¹³ The settlement agreement

¹³ The projected cost of this settlement agreement is included in the Council's estimate of the additional \$450 to \$550 million it needs to complete the project. Contingency funds are used in civil construction projects to pay for unplanned costs due to weather delays; higher than anticipated costs for material, labor, or equipment; and unanticipated design changes; among other things. We discuss Southwest LRT's contingency funds on page 12 of this report.

established a schedule and sequence for completing segments of the Southwest LRT line, and provided a mechanism for the Council and its construction contractor to settle costs associated with the delay.

Because the settlement agreement with the construction contractor established a new timeline for completing construction on Southwest LRT, the Metropolitan Council has also needed to renegotiate contracts with other contractors based on the new timeline. As of July 2022, the Council was still in the process of negotiating contract amendments with these other contractors.

What changes has the Metropolitan Council approved during construction, and how much have they cost?

The Metropolitan Council awarded the project's civil construction contract to Lunda-McCrossan Joint Venture in November 2018 and construction began in 2019. The civil construction contract identified the project's scope, budget, and timeline; changes to the project's scope, budget, and timeline were to occur through approval of "change orders."

The box to the left provides more information about change orders.



Change orders allow the Metropolitan Council and its contractors to change the scope, terms, or conditions of the project as defined in construction contracts. Change orders can add, eliminate, or alter the work to be performed by a contractor and can affect the overall project budget and schedule.

The Metropolitan Council has established a process for proposing and authorizing change orders for the Southwest LRT project. The persons or entities with authority to approve change orders vary, depending on the proposed change order's cost. For example, the Metropolitan Council's governing body must approve any change that costs more than \$2.5 million.

As of April 29, 2022, the Metropolitan Council had approved 622 change orders, with a net cost of \$225 million.¹⁴ Most change orders resulted in additional costs; 81 percent of the 622 approved change orders either withdrew money from the project's contingency fund or were funded by external sources, such as one of the five cities through which Southwest LRT will run. However, some change orders (19 percent) resulted in credits, returned money to the contingency fund or external sources, or had no impact on project costs. Individual change orders ranged from a credit of \$2.5 million to a cost of \$82.6 million.

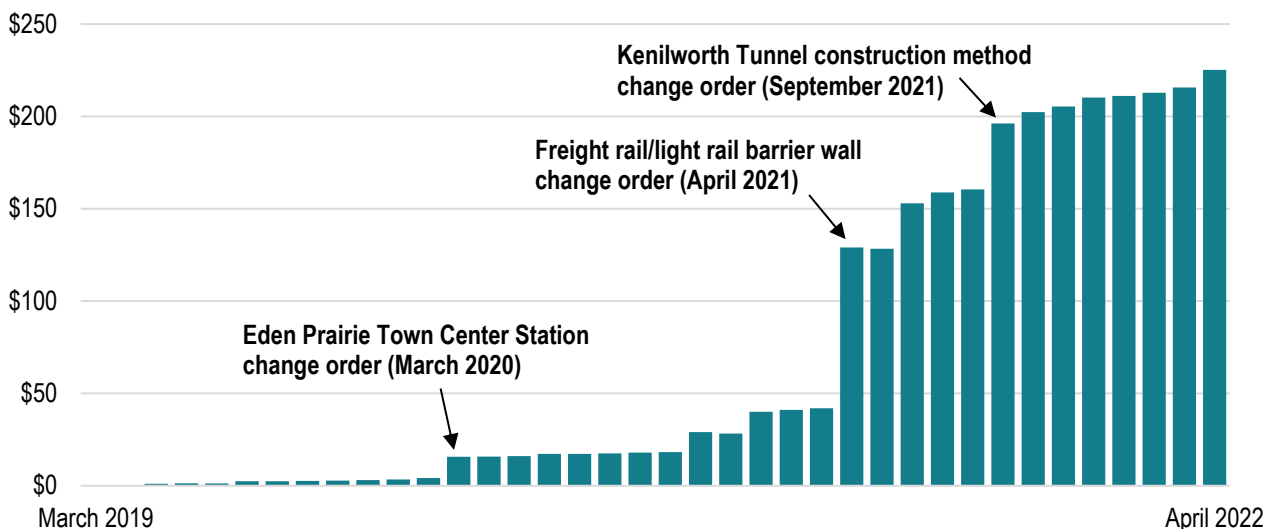
As Exhibit 5 shows, the total cost of executed change orders rose dramatically in April 2021 and September 2021 due to specific changes to the project's scope during construction. We discuss these change orders—and one less expensive but impactful change order approved in March 2020—under the next question.

¹⁴ Seventy-three percent of the 622 change orders pertained to the civil construction contract, 20 percent to modifications of the operations and maintenance facility, and 6 percent to the systems contract. The Council authorizes changes to other contracts through contract amendments.

Exhibit 5

Cumulative Cost of Change Orders by Month, March 2019 to April 2022

Dollars (in millions)



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

Which change orders have had the most significant impact on the Southwest LRT project's cost?

Three change orders alone accounted for over half of the \$225 million net cost of the change orders the Metropolitan Council has approved since the beginning of construction. As we will explain in more detail later in this report, these changes have caused delays to the project's timeline, which also affected the project's overall cost. These changes were:

- The addition of a previously deferred station in Eden Prairie.
- The extension of a concrete barrier wall between freight rail and light rail lines in Minneapolis.
- A change in the construction method for the tunnel through the Kenilworth Corridor in Minneapolis.

Exhibit 6

**Eden Prairie Town Center Station,
June 2022**

Source: Metropolitan Council, *Metro Green Line Extension Light Rail Transit Project, Report No. 128* (St. Louis Park, June 2022), 35.

Addition of a previously deferred station in Eden

Prairie. When the Metropolitan Council began overseeing the design of the Southwest LRT line in 2011, the Eden Prairie Town Center Station was included in the project's scope. However, in response to the escalating estimated costs of the project, the Metropolitan Council's governing body removed the Eden Prairie Town Center Station from the project's scope in 2015, deferring its completion to a later date.¹⁵ In March 2020, the Metropolitan Council's governing body added the Eden Prairie Town Center Station back into the scope of the project, after the City of Eden Prairie committed funding for the station. The change cost \$11.4 million, \$4.1 million of which was from the contingency fund, and \$7.3 million from a federal grant and the City of Eden Prairie.

Extension of a concrete barrier wall. In negotiations with the BNSF Railway Company (BNSF) to use its right-of-way for the Southwest LRT project, the Metropolitan Council agreed to extend by about one mile a concrete barrier wall that separates freight rail and light rail tracks in Minneapolis. This change, formally approved in April 2021, cost \$82.6 million. The Council used money from the project's contingency fund to pay for the change.

Change to the method used to construct a tunnel in the Kenilworth Corridor.

The Council's construction contract with Lunda-McCrossan Joint Venture originally called for the contractor to build a light rail tunnel through the Kenilworth Corridor using a sheet pile support structure.¹⁶ However, the construction of the tunnel has been beset by problems. According to a Metropolitan Council official, the contractor had trouble pressing the sheet piles into the soil due to cobbles and boulders, causing the contractor to drill into the ground to assist the sheet pile installation. Additionally, some sheet piles split when they were installed. These issues resulted in water leakage and soil settlement and required additional work to stabilize the soil around the freight rail line. In the end, the sheet piling process took twice as long as anticipated.

Exhibit 7

**Freight Rail/Light Rail Barrier Wall,
June 2022**

Source: Metropolitan Council, *Metro Green Line Extension Light Rail Transit Project, Report No. 128* (St. Louis Park, June 2022), 50.

¹⁵ The Metropolitan Council's governing body deferred this station upon the recommendation of the Southwest LRT Corridor Management Committee, a committee primarily made up of local officials that advises the Council's governing body on the design, construction, and environmental review of the Southwest LRT project. See Appendix A for more information.

¹⁶ Sheet piles are sections of sheet steel with interlocking edges that are driven or pressed into the ground to provide excavation support.

The Metropolitan Council approved multiple change orders related to these issues, totaling at least \$8.9 million dollars.¹⁷

Then, unanticipated soil-settling during initial tunnel construction necessitated an alternative construction method where the tunnel will run within feet of a condominium building. In September 2021, the Metropolitan Council added an approximately 500-foot-long secant pile wall to the civil construction contract at a cost of \$30 million.¹⁸ The Council used money from the project's contingency fund to pay for the change.

According to Metropolitan Council officials, the addition of the secant pile wall was a major change. Not only did the construction of the secant pile wall require different equipment and crews, the change also prompted the Council and its construction contractor to replan how the contractor would construct the tunnel through Kenilworth Corridor.

Exhibit 8
Secant Pile Wall Construction in Kenilworth Corridor, June 2022



Source: Metropolitan Council, *Metro Green Line Extension Light Rail Transit Project, Report No. 128* (St. Louis Park, June 2022), 47.

What is the balance of the project's contingency fund, and how has it changed over time?

Contingency funds are used in civil construction projects to pay for unplanned costs due to weather delays; higher than anticipated costs for material, labor, or equipment; and unanticipated design changes, among other things.¹⁹ As Exhibit 9 shows, in 2019, the Council budgeted \$204.2 million of contingency funds for the construction of Southwest LRT.

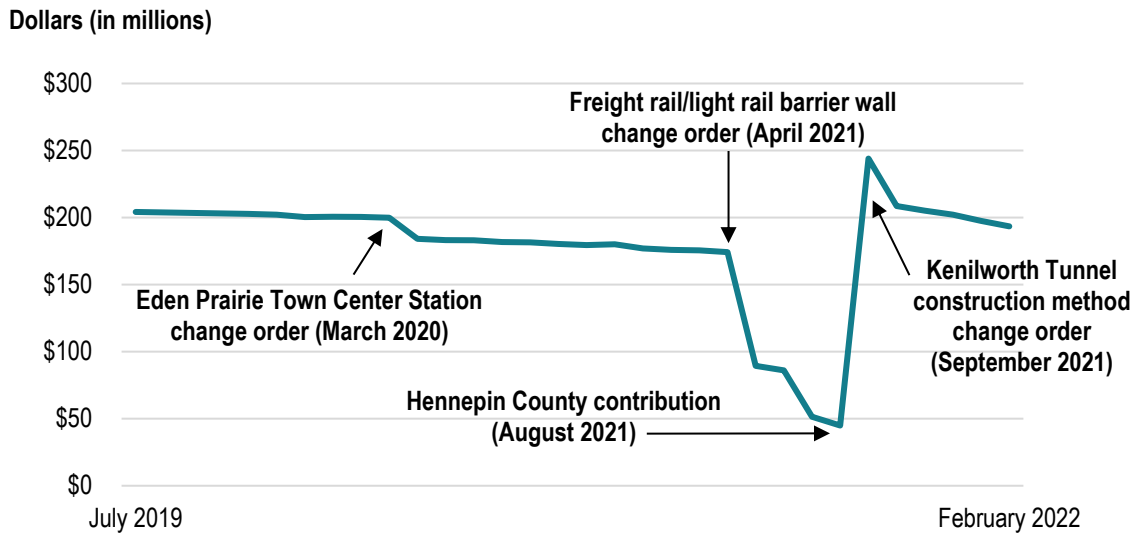
Southwest LRT's contingency funds decreased gradually until April 2021, when the Council's governing body approved a change to the project to extend a planned concrete barrier wall between a BNSF freight rail line and the Southwest LRT line in Minneapolis. In the months that followed, other changes reduced the contingency funds further, leaving the project insufficiently funded in the summer of 2021. In August 2021, Hennepin

¹⁷ The Metropolitan Council's data on change orders is not organized in a way that allowed us to definitively calculate the total cost of change orders for a given segment of the Southwest LRT line.

¹⁸ Secant pile walls are formed by constructing intersecting reinforced concrete piles to provide excavation support. The Metropolitan Council's governing body authorized the change in construction method in August 2021.

¹⁹ The Federal Transit Administration established standards for the percentage of the Southwest LRT project's budget that the Metropolitan Council was required to set aside for contingency. The Federal Transit Administration also dictated targets for a measured draw-down of contingency funds as the project progressed through design and construction. For example, in May 2019, the minimum amount of contingency funds required by the Federal Transit Administration was \$135.0 million; in February 2021, the required minimum amount was \$118.2 million.

Exhibit 9
Available Contingency Funds, July 2019 to February 2022



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

County—the second largest contributor to the Southwest LRT project budget after the federal government—provided an additional \$200.3 million to the Metropolitan Council to shore up the project’s contingency fund.

As of February 2022, the Metropolitan Council had spent \$211.0 million of the \$404.5 million it budgeted for the Southwest LRT project’s contingency fund (the Council’s original \$204.2 million estimate plus Hennepin County’s \$200.3 million contribution). That month, the remaining available balance of contingency funds was \$193.5 million.



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PROJECT TIMELINE

What have been the phases of the Southwest LRT project?

There have been three general phases of the Southwest LRT project: planning, design, and construction. Planning for the Southwest LRT project took over two decades to complete and included HCRRA, Hennepin County, the Metropolitan Council, and other state and local authorities. In 1988, HCRRA identified the area between Hopkins and downtown Minneapolis as a potential light rail corridor. County, state, and local authorities also

explored bus, trolley, and light rail options through the same area in the late 1990s and early 2000s. These studies were the foundation for the Southwest LRT project’s development and eventual construction.

In 2007, HCRRA—with input from the Metropolitan Council, the Minnesota Department of Transportation, the Twin Cities & Western Railroad Company (TC&W), the cities along the proposed corridor, Hennepin County, regional transit agencies, a regional park district, local chambers of commerce, and other community groups—studied a “no build” alternative, four bus alternatives, and eight light rail alternatives to identify which transit mode and route should be included in regional transportation plans.²⁰ HCRRA selected a light rail route in 2009 as the “locally preferred alternative,” the mode of transportation and route selected by local and/or regional authorities for a future transit project. In 2010, the Metropolitan Council’s governing body adopted the route recommended by HCRRA into the region’s transportation plan and prepared an application to pursue funding for Southwest LRT through the federal New Starts program.²¹

Planning (Pre-2011)

- Several government agencies analyzed mode and route alternatives.
- The Metropolitan Council selected the light rail route recommended by HCRRA for further design and engineering.

Design (2011-2018)

- The Metropolitan Council hired engineering firms to design the Southwest LRT line.
- The Metropolitan Council—in consultation with local stakeholders and the public—finalized the scope, budget, and schedule; completed required environmental impact analyses; and obtained the consent of municipalities along the line.

Construction (2019-Present Day)

- The Metropolitan Council hired construction companies to build the light rail line and systems that power the vehicles.
- After the line has been constructed and tested, the Metropolitan Council will begin service and operate the line.

In 2011, the project entered the design phase after the Federal Transit Administration approved the Metropolitan Council’s application.²² In 2012, the Council hired two engineering firms to design the Southwest LRT line.

²⁰ Hennepin County Regional Railroad Authority, *Southwest Transitway Alternatives Analysis Final Report* (Minneapolis, 2007).

²¹ To be eligible for New Starts grant funding, projects must be developed using a process specified in federal law. At several points during this process, the Federal Transit Administration evaluates projects against a complex set of criteria and approves projects to move to the next step. We provide more information about this process in Appendix C.

²² We use the word “design” to refer generally to two phases of the federal New Starts grant program—preliminary engineering and final design.

As the design progressed, the Metropolitan Council, in coordination with the Federal Transit Administration, prepared environmental studies required by federal and state law.²³ For example, federal law requires an environmental impact statement (EIS) for any proposed major federal action that could significantly affect the environment.²⁴ An EIS is meant to provide a full and fair discussion of significant environmental impacts on the human and natural environment and inform decision makers and the public of reasonable ways to avoid or minimize adverse impacts or enhance the quality of the human environment. The process for developing the EIS involves publishing drafts and holding public comment periods. HCRRA and the Federal Transit Administration completed Southwest LRT's draft EIS in 2012; the Council and Federal Transit Administration completed a supplemental draft EIS in 2015, the final EIS in 2016, and a supplemental environmental assessment in 2018. Completing these environmental studies allowed the Metropolitan Council to finalize project plans and specifications before construction.

Construction began on Southwest LRT in 2019. At the time this report was published, the Metropolitan Council estimated that civil construction would conclude in 2025. As segments of the track are finished, the Council's systems contractor will install the overhead power cables, safety and security features, and ticket kiosks. The systems contractor will then test the line before the Council opens it to the public in 2027.

We provide a detailed timeline of the Southwest LRT project in Appendix B.

How much has the Southwest LRT project been delayed?

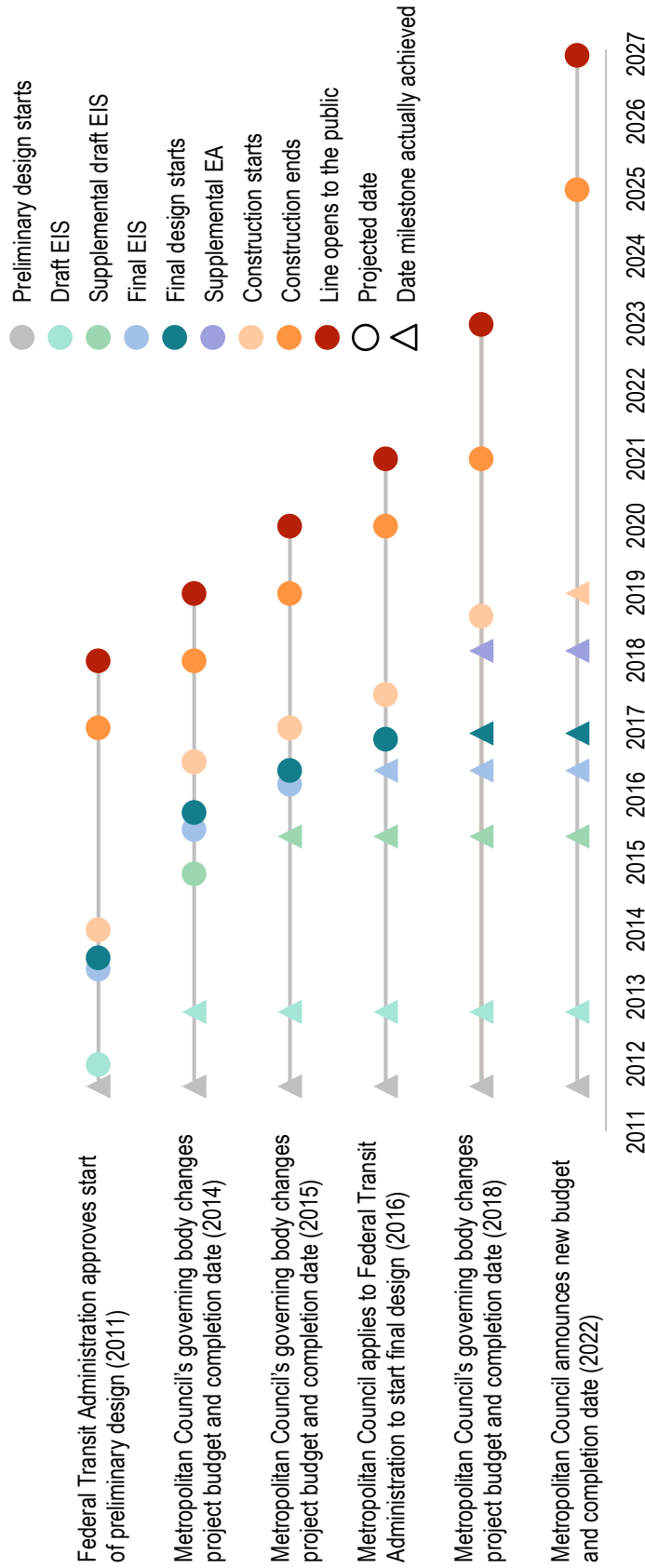
The Metropolitan Council's timeline for completing the Southwest LRT project has extended nine years beyond the end date anticipated when the Council became the agency responsible for overseeing the design, engineering, and construction of the line. In 2011, the Metropolitan Council estimated that it would open the line in 2018; in 2022, the estimated date was 2027.

Throughout the life of the project, the Metropolitan Council has not met its estimated dates for completing key milestones. For example, in 2011, the Council expected that the final EIS for the project would be completed in mid-2013, but it did not expect that it would need to prepare additional environmental studies—including a supplemental draft EIS. The additional time required to publish the supplemental draft EIS delayed the completion of the final EIS. As Exhibit 10 shows, the Metropolitan Council and the Federal Transit Administration actually completed the EIS three years later, in mid-2016. Delays such as these affected the Council's ability to meet its schedule for subsequent milestones, including construction start and end dates and the date the line would open to the public.

²³ National Environmental Policy Act of 1969, Public Law 91-190, codified as 42 *U.S. Code*, sec. 4332 (2020); 23 *CFR*, pt. 771 (2021); 40 *CFR*, pts. 1501-1503 (2021); *Minnesota Statutes* 2021, Chapter 116D; and *Minnesota Rules*, Chapter 4410, <https://www.revisor.mn.gov/rules/4410/>, accessed June 10, 2022.

²⁴ 42 *U.S. Code*, sec. 4332(2)(C) (2020); 23 *CFR*, secs. 771.123-771.125 (2021); and 40 *CFR*, sec. 1502.3 (2021).

Exhibit 10
The Metropolitan Council has shifted key milestone dates for Southwest LRT multiple times.



Notes: "EIS" is environmental impact statement. "EA" is environmental assessment.

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

What led to delays in the Southwest LRT project?

Metropolitan Council officials report that the biggest sources of delays have been caused by three issues:

- Uncertainty involving the final location of freight rail lines in Minneapolis and St. Louis Park (see pages 18-24).
- Scope and design changes before the start of construction that prompted the Metropolitan Council to conduct unanticipated environmental studies and seek approval from local governments twice (see pages 24-27).
- Significant changes to the project after construction began (see page 27).

How did uncertainty involving the final location of freight rail affect the time it took to design the Southwest LRT project?

Early plans for Southwest LRT assumed that an existing freight rail line would be moved to make way for the light rail along portions of the alignment in Minneapolis and St. Louis Park (Exhibit 11 shows a map of existing freight rail lines in the area that would have been affected by such a move). In 2014, after extensive study and input from elected officials



Freight Rail Alternatives

Relocation: Freight rail is removed from the Kenilworth Corridor and relocated to another route. This would have allowed a new light rail line and an existing pedestrian and bike trail to operate at grade within the Kenilworth Corridor.

Colocation: Freight rail remains in the Kenilworth Corridor after the addition of a new light rail line. To preserve an existing pedestrian and bike trail without removing existing housing, the Metropolitan Council selected a shallow tunnel design so that light rail would operate under the surface of the corridor.

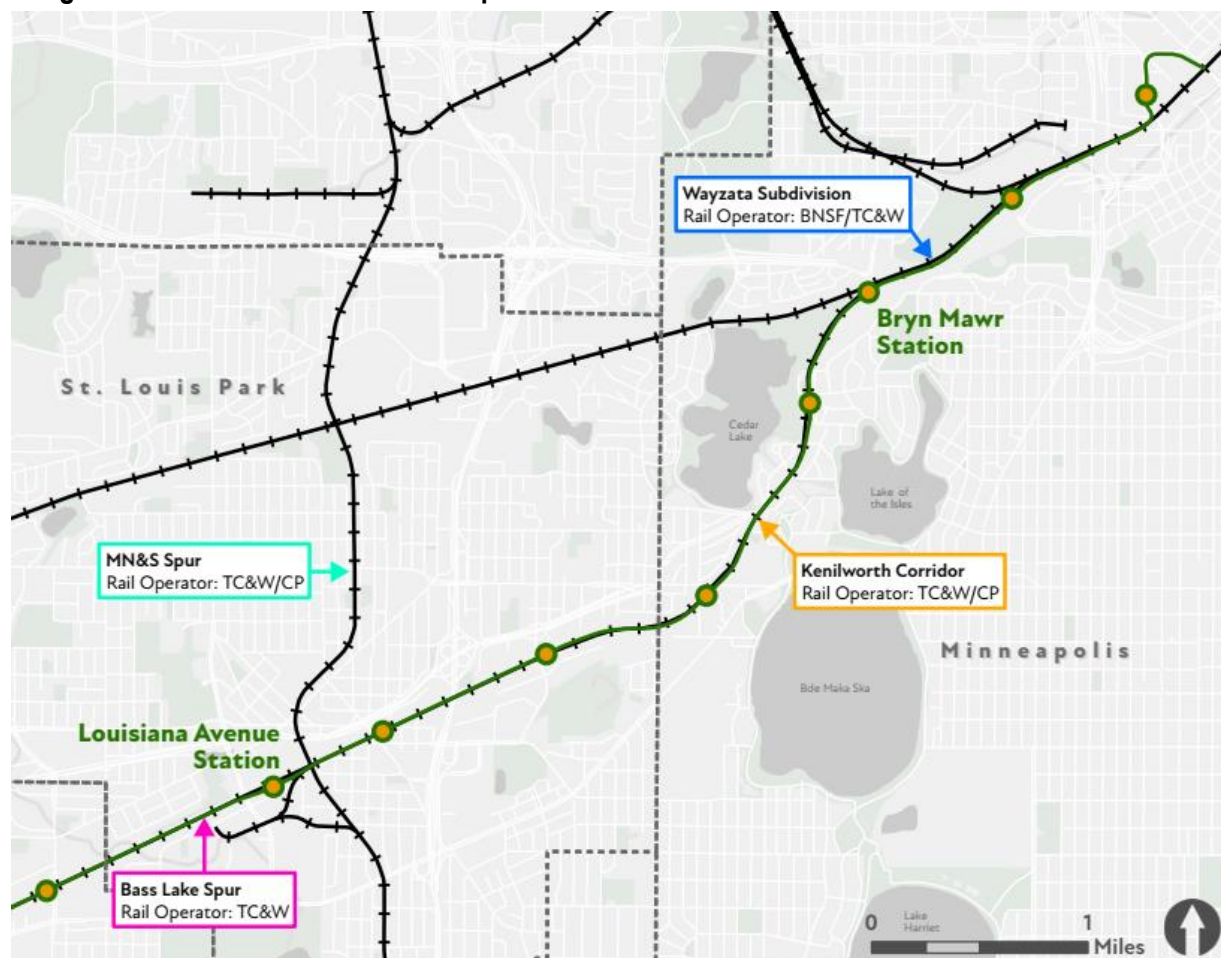
and the public, the Metropolitan Council determined that relocation of the freight rail line was unworkable, and instead decided to build the light rail line next to the existing freight rail line in Minneapolis and St. Louis Park. Notably, due to geographic and land use constraints, the Metropolitan Council elected to build a tunnel for the light rail line within Minneapolis's Kenilworth Corridor.²⁵ This decision significantly expanded the project's schedule and increased costs during the design phase and later during construction.²⁶

²⁵ The Kenilworth Corridor is a narrow strip of land located between Cedar Lake and Lake of the Isles in Minneapolis.

²⁶ We discuss construction-related delays on page 27 of this report.

Exhibit 11

Freight Rail Tracks in Parts of Minneapolis and St. Louis Park



Notes: The map shows existing freight rail lines operated by the BNSF, Canadian Pacific (CP), and Twin Cities & Western (TC&W) railroad companies. The green line shows the Southwest LRT project alignment. The Minneapolis, Northfield, and Southern (MN&S) Spur is one of the freight rail lines that was analyzed to relocate freight rail out of the Kenilworth Corridor.

Source: Metropolitan Council.

HCRRA acquired ownership of the land in the Kenilworth Corridor in 1984 for the purpose of building a transit line through the area. Since 1998, TC&W has operated in the corridor under an agreement with HCRRA.²⁷ Documents from the late 1990s indicate that this arrangement was intended to be temporary and that freight traffic would one day be moved out of the corridor.²⁸

²⁷ The agreement provided TC&W rail traffic an alternative route after the Minnesota Department of Transportation severed a rail line used by the company at Hiawatha Avenue (Trunk Highway 55) in 1998.

²⁸ See, for example, Hennepin County Regional Railroad Authority, Contract No. A18158, *Trackage Rights Agreement Between Soo Line Railroad Company, Twin Cities & Western Railroad Company and Hennepin County Regional Railroad Authority*, August 10, 1998, 10; Hennepin County, *City of St. Louis Park and St. Louis Park Economic Development Authority Preliminary Agreement as to the Golden Property*, April 17, 1998, 1-8; Minnesota Department of Transportation, Engineering Services Division, Office of Environmental Services, Contact Report, "Discussion of Rail Line Relocation Options," January 22, 1997; and RLK Associates, Ltd., prepared for the city of St. Louis Park, *St. Louis Park Railroad Study* (Minnetonka, March 1999), 1-2 to 1-3.

When HCRRA and the Federal Transit Administration began the environmental assessment process for Southwest LRT in 2008, the scope of the project did not include relocating or colocating the freight rail line that runs through parts of Minneapolis and St. Louis Park.²⁹ Instead, HCRRA assumed that freight rail would be relocated out of the Kenilworth Corridor and placed on a new route, preferably through the city of St. Louis Park, as part of a project separate from Southwest LRT. As Exhibit 12 shows, early engineering and environmental assessments largely supported this assumption by highlighting the limitations of colocation and the comparative benefits of relocation.

Exhibit 12

Key early freight rail studies and planning documents supported relocation.

| Title | Author | Findings and Conclusions |
|--|--|--|
| Locally Preferred Alternative Report (2009) | Hennepin County Regional Railroad Authority | <ul style="list-style-type: none"> Recommended an alignment with freight rail relocation as the alternative that best met the goals of improving mobility, providing a cost-effective and efficient travel option, preserving the environment, protecting quality of life, and supporting economic development. |
| TCWR Freight Rail Realignment Study (2009) | Hennepin County Regional Railroad Authority | <ul style="list-style-type: none"> Kenilworth Corridor had significant constraints for the long-term permanent location for freight rail and colocation was not viable. A relocation alternative routed through St. Louis Park had fewer constraints than other alternatives and was a feasible alignment for the long-term permanent location for freight rail operations. |
| Kenilworth Corridor: Analysis of Freight Rail/Light Rail Transit Co-Existence (2010) | R.L. Banks & Associates prepared for Hennepin County Regional Railroad Authority | <ul style="list-style-type: none"> There was insufficient space within the existing right-of-way to colocate both freight rail and light rail at grade in the Kenilworth Corridor without acquiring additional property. A tunnel through the Kenilworth Corridor to allow colocation would be vastly more expensive than other available alternatives; produce unpredictable environmental impacts; and invite continuing maintenance, safety, and security problems. |
| Findings of Fact and Conclusions: MN&S Freight Rail Study (2011) | Minnesota Department of Transportation | <ul style="list-style-type: none"> The potential impacts of relocation to environmental resources could be avoided or minimized through detailed design and existing regulatory controls. Relocating freight traffic through St. Louis Park did not have the potential for significant environmental effects. |
| Hennepin County Regional Railroad Authority Staff Report on Freight Rail Relocation (2011) | Hennepin County Regional Railroad Authority | <ul style="list-style-type: none"> Concluded that the most viable and preferred route for freight rail required relocation through St. Louis Park, and the preferred route for light rail was through the Kenilworth Corridor. |
| Southwest Transitway Draft Environmental Impact Statement (2012) | Hennepin County Regional Railroad Authority and Federal Transit Administration | <ul style="list-style-type: none"> Specified a preferred route that included freight rail relocation. Colocation alternative did not meet the project's purpose and need, required complex and high impact construction staging, and was not a practicable alternative due to the associated environmental impacts. |

Notes: "TCWR" is the Twin Cities & Western Railroad Company. "MN&S" refers to the MN&S Spur, as introduced in Exhibit 11.

²⁹ HCRRA was the local agency responsible for preparing the environmental assessments required under federal law for Southwest LRT through the end of 2012. In January 2013, after the completion of the draft EIS comment period, the Metropolitan Council assumed this role. In November 2009, HCRRA recommended to the Metropolitan Council its preferred route for Southwest LRT; this route assumed the freight rail would be relocated separately from the Southwest LRT project. The Metropolitan Council's governing body formally adopted an alternative assuming relocation in May 2010 as the "locally preferred alternative."

Despite the importance of freight rail relocation to the Southwest LRT project's planned schedule and budget, the question of whether to relocate freight rail or colocate freight rail and light rail remained an unresolved issue in the early 2010s. In its 2011 letter allowing the Metropolitan Council to pursue federal New Starts funding, the Federal Transit Administration said that the Council must analyze the environmental impact of freight rail relocation, and described relocation as “necessary for [the Metropolitan Council] to be able to implement the Southwest LRT project as planned.”³⁰ Further, the city of St. Louis Park did not view freight rail relocation through the city as a foregone conclusion. In 2011, the St. Louis Park City Council passed a resolution stating:

[T]here is a viable route through the Kenilworth Corridor for light rail and freight rail, with the relocation of a portion of the regional trail, acquisition of property and appropriate mitigation measures to address such items as grade separated crossings, and station area impacts...the Kenilworth route is shorter, has fewer curves, has fewer elevation changes, and is significantly less expensive to construct.³¹

After HCRRA and the Federal Transit Administration published the Southwest LRT draft EIS in 2012—which indicated that they saw relocation as the environmentally preferred alternative—HCRRA and the Federal Transit Administration received comments that cast doubt on the benefits and feasibility of relocation. For example, in its comment letter on the draft EIS, the U.S. Army Corps of Engineers stated that a project design that required freight rail relocation would not qualify as the least environmentally damaging alternative. The Corps instead indicated that colocation of freight rail and light rail through the Kenilworth Corridor would be the least damaging alternative. TC&W also opposed the relocation design. In response to the draft EIS, the railroad company wrote “The locally preferred alternative to re-route TC&W traffic, as designed in the [draft EIS], negatively impacts the communities along TC&W's railroad by increasing operating costs that would be passed on to our customers....”³² Further, TC&W wrote:

[T]he re-route design in the [draft EIS] is defective: It contravenes accepted railroad engineering standards for curves and grades; It creates risks of derailments and crossing accidents, severe safety risks for pedestrians, motorists, residents of St. Louis Park, and railroad workers; It generates intense train noise and vibration where now there is little or none; It imposes increased operating costs on TC&W due to limits on train speed and the need for additional crew time, fuel, and equipment....³³

In response to growing opposition, the Metropolitan Council reexamined the design plans from the draft EIS that required freight rail relocation, considered new relocation

³⁰ Marisol R. Simón, Regional Administrator, United States Department of Transportation, Federal Transit Administration, letter to Susan Haigh, Chair, Metropolitan Council, *Re: Preliminary Engineering Approval for the Minneapolis Southwest Light Rail Project*, September 2, 2011.

³¹ St. Louis Park City Council Resolution 11-058, adopted May 31, 2011.

³² Twin Cities & Western Railroad Company, *Response to the Southwest Light Rail Transitway Draft Environmental Impact Statement* (Glencoe, MN, 2012), 7.

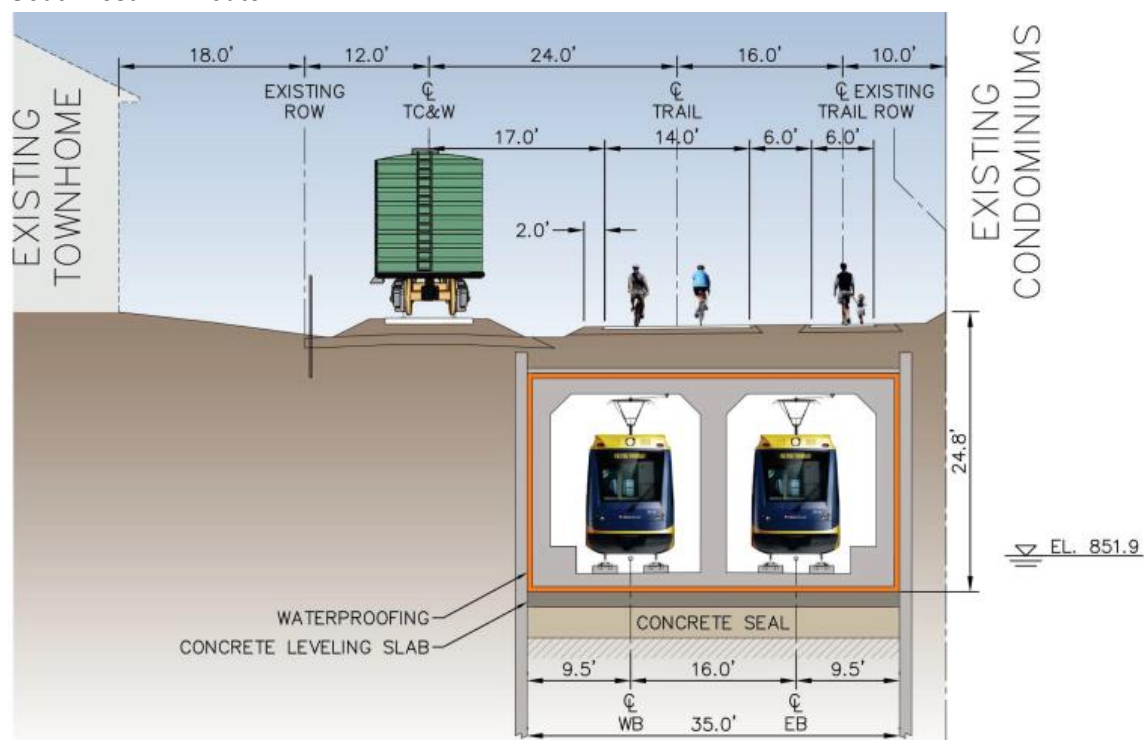
³³ *Ibid.*, 2.

alternatives, and explored colocation designs for freight rail along the planned Southwest LRT route. Given that freight rail and light rail colocation in the Kenilworth Corridor had the potential to create significant environmental impacts, the Metropolitan Council and Federal Transit Administration began to prepare a supplemental draft EIS in July 2013. The supplemental draft EIS assessed, along with other design changes, the environmental, social, and economic impacts of collocating freight and light rail in the Kenilworth Corridor, in comparison to relocating freight rail out of the corridor.

In October 2013 after months of design work and input from elected officials and the public, the Corridor Management Committee, a key advisory committee of the Metropolitan Council's governing body, recommended a colocation alternative.³⁴ In April 2014, after additional technical study and public engagement, the Corridor Management Committee again recommended that the Metropolitan Council's governing body adopt a project scope that included the construction of light rail tunnels so that freight and light rail could be collocated in the Kenilworth Corridor, as shown in Exhibit 13.³⁵ Later in the same month, the Metropolitan Council's governing body officially adopted the scope recommended by the Corridor Management Committee.

Exhibit 13

Selected colocation design for the Kenilworth Corridor "pinch point" along the Southwest LRT route.



Source: Corridor Management Committee, "Corridor Management Committee Meeting," (slide deck, Metropolitan Council, St. Paul, April 2, 2014), 10.

³⁴ For a description of the purpose and membership of the Corridor Management Committee, see Appendix A.

³⁵ The project's scope at this time included two light rail tunnels in the Kenilworth Corridor. In July 2014, the Metropolitan Council's governing body removed one of the tunnels from the scope of Southwest LRT.

By August 2014, project designs that included freight rail and light rail colocation secured the consent of municipalities along the alignment.³⁶ As Exhibit 14 shows, technical and environmental studies conducted after 2012 supported this shift from the relocation of freight rail traffic through St. Louis Park to colocation of freight and light rail within the Kenilworth Corridor.

Exhibit 14

Freight rail and environmental studies conducted in the mid-2010s generally supported colocation.

| Title | Author | Findings and Conclusions |
|--|--|---|
| SWLRT Engineering Evaluation of Freight Rail Relocation Alternatives (2014) | TranSystems, prepared for Metropolitan Council | <ul style="list-style-type: none"> Reviewed previously identified relocation options and determined that none emerged as a clearly preferred alternative. Determined that colocation and a modified relocation alignment were both viable options. |
| Southwest Light Rail Transit: Kenilworth Shallow LRT Tunnels Water Resources Evaluation (2014) | Burns & McDonnell Engineering Company, prepared for Metropolitan Council | <ul style="list-style-type: none"> Found “no fatal flaws” in the shallow light rail tunnels design that would allow colocation. Further investigation needed to determine if contaminated soil or groundwater could be found during construction or operation of the tunnel system. |
| Southwest Light Rail Transit (Metro Green Line Extension) Supplemental Draft Environmental Impact Statement (2015) | Metropolitan Council and Federal Transit Administration | <ul style="list-style-type: none"> Shallow light rail tunnels required for colocation would avoid the various adverse impacts associated with the most feasible relocation designs, such as the acquisition of residential and commercial properties and the routing of freight rail traffic near schools. Colocation was generally compatible with geologic conditions and no long-term effects on groundwater were anticipated. Colocation impacts on wetlands and floodplains could be mitigated in compliance with federal and local requirements. |
| Southwest Light Rail Transit (Metro Green Line Extension) Final Environmental Impact Statement (2016) | Metropolitan Council and Federal Transit Administration | <ul style="list-style-type: none"> Colocation of light rail and freight rail in the Kenilworth Corridor is the project’s environmentally preferred alternative. A shallow light-rail tunnel in the Kenilworth Corridor would provide the best balance of costs, benefits, and environmental impacts. |

According to Metropolitan Council officials, the findings of earlier studies (as shown in Exhibit 12) differed from the findings of later studies (as shown in Exhibit 14) because the former lacked the detailed engineering work required to fully understand the complexity of relocation; the engineering details of relocation were not explored in depth until after HCRRA and the Federal Transit Administration published the draft EIS in 2012. Additionally, Metropolitan Council officials told us that early studies were based on a high-level design. In contrast, the later EIS studies were based on more advanced designs and assessed short-term and long-term environmental, socioeconomic, and cultural impacts of the project in more detail.

³⁶ As required by state law, the agency responsible for the project must submit preliminary design plans to the cities, towns, and counties in which a proposed LRT route is located for review and approval (*Minnesota Statutes* 2021, 473.3994, subd. 3). We discuss the municipal consent process in more detail on pages 25-27.

As Exhibit 10 shows, the duration of the project's design phase expanded between 2011 and 2014. As we discussed above, the additional engineering and design work, public input, and technical and environmental study needed to develop a feasible colocation alternative to relocation contributed to this expansion. For example, in 2011, before HCRRA and the Federal Transit Administration published the draft EIS, the Metropolitan Council anticipated that the final EIS would be published in 2013. Rather than publishing the final EIS that year, the Metropolitan Council and Federal Transit Administration finalized the scope of a supplemental draft EIS in 2013; the scope included, along with other design changes, the comparative environmental impacts of colocation and relocation designs. The Metropolitan Council and Federal Transit Administration published the supplemental draft EIS in 2015 and the final EIS in 2016.

How did changes to the scope and design of Southwest LRT prior to the beginning of construction affect the project's timeline?

The shift from freight rail relocation to colocation, scope reductions adopted in response to escalating costs, and changes made in response to input from local governments along the Southwest LRT route extended the duration of the project's design phase. According to a Metropolitan Council official, changes to a project's scope, such as adding tunnels, can be disruptive because they may require design adjustments to multiple project elements, including landscaping, utilities, roadways, and architecture. They may also require additional environmental studies or approval from the cities and counties located along the proposed light rail route.

Apart from the issue involving the location of freight rail lines that we discussed in the previous question, other parts of the Southwest LRT project's scope were not resolved at the time HCRRA and the Federal Transit Administration published the project's draft EIS in 2012. After the completion of the draft EIS comment period in December 2012, the Metropolitan Council began evaluating 25 technical issues that had to be resolved in order to finalize the project's scope and complete the project's environmental assessment and municipal consent process. For example, one technical issue involved the light rail alignment in Eden Prairie. In its response to the draft EIS, the city of Eden Prairie asked the Council to evaluate the feasibility of moving the location of two stations in Eden Prairie. Another technical issue the Metropolitan Council had to resolve was determining the final location of a planned operations and maintenance facility. Both of these technical issues required additional design work and contributed to the need for a supplemental draft EIS. As Exhibit 10 shows, in 2011, the Metropolitan Council had not anticipated needing to complete a supplemental draft EIS, but by mid-2013, the Council and Federal Transit Administration had determined one was needed for Southwest LRT. As we stated earlier, this additional environmental assessment affected the Council's ability to meet its schedule for other key milestones.

In the spring of 2015, the project's escalating costs prompted the Corridor Management Committee, the Metropolitan Council, and the Southwest LRT project's funding partners to reconsider the project's scope and evaluate which project components could be removed. The Council began a scope reduction process that included gathering input from business and community advisory groups, and a financial and operational analysis of various cost reduction alternatives. After reviewing feasible alternatives, the Corridor Management

Committee recommended—and the Metropolitan Council’s governing body approved—a revised scope that eliminated one station in Eden Prairie and deferred another for construction at a later date; shortened the length of track from 15.8 to 14.5 miles; reduced the number of park and ride spaces; reduced station furnishings, art, and landscaping; reduced the number of light rail vehicles by five; and reduced storage space in the planned operations and maintenance facility.

The cost-cutting scope reductions required additional design work and environmental assessment within the project’s final EIS. Since some of these scope changes also altered the physical components of the project design, the Metropolitan Council had to seek approval through a second municipal consent process in 2015. This process further delayed the completion of the design phase of the project.

Metropolitan Council officials also attributed project delays to scope changes made in response to input from the municipalities through which the line runs. We discuss these changes and the municipal consent process more generally under the following question.

Although the Metropolitan Council and the Federal Transit Administration published the final EIS for Southwest LRT in May 2016, the Council continued to refine the project’s scope and design through the start of construction in 2019. Some of these refinements, including the extension of a concrete barrier wall to accommodate light rail along BNSF’s freight rail alignment, were substantial enough to require a supplemental environmental assessment and additional public outreach, further extending the design phase of the project.

How did the municipal consent process affect the project’s timeline?

Before construction could begin, the Metropolitan Council had to secure municipal consent for its project plans on two separate occasions. In addition to the time it took for the governing bodies of Eden Prairie, Hopkins, Minneapolis, Minnetonka, St. Louis Park, and Hennepin County to review and approve project plans, the Council also spent time discussing scope changes and design refinements with local governments so that project plans addressed local concerns, needs, and preferences.

Statutes require the government entity responsible for a proposed LRT project to submit the physical design components of the preliminary design plans to the governing body of each city, county, and town in which the route is proposed to be located.³⁷ The governing bodies are required to hold a hearing to review the physical components of the proposed project’s design plans, and approve or disapprove the plans. If a local government unit disapproves the plans, it must describe the specific amendments to the plans that would allow it to withdraw its disapproval. Only the physical components of design plans are subject to local government review and approval.³⁸ If, prior to construction, the final design plans incorporate a substantial change to the physical components of the preliminary design plans,

³⁷ *Minnesota Statutes* 2021, 473.3994, subd. 3.

³⁸ *Ibid.* Physical design components include the planned route, station locations, track elevation, tunnels, bridges, and parking facilities (*Minnesota Statutes* 2021, 473.3993, subd. 2(1)).

the local government units in which the proposed change is located must review and approve or disapprove the proposed design changes within 60 days of receiving the changed plans.³⁹

The Southwest LRT project's first round of municipal consent began in the spring of 2014. After holding hearings to discuss the project's preliminary design plans in May, June, and August, Hennepin County and the cities along the route provided their approval by the end of August 2014.

Following the first round of municipal approval, the Metropolitan Council entered into memorandums of understanding and cooperative agreements with some of the cities along the route. These agreements formally established the Council's and the cities' commitments to continue to evaluate certain project components, including design improvements requested by the cities. They also included the Metropolitan Council's commitments to preserve woodlands, improve landscaping, comply with local ordinances, modify parking structures, make safety improvements, and enhance pedestrian and bike access.

Memorandums of understanding with the cities of St. Louis Park and Minneapolis also addressed the issues concerning the location of freight rail we discussed on pages 18-24. The agreement between St. Louis Park and the Metropolitan Council established that there would be no further study of the feasibility of rerouting freight rail traffic through the city, except as required to complete the environmental review process for Southwest LRT. In its nonbinding memorandums of understanding with the city of Minneapolis, the Metropolitan Council agreed to (1) maintain public ownership over the parts of the Kenilworth Corridor that it acquired for the project, (2) transfer any publicly owned parts of the corridor not used for the light rail project to the Minneapolis Parks and Recreation Board for use as parkland and/or pedestrian and bike trails, and (3) make two significant changes to the project's scope. Specifically, the Council agreed to remove one of two light rail tunnels it had designed for the Kenilworth Corridor, and add the 21st Street Station back into the north end of the corridor (the Council had previously eliminated this light rail station). The Council also agreed that it would use half of the net savings from these two scope changes to fund other design refinements requested by Minneapolis. Like any other scope change, the design plans for these modifications took time to develop.

As we discussed in the previous question, in response to mounting project costs, the Metropolitan Council began a scope reduction process in the spring of 2015 that included gathering input from business and community advisory groups and from the affected municipalities, and conducting significant design and engineering work. As a result of this process, the governing body of the Metropolitan Council adopted several changes to the project's scope and modifications to physical components of the project's design. As required by law, this necessitated an additional round of municipal consent that began in August 2015 and was completed by the end of September 2015.⁴⁰

After 2015, the Southwest LRT's design continued to advance. While some changes required a supplemental environmental assessment, the Metropolitan Council explained that

³⁹ *Minnesota Statutes* 2021, 473.3994, subd. 5(a).

⁴⁰ *Ibid.*, subs. 3 and 5.

since the changes were not substantial changes to physical components of the project's design plan, a third round of municipal consent was not required under state law.⁴¹

How did changes to Southwest LRT during construction affect the project's timeline?

It is common for there to be changes to LRT projects during construction. However, there have been three specific changes to the Southwest LRT project during construction that have had a significant effect on the project's estimated completion date. These changes were: (1) the addition of the previously deferred Eden Prairie Town Center Station, (2) the extension of a concrete barrier wall between freight rail and light rail lines in Minneapolis, and (3) a change in the construction method for the tunnel through the Kenilworth Corridor in Minneapolis. We described these changes in more detail on pages 10-12 of this report.

Although some of these changes were anticipated prior to construction, they still led to delays in the project schedule. OLA's upcoming program evaluation plans to examine whether the Council adequately accounted for these expected change orders in the project's budget, contingency fund, and/or timeline.

According to Metropolitan Council officials, the Eden Prairie Town Center Station and the barrier wall change orders were expected at the time the Council opened the civil construction contract for bids. However, the Council chose to open the Southwest LRT project for bids without the Eden Prairie Town Center Station and the barrier wall included in the project's scope because it was concerned that delaying the bid would have delayed the project or that fewer contractors would bid on the project in the future, resulting in higher costs. Further, a Metropolitan Council official told us that it needed to complete an environmental assessment of the concrete barrier wall before it could be included in the project's scope, and that assessment was not completed until after the Council opened the civil construction contract for bids a second time. The addition of the Eden Prairie Town Center Station occurred too late in the design process to be included in plans contractors used to generate their bids.

In contrast, Metropolitan Council officials told us that unforeseen conditions led to the change in the construction method on the tunnel through the Kenilworth Corridor. One official told us that issues with constructing the tunnel in the Kenilworth Corridor were the most significant reasons for delays to the completion of construction.

The three change orders specified above—and the cumulative effects of other change orders caused by unforeseen conditions and design issues—led to years of construction delays. Taken together, these change orders prompted the Metropolitan Council and its construction contractor (Lunda-McCrossan Joint Venture) to negotiate a settlement agreement to establish a schedule and sequence for completing segments of the Southwest LRT line. The extension of construction will also delay the systems contractor, delay the opening of the line, and result in additional delay-related costs. We discussed this settlement agreement further on pages 8-9.

⁴¹ *Minnesota Statutes* 2021, 473.3994, subd. 5, states that final design plans require local government approval only if they incorporate substantial changes from preliminary design plans “with respect to location, length, or termini of routes; general dimension, elevation, or alignment of routes and crossings; location of tracks above ground, below ground, or at ground level; or station locations....”



OLA

APPENDIX A: GLOSSARY

An **alternatives analysis** summarizes the findings of previous transportation planning efforts; identifies the purpose and mobility needs addressed by a proposed project; and provides information about the costs, benefits, and impacts of different corridor-level transit options, such as commuter rail lines, bus routes, and light rail transit. The alternatives analysis provides the basis for the selection of a locally preferred alternative. See 49 *U.S. Code*, sec. 5309(a)(1) (2007), for federal requirements for the alternatives analysis at the time Southwest Light Rail Transit (Southwest LRT) was at this stage of development.

The **Corridor Management Committee** is a committee established by the authority responsible for a project to advise it on the design, construction, and environmental review of a LRT project in a particular corridor. The Corridor Management Committee is required by state law. The Southwest LRT Corridor Management Committee has included representatives from the County Transit Improvement Board (prior to 2017), Department of Management and Budget, Hennepin County, Metropolitan Council, Metro Transit, Minnesota Department of Transportation (MnDOT), municipalities in which the transit corridor is located, and Southwest LRT business and community advisory committees. See *Minnesota Statutes 2021*, 473.3994, subd. 10.

The **County Transit Improvement Board (CTIB)** was formed in 2008 when five metropolitan counties (Anoka, Dakota, Hennepin, Ramsey, and Washington) entered into a joint powers agreement and approved a transit-dedicated sales and use tax of one-quarter of one-percent and an excise tax of \$20 per motor vehicle. Through the joint powers agreement, the board managed the proceeds of the tax until the board's dissolution in 2017. After its dissolution, Hennepin County assumed CTIB's funding commitments for Southwest LRT. See *Laws of Minnesota 2008*, chapter 152, art. 4, sec. 2.

An **environmental impact statement (EIS)** is a document required under the National Environmental Policy Act of 1969 that assesses the environmental impact of "major" federal actions, such as infrastructure projects. An EIS should provide a full and fair discussion of significant environmental impacts on the human and natural environment, as well as inform decision makers and the public of reasonable ways to avoid or minimize adverse impacts or enhance the quality of the human environment. The EIS process includes a draft EIS, final EIS, and if necessary, a supplemental draft EIS or supplemental environmental assessment. See 42 *U.S. Code*, sec. 4332 (2020); 23 *CFR*, pt. 771 (2021); and 40 *CFR*, pts. 1501-1503 (2021).

The **Executive Change Control Board** was established in 2014 with the purpose of ensuring orderly and appropriate policymaker oversight of significant changes to the Southwest LRT project's cost and schedule as well as the use of the project's contingency funds. Since 2018, voting members of the Executive Change Control Board include the Chair of the Metropolitan Council, who serves as chair of the board; two Hennepin County Commissioners; one Hennepin County Regional Railroad Authority (HCRRA) Commissioner; and an additional Metropolitan Council member designated by the Executive Change Control Board chair. A Ramsey County Commissioner is also a nonvoting board member.

The **Federal Transit Administration** is the federal agency within the U.S. Department of Transportation responsible for administering the New Starts Capital Investments Grant Program (New Starts). In addition to disbursing federal funding to the Southwest LRT project under the terms of the project's New Starts grant agreement, the Federal Transit Administration provided required approvals as Southwest LRT moved through the project development process; rated the Southwest LRT project proposal according to the New Starts project justification and local financial commitment criteria; prepared, along with HCRRA and the Metropolitan Council, the project's environmental impact statements (EISs) and supplemental environmental assessment; and issued a record of decision indicating that Southwest LRT's final EIS complied with the requirements of the National Environmental Policy Act of 1969.

A **full funding grant agreement** is a formal agreement between the Federal Transit Administration and the project sponsor that defines the project scope, establishes the terms and conditions for federal financial participation in the project, and sets the maximum amount of federal New Starts funding for a project. See 49 *U.S. Code*, sec. 5309 (k)(2) (2020); and 49 *CFR*, sec. 611.105 (2020).

Hennepin County is a political subdivision and local government unit in Minnesota. Hennepin County is governed by a seven-member Board of Commissioners elected from districts within the county. The members of Hennepin County's Board of Commissioners also serve as HCRRA commissioners and as members of the Southwest LRT Executive Change Control Board and Corridor Management Committee. See *Minnesota Statutes 2021*, 375.01, 375.025, and 375.056.

The **Hennepin County Regional Railroad Authority (HCRRA)** is a political subdivision and local government unit in Minnesota. Established in 1980 by county resolution, HCRRA acquires abandoned railroad corridors to preserve them for future transportation use. In cooperation with the Metropolitan Council and state, local, and federal partners, HCRRA also conducts certain planning activities and provides funding for light rail and other major transit capital projects in Hennepin County. An HCRRA commissioner serves on Southwest LRT's Executive Change Control Board. The members of Hennepin County's Board of Commissioners also serve as HCRRA commissioners.

HCRRA led early planning efforts for Southwest LRT, recommended the locally preferred alternative to the Metropolitan Council, and as the lead agency through December 2012, published the draft EIS for the project. See *Minnesota Statutes 2021*, Chapter 398A.

A **lead agency** is the agency with principal responsibility for preparing the environmental assessments and statements for proposed projects covered under the National Environmental Policy Act of 1969. The Federal Transit Administration is the federal lead agency for Southwest LRT's environmental review. HCRRA was the local lead agency for Southwest LRT's environmental review through December 2012. The Metropolitan Council assumed the role of local lead agency in January 2013. See 42 *U.S. Code*, sec. 4370m(15) (2020); 23 *CFR*, sec. 771.107 (2021); and 40 *CFR*, sec. 1508.1(o) (2021).

A **letter of no prejudice** is a document that permits the project sponsor to incur costs that it expects to be funded by a New Starts grant that has not yet been awarded. Costs that can be incurred under a letter of no prejudice include expenses related to construction mobilization, procurement of construction materials and equipment, demolition, and site preparation. The Metropolitan Council secured four separate letters of no prejudice for Southwest LRT.

The **locally preferred alternative** is the mode of transportation (such as commuter train, bus, or light rail) and route selected by local and/or regional authorities for a future transit project. See 49 *CFR*, sec. 611.105 (2020).

The **Metropolitan Council** is a public corporation and political subdivision of the state of Minnesota; regional policy-making body; planning agency; and provider of services such as wastewater treatment, regional parks, and the Metro Transit bus and rail system. The Council consists of one at-large chairperson and 16 members appointed by the governor with the advice and consent of the Minnesota Senate. Each of the 16 members represents a geographic district in the seven-county Twin Cities metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties). See *Minnesota Statutes* 2021, 473.123.

Municipal consent is a process required under state law in which the responsible authority for a project submits the physical design components of an LRT project for review and approval by the governing body of each city, county, and town in which a project's proposed route is located. For Southwest LRT, the governing bodies of Eden Prairie, Hopkins, Minneapolis, Minnetonka, St. Louis Park, and Hennepin County consented to the project's design plan. The Metropolitan Council completed one municipal consent process in August 2014. Due to changes to the project after the first round of municipal consent, the Council completed a second municipal consent process in September 2015. See *Minnesota Statutes* 2021, 473.3994, subs. 3 and 5.

The **National Environmental Policy Act of 1969** is the federal law that requires an assessment of the impact of a proposed "major federal action" on the human and natural environment. Southwest LRT met the definition of a major federal action. See National Environmental Policy Act of 1969, Public Law 91-190, codified as 42 *U.S. Code*, Chapter 55 (2020); 23 *CFR*, pt. 771 (2021); and 40 *CFR*, pts. 1500-1508 (2021).

New Starts Capital Investments Grant Program (New Starts) funds projects that are part of the Federal Transit Administration's Capital Investment Grant Program, which provides federal funding on a competitive basis for state and local transit capital investments, including heavy rail, commuter rail, light rail, streetcars, and bus rapid transit. See 49 *U.S. Code*, sec. 5309 (2020); and 49 *CFR*, secs. 611.101-611.211 (2020).

A **project sponsor** is the recipient of New Starts grant funding and is the agency that oversees the preliminary engineering, final design, and construction of the transit project. The project sponsor may be the lead agency and responsible government unit for the purposes of the federal and state environmental impact statement processes. The Metropolitan Council is the project sponsor for Southwest LRT.

The **record of decision** provides the Federal Transit Administration's determination that the requirements of the EIS process under the National Environmental Policy Act of 1969 have been satisfied. The record of decision also summarizes the alternatives considered; impacts identified; and measures to avoid, minimize, and mitigate adverse impacts. The record of decision applies to a project and its impacts as described in its final EIS. See 23 *CFR*, secs. 771.124 and 771.127 (2021); and 40 *CFR*, sec. 1505.2 (2021).

A **responsible authority** is the government entity, designated by the governor, responsible under state law for planning, designing, acquiring, constructing, and equipping light rail facilities. By state law, the responsible authority is either the Metropolitan Council or the State of Minnesota acting through the Commissioner of Transportation. The Metropolitan Council is the responsible authority for Southwest LRT. See *Minnesota Statutes* 2021, 473.3994, subd. 1a.

A **responsible government unit** is the government authority that is responsible for the preparation and review of environmental assessments and impact statements required for proposed projects under the Minnesota Environmental Policy Act. HCRRA was the responsible government unit for Southwest LRT's environmental review through December 2012. The Metropolitan Council assumed the role of responsible government unit in January 2013. See *Minnesota Statutes* 2021, 116D.04, subds. 1a and 2a; and *Minnesota Rules*, 4410.0200, subp. 75, <https://www.revisor.mn.gov/rules/4410/>, accessed June 10, 2022.

The Metropolitan Council's **Southwest LRT Project Office** is responsible for the delivery of the project, including advancing the project's design, resolving technical issues, and managing construction. In addition to having its own dedicated design, construction, finance, and administrative staff, the project office includes personnel from other divisions of the Metropolitan Council, partnering agencies such as MnDOT and Hennepin County, and external design and construction consultants.

APPENDIX B: DETAILED PROJECT TIMELINE

On the following pages, we present a detailed timeline of the Southwest Light Rail Transit (Southwest LRT) project’s development and construction.¹ In addition to descriptions of important project milestones, the timeline also includes major change orders, project cost estimates, the years in which the Metropolitan Council anticipated opening the line to the public, and reported balances of the project’s contingency fund.

For easy reference, changes to the project’s date of completion and/or project costs are highlighted in **red**, milestones in the environmental impact assessment process are highlighted in **green**, the beginning of New Starts project phases are highlighted in **blue**, and major change orders during construction are highlighted in **orange**. Project cost estimates are in year-of-expenditure dollars. These dollars are the actual expenses the Metropolitan Council had incurred for the Southwest LRT project at the time it made the overall budget estimate, summed with projected future expenditures that the Council adjusted for inflation.

Exhibit B.1

Detailed Timeline of the Southwest LRT Project

| Date | Description | Opening Date | Metropolitan Council-Approved Budget (in Millions) | Contingency Balance (in Millions) |
|-------------------------|---|--------------|--|-----------------------------------|
| 1980s | <p>Hennepin County Regional Rail Authority (HCRRA) identified an area stretching from Hopkins to Minneapolis—including Minneapolis’s Kenilworth Corridor—for a future LRT line.</p> <p>In 1984, HCRRA acquired ownership of the land in the Kenilworth Corridor to preserve the corridor for a future transit project. In 1988, HCRRA identified the Southwest Transitway as a future LRT corridor. That same year, HCRRA began studying the environmental impact of possible LRT projects in Hennepin County, including the Southwest Transitway.</p> | | | |
| August 1998 | <p>HCRRA, Twin Cities & Western Railroad Company (TC&W), and Canadian Pacific Railway reached an agreement that allowed freight rail traffic to travel through the Kenilworth Corridor.</p> | | | |
| Late 1990s to mid-2000s | <p>HCRRA, the Metropolitan Council, and the Minnesota Department of Transportation studied bus, trolley, and light rail options in the Southwest Transitway.</p> <p>These studies cumulated with HCRRA’s 2007 publication of the Southwest Transitway Alternatives Analysis, which compared the benefits, costs, and impacts of a range of transit alternatives.</p> | | | |

¹ See Appendix A for definitions of the terms used in this appendix.

Exhibit B.1 (Continued)

Detailed Timeline of the Southwest LRT Project

| Date | Description | Opening Date | Metropolitan Council-Approved Budget (in Millions) | Contingency Balance (in Millions) |
|--------------------------|---|--------------|--|-----------------------------------|
| November 3, 2009 | <p>HCRRA recommended that the Metropolitan Council’s governing body adopt the Kenilworth-Opus-Golden Triangle alignment and light rail transit mode as the locally preferred alternative.</p> <p>HCRRA recommended an alternative that called for freight rail to be moved out of the Kenilworth Corridor to make way for light rail. Freight rail relocation was to occur through a project separate from the Southwest LRT project.</p> | | | |
| May 26, 2010 | <p>Metropolitan Council’s governing body adopted the locally preferred alternative recommended by HCRRA.</p> | | | |
| August 31, 2010 | <p>Metropolitan Council applied for approval from the Federal Transit Administration to begin preliminary engineering.</p> | 2017 | \$1,213 | |
| December 9, 2010 | <p>Southwest LRT Corridor Management Committee held its first meeting.</p> <p>The Committee advised the Metropolitan Council on the design and construction of Southwest LRT.</p> | | | |
| September 2, 2011 | <p>Federal Transit Administration approved the project to begin preliminary engineering.</p> <p>In its application, the Metropolitan Council projected an opening date in 2017. The Federal Transit Administration indicated the project schedule was overly aggressive and recommended an opening date no earlier than the first quarter of 2018. It also specified several key items that the Council had to address during preliminary engineering in order to enter the final design phase of the New Starts Capital Investment Grants Program (New Starts). These items included determining (1) required safety features for collocating Southwest LRT and freight rail lines, including crash walls or grade separation; and (2) the impacts of relocating freight rail lines that operated along segments of the project’s planned route.</p> <p>This action established the Metropolitan Council as the “project sponsor,” or the agency that may receive federal grant funding and that oversees the preliminary engineering, final design, and construction of the transit project.</p> | 2018 | \$1,250 | |

Exhibit B.1 (Continued)

Detailed Timeline of the Southwest LRT Project

| Date | Description | Opening Date | Metropolitan Council-Approved Budget (in Millions) | Contingency Balance (in Millions) |
|-------------------|--|--------------|--|-----------------------------------|
| January 20, 2012 | <p>Minnesota governor designated the Metropolitan Council as the state’s responsible authority for Southwest LRT.</p> <p>This action established the Council as the agency under state law responsible for planning, designing, acquiring, constructing, and equipping the proposed light rail transit line. By state law, the responsible authority is either the Metropolitan Council or the State of Minnesota acting through the Commissioner of Transportation.</p> | | | |
| October 11, 2012 | <p>HCRRA and the Federal Transit Administration published the draft environmental impact statement (EIS).</p> <p>The draft EIS evaluated a number of alternatives, including the “no build” alternative, an enhanced bus alternative, and five light rail alternatives. Four of the five light rail alternatives—including the locally preferred alternative—moved freight rail out of the Kenilworth Corridor to make way for the light rail line. The fifth light rail alternative located freight rail and light rail together in the Kenilworth Corridor.</p> | | | |
| December 19, 2012 | <p>Preliminary design contracts awarded to AECOM Technical Services, Inc. and Kimley-Horn and Associates, Inc. for \$16.8 million each.</p> <p>The scope of the contracts included completing 30 percent of the project design, estimating associated project costs, resolving technical issues, and developing project plans to the level of detail needed to obtain municipal consent.</p> | | | |
| December 31, 2012 | <p>Metropolitan Council became the local lead agency for the state and federal environmental review process.</p> <p>Hennepin County transferred the responsible government unit status to the Council.</p> | | | |

Exhibit B.1 (Continued)

Detailed Timeline of the Southwest LRT Project

| Date | Description | Opening Date | Metropolitan Council-Approved Budget (in Millions) | Contingency Balance (in Millions) |
|----------------------|--|--------------|--|-----------------------------------|
| 2013 | <p>Southwest LRT's Corridor Management Committee considered freight rail location options.</p> <p>With public, business, and freight rail company input, the Corridor Management Committee considered whether to relocate the freight rail line out of the Kenilworth Corridor or whether to build light rail next to the existing freight rail track in the corridor. By the fall of 2013, the Corridor Management Committee adopted a resolution recommending that work regarding freight rail relocation stop. The committee also recommended building tunnels for light rail tracks next to the freight rail tracks in the Kenilworth Corridor to limit impacts on surrounding properties and park space.</p> | | | |
| April 9, 2014 | <p>Metropolitan Council's governing body approved change to the opening date and project cost.</p> <p>The Metropolitan Council's new budget and project schedule reflected a scope that included 16 stations, 15.8 miles of track, and two tunnels in the Kenilworth Corridor.</p> | 2019 | \$1,683 | |
| July 9, 2014 | <p>Metropolitan Council's governing body approved change to the project's scope and cost.</p> <p>Based on a recommendation by the Corridor Management Committee, the Council eliminated one of the two light rail tunnels in the Kenilworth Corridor, reinstated the 21st Street Station, and made improvements for pedestrians around several stations. These changes reduced the project budget but did not affect the opening date.</p> | 2019 | \$1,653 | |
| August 2014 | <p>HCRRA and the Counties Transit Improvement Board established an Executive Change Control Board for Southwest LRT.</p> <p>The Executive Change Control Board approved large change orders and delays to the opening date, among other duties.</p> | | | |
| August 2014 | <p>Hennepin County and the five cities along the route approved the project design plans in the first municipal consent process.</p> | | | |

Exhibit B.1 (Continued)

Detailed Timeline of the Southwest LRT Project

| Date | Description | Opening Date | Metropolitan Council-Approved Budget (in Millions) | Contingency Balance (in Millions) |
|-------------------------|---|--------------|--|-----------------------------------|
| December 12, 2014 | <p>Metropolitan Council awarded the advanced design and engineering contract to AECOM Technical Services, Inc. for \$117.7 million.</p> <p>The scope of the contract included completing the project design; ensuring design plans and specifications could be constructed; forecasting ridership; and providing design support during construction, including addressing contractor requests for information and developing independent cost estimates for proposed changes to project plans.</p> | | | |
| May 22, 2015 | <p>Metropolitan Council and the Federal Transit Administration published the supplemental draft EIS.</p> <p>The supplemental draft EIS evaluated the potential impacts of changes to the design of the project in three areas along the proposed route: (1) adjustments to light rail alignment and stations in Eden Prairie; (2) the location of a proposed Operations and Maintenance Facility in Hopkins; and (3) adjustments to the light rail and freight rail alignments and stations in St. Louis Park and Minneapolis, including locating light rail next to existing freight rail in the Kenilworth Corridor.</p> | | | |
| May 2015 | <p>Design reached 30 percent completion.</p> | | | |
| July 8, 2015 | <p>Metropolitan Council's governing body approved change to the opening date and project cost.</p> <p>In response to the project's escalating cost, the Council—in consultation with local authorities—deleted the Mitchell Station in Eden Prairie, making the Southwest Station the western terminus of the line and reducing the length of the track from 15.8 to 14.5 miles. The Council also deferred the construction of Eden Prairie Town Center Station, reducing the number of stations to 15. Further, the Council approved considerable reductions to station furnishings, art, and landscaping; reduced the number of light rail vehicles by five; and reduced the storage space in the operations and maintenance facility.</p> | 2020 | \$1,744 | |
| August – September 2015 | <p>Hennepin County and the five cities along the route reapproved project design plans in a second municipal consent process.</p> <p>This second process was triggered by changes to the physical components of the project's design plans that occurred after the first municipal consent process in August 2014.</p> | | | |
| December 2015 | <p>Design reached 60 percent completion.</p> | | | |

Exhibit B.1 (Continued)

Detailed Timeline of the Southwest LRT Project

| Date | Description | Opening Date | Metropolitan Council-Approved Budget (in Millions) | Contingency Balance (in Millions) |
|--------------------|--|--------------|--|-----------------------------------|
| May 13, 2016 | <p>Metropolitan Council and the Federal Transit Administration published the final EIS.</p> <p>The final EIS evaluated two options: no build and the alignment that placed light rail next to freight rail in the Kenilworth Corridor. The evaluated project scope included 16 stations (including the Eden Prairie Town Center Station) and 14.5 miles of track.</p> | | | |
| July 15, 2016 | <p>The Federal Transit Administration issued a record of decision based upon the project's final EIS.</p> <p>This document provided the agency's determination that federal environmental requirements had been met.</p> | | | |
| August 10, 2016 | <p>Metropolitan Council's governing body approved change to the opening date and project cost.</p> <p>The cost increase was due to (1) increased land acquisition costs; (2) \$19 million in delay-related costs; and (3) additions to the project scope, which added \$16.2 million to the project cost. The scope additions included trail and pedestrian underpasses, trail bridges, or new access roads at four stations in Hopkins and St. Louis Park.</p> <p>In the same meeting, the Council determined that the final EIS for the project was adequate, as required by state law.</p> | 2021 | \$1,858 | |
| August 19, 2016 | <p>Metropolitan Council applied to the Federal Transit Administration for approval to enter the engineering phase of the New Starts program.</p> | | | |
| December 21, 2016 | <p>Federal Transit Administration approved the application, allowing the project to enter the engineering phase.</p> | | | |
| February 14, 2017 | <p>Metropolitan Council opened the civil construction contract for bidding.</p> | | | |
| September 20, 2017 | <p>Metropolitan Council rejected all bids for the civil construction contract.</p> <p>According to the Council, it received four bids ranging in amounts from \$796.5 million to \$1.1 billion. The Council rejected all bids because they exceeded price expectations and/or did not meet the bidding specifications.</p> | | | |
| October 30, 2017 | <p>Metropolitan Council opened the civil construction contract for bidding a second time.</p> | | | |

Exhibit B.1 (Continued)

Detailed Timeline of the Southwest LRT Project

| Date | Description | Opening Date | Metropolitan Council-Approved Budget (in Millions) | Contingency Balance (in Millions) |
|-------------------|---|--------------|--|-----------------------------------|
| February 23, 2018 | <p data-bbox="418 457 883 548">Metropolitan Council and the Federal Transit Administration published a supplemental environmental assessment.</p> <p data-bbox="418 558 963 741">The supplemental environmental assessment evaluated the environmental impact of the BNSF barrier wall and other modifications to the project design since the publication of the final EIS. Other design modifications included changes to parking, trails, utilities, barriers, and rights-of-way along the project route.</p> | | | |
| May 15, 2018 | <p data-bbox="418 762 886 825">The Federal Transit Administration issued an amended record of decision.</p> <p data-bbox="418 835 951 993">The amended record of decision provided the agency's determination that federal environmental requirements had been met after changes to the project that were described in the Council's February 2018 supplemental environmental assessment.</p> | | | |
| May 30, 2018 | <p data-bbox="418 1014 927 1077">Metropolitan Council's governing body approved changes to the opening date and project cost.</p> <p data-bbox="418 1087 967 1297">The Council increased the project budget by \$150 million to account for freight rail negotiations, additional environmental analysis, issuance of a second bid for the civil construction contract, increased commodity costs, right-of-way costs, project management costs, and the addition of the Eden Prairie Town Center Station back into the project scope.</p> | 2023 | \$2,003 | |
| July 2018 | <p data-bbox="418 1318 959 1497">Canadian Pacific, HCRRA, Hennepin County, Metropolitan Council, and TC&W reach a settlement agreement concerning the construction and operation of light rail and freight rail along the same alignment in portions of Minneapolis and St. Louis Park.</p> | | | |
| November 14, 2018 | <p data-bbox="418 1518 954 1581">The Federal Transit Administration granted the first letter of no prejudice.</p> <p data-bbox="418 1591 954 1717">This FTA action allowed the Council to incur \$187.3 million in costs for early construction activities under the expectation that these costs would later be reimbursed under a future New Starts grant agreement.</p> | | | |
| November 15, 2018 | <p data-bbox="418 1738 954 1833">Metropolitan Council awarded the civil construction contract to Lunda-McCrossan Joint Venture for \$799.5 million.</p> | | | |

Exhibit B.1 (Continued)

Detailed Timeline of the Southwest LRT Project

| Date | Description | Opening Date | Metropolitan Council-Approved Budget (in Millions) | Contingency Balance (in Millions) |
|--------------------|--|--------------|--|-----------------------------------|
| 2019 | Lunda-McCrossan Joint Venture began construction. | | | |
| February 2019 | Metropolitan Council and BNSF reach an agreement concerning the construction of a barrier wall between light rail and BNSF freight rail tracks, among other project design modifications. | | | |
| July 2019 | Design reached 100 percent completion. Completion of the project design allowed the Metropolitan Council to establish the project budget to be included in the full funding grant agreement. | | | \$204 |
| August 30, 2019 | The Federal Transit Administration granted the second letter of no prejudice. This allowed the Council to incur \$94.3 million in costs for construction and systems development activities under the expectation that these costs would later be reimbursed under a future New Starts grant agreement. | | | |
| August 30, 2019 | Metropolitan Council applied for a full funding grant agreement. The full funding grant agreement between the Metropolitan Council and the Federal Transit Administration established the terms and conditions for federal financial participation in the project and set the maximum amount of federal New Starts funding for a project. | | | |
| September 18, 2019 | Metropolitan Council awarded the systems contract to Aldridge-Parsons Joint Venture for \$194.4 million. The scope included power substations, overhead power cables, tunnel facilities, communications, wayside signaling systems, and testing and integration. | | | |
| March 24, 2020 | Metropolitan Council executed a change order adding the Eden Prairie Town Center Station back into the scope of the project. The cost of the order was \$11.4 million. | | | \$201 |
| April 10, 2020 | The Federal Transit Administration granted the third letter of no prejudice. This allowed the Council to incur \$81.1 million in costs for construction, systems development, and operations and maintenance facility modification activities under the expectation that these costs would later be reimbursed under a future New Starts full funding grant agreement. | | | \$200 |

Exhibit B.1 (Continued)

Detailed Timeline of the Southwest LRT Project

| Date | Description | Opening Date | Metropolitan Council-Approved Budget (in Millions) | Contingency Balance (in Millions) |
|--------------------|---|--------------|--|-----------------------------------|
| April 16, 2020 | <p>Metropolitan Council awarded a contract to modify an existing operations and maintenance facility to LS Black Constructors for \$38.7 million.</p> <p>The scope included construction of three additions to the existing Franklin Operations and Maintenance Facility. These additions included modifying the light rail train car washing and sanding bay, adding five new maintenance bays, and constructing a new rail control center.</p> | | | |
| July 2, 2020 | <p>The Federal Transit Administration granted the fourth letter of no prejudice.</p> <p>This allowed the Council to incur \$55.8 million in costs for construction, systems development, and operations and maintenance facility modification activities under the expectation that these costs would later be reimbursed under a future New Starts full funding grant agreement.</p> | | | \$183 |
| September 2020 | <p>The Federal Transit Administration and Metropolitan Council entered into a full funding grant agreement.</p> <p>This action secured federal New Starts funding for the project.</p> | | | \$182 |
| April 23, 2021 | <p>Metropolitan Council executed a change order adding about one mile of concrete barrier wall between freight rail and light rail tracks in Minneapolis.</p> <p>The cost of the order was \$82.6 million. By May 2021, the contingency fund balance decreased to \$89 million, due in large part to this change order.</p> | | | \$174 |
| August 3, 2021 | <p>Hennepin County approved an additional \$200 million to shore up the project's contingency fund.</p> | | | \$51 |
| August 11, 2021 | <p>Metropolitan Council's governing body approved a change to the project's cost.</p> <p>The Council incorporated Hennepin County's \$200 million contribution into the project's budget. The additional funds are reflected in the September 2021 contingency balance below.</p> | 2023 | \$2,203 | \$45 |
| September 21, 2021 | <p>Metropolitan Council executed a change order replacing sheet pile tunnel supports with a secant wall for a section of the Kenilworth Tunnel.</p> <p>The cost of the order was \$30.0 million. By October 2021, the contingency fund balance decreased to \$209 million, due in large part to this change order.</p> | | | \$244 |

Exhibit B.1 (Continued)

Detailed Timeline of the Southwest LRT Project

| Date | Description | Opening Date | Metropolitan Council-Approved Budget (in Millions) | Contingency Balance (in Millions) |
|----------------|---|--------------|--|-----------------------------------|
| January 2022 | <p data-bbox="427 464 987 520">Metropolitan Council announced new estimates of the opening date and budget.</p> <p data-bbox="427 531 987 709">At the time this report was published, the Metropolitan Council's governing body had not yet formally adopted the \$2.74 billion estimate. The Metropolitan Council had not determined the exact cost of the project or secured funding for over \$500 million of the \$2.74 billion estimate.</p> | 2027 | \$2,738 (not formally approved) | \$198 |
| March 17, 2022 | <p data-bbox="427 737 987 856">Metropolitan Council and construction contractor Lunda-McCrossan Joint Venture reached a settlement agreement, costing up to \$210 million in contingency funds.</p> <p data-bbox="427 867 987 1020">The settlement agreement established a schedule and sequence for civil construction and provided a mechanism for the Metropolitan Council and its construction contractor to settle costs associated with the delay.</p> | | | |

APPENDIX C: NEW STARTS PROJECT DEVELOPMENT

As we indicated in the “Project Timeline” section of this report, the Metropolitan Council began overseeing the design, engineering, and construction of the Southwest Light Rail Transit (Southwest LRT) project in 2011 after the Federal Transit Administration approved its application to pursue grant funding through the federal New Starts Capital Investment Grants Program (New Starts). This program—and required environmental studies—established milestones for the development of Southwest LRT.

To be eligible for New Starts grant funding, projects must be developed using a process specified in federal law. In the table below, we describe the phases of New Starts project development and the years in which Southwest LRT was in each project phase. At several points during this process, the Federal Transit Administration evaluated the Southwest LRT project against a complex set of criteria and approved the project to move to the next step.

Federal requirements for the New Starts grant program have changed over time. The table below describes the New Starts process as it was completed by the Federal Transit Administration, Hennepin County Regional Railroad Authority (HCRRA), and the Metropolitan Council for Southwest LRT. Current New Starts grant program requirements can be found in 49 *U.S. Code*, sec. 5309 (2020); and 49 *CFR*, secs. 611.101-611.211 (2020).

Exhibit C.1 Federal New Starts Process

| Phase | Description | Years Southwest LRT Active in Phase |
|---|---|--------------------------------------|
| Transportation Systems Planning and Alternatives Analysis | Potential grantees demonstrate to the Federal Transit Administration that their proposed project is the result of a systemwide transportation planning process, integrated into regional transportation planning documents, and justified based on a comprehensive review of its costs and benefits. For Southwest LRT, this was accomplished through an alternatives analysis. ^a | Systems Planning: Late 1980s-2010 |
| | During an alternatives analysis, a potential grantee may develop preliminary cost estimates; assess how different alternatives could improve mobility for the study area residents; and evaluate how different alternatives could impact environmental resources such as water bodies, floodplains, and parkland. Once complete, local and/or regional authorities use the alternatives analysis to recommend a particular mode and route of transit—the “locally preferred alternative”—for inclusion in the relevant Metropolitan Planning Organization’s transportation improvement plan. The inclusion of the locally preferred alternative into the transportation improvement plan marks the end of the systems planning and alternatives analysis phase of New Starts project development. | Alternatives Analysis: 2005-2007 |

Exhibit C.1 (Continued)
Federal New Starts Process

| Phase | Description | Years Southwest LRT Active in Phase |
|-----------------------------|--|-------------------------------------|
| Environmental Impact Review | <p>The National Environmental Policy Act of 1969 requires an environmental impact statement (EIS) for any proposed major federal action that could significantly affect the environment. The lead agency under the National Environmental Policy Act may begin preparing a draft EIS during or after the alternatives analysis, and work continues on a project's EIS statement throughout the preliminary engineering stage of project development.</p> <p>The draft EIS analyzes the potential environmental, social, economic, and transportation impacts of project alternatives, including the locally preferred alternative and a no-build alternative.</p> <p>If substantial changes to the project design occur after the publication of a draft EIS, and those changes are relevant to the environmental impact of the project, the lead agency is required to prepare a supplemental draft EIS that assesses the potential impacts of the design changes.</p> <p>A lead agency incorporates the public comments and stakeholder feedback elicited from the draft EIS when it prepares a final EIS. A final EIS evaluates fewer alternatives than a draft EIS and assesses more detailed and advanced project designs and engineering. A final EIS also includes an in-depth discussion of measures to avoid, minimize, and mitigate the environmental impacts of a proposed project.</p> <p>After it reviews a project's final EIS, the Federal Transit Administration issues a record of decision, which documents that a project has met the requirements of the National Environmental Policy Act of 1969. A record of decision is one of the final milestones in the preliminary engineering phase of New Starts project development.</p> <p>If changes to a project's design occur after the record of decision, and those changes could have impacts that were not previously analyzed, the lead agency completes a supplemental environmental assessment and must obtain an amended record of decision from the Federal Transit Administration. Supplemental assessments and amended records of decision may occur after preliminary engineering during the final design phase of New Starts project development.</p> | 2008-2018 |
| Preliminary Engineering | <p>The agency that plans to oversee the design, engineering, and construction of the project—the “project sponsor”—analyzes the scope and design of the locally preferred alternative to identify project risks, assess environmental impacts, and estimate the project's cost and schedule.</p> <p>The project sponsor refines general project plans and drawings into design specifications and standards for the construction of specific track segments, stations, tunnels, bridges, trails, roads, and parking structures. With the project's scope more clearly defined, the project sponsor may start discussions and preliminary negotiations with third parties, such as freight railroads and owners of rights-of-way.</p> | 2011-2016 |

Exhibit C.1 (Continued)

Federal New Starts Process

| Phase | Description | Years Southwest LRT Active in Phase |
|---|--|--|
| <p>Engineering (Also Known as "Final Design")</p> | <p>The project sponsor finalizes the project's scope, cost, schedule, management and finance plans, and construction plans and specifications. The project sponsor also purchases required rights-of-way and other real estate; secures required permits; concludes negotiations with third parties, such as freight rail operators and utility companies; and completes the contract award process for construction contractors and remaining engineering services.</p> <p>The project sponsor can begin construction during the final design phase if the Federal Transit Administration issues a letter of no prejudice (LONP). The LONP permits the project sponsor to incur costs that it expects to be funded by a New Starts grant not yet awarded as part of a full funding grant agreement.</p> | <p>2016-2020</p> <p>Construction under LONP: 2019-2020</p> |
| <p>Full Funding Grant Agreement and Construction</p> | <p>The full funding grant agreement (FFGA) provides the terms of the federal government's participation in the project, including the maximum amount of federal financial assistance for the project and the timing of these disbursements. The agreement also contains the project sponsor's obligation to complete construction of the project and fund the portion of the project cost not financed by the New Starts grant. Once the FFGA has been executed, the grantee may use New Starts grant funding to pay for construction.</p> | <p>FFGA: 2020</p> <p>Construction under FFGA: 2020-present day</p> |

Note: See Appendix A for definitions of key terms used in this table.

^a An alternatives analysis is no longer a requirement for New Starts grant funding.

Sources: Office of the Legislative Auditor, analysis of federal and state laws; and Federal Transit Administration, Hennepin County Regional Railroad Authority, Metropolitan Council, and Transportation Research Board of the National Academies documents.



OLA



August 31, 2022

Judy Randall
Legislative Auditor
Office of the Legislative Auditor
Room 140, Centennial Office Building
658 Cedar Street
Saint Paul, MN 55155-1603
[Sent via email: Katherine.Theisen@state.mn.us]

Dear Ms. Randall,

Thank you for the opportunity to review and comment on the Legislative Auditor's special independent report titled, "*Southwest Light Rail Transit: Project Budget and Timeline.*" As no one report can provide the necessary detail of the nearly 40 years of Southwest Light Rail Transit (LRT) project history, thousands of public meetings, and multiple studies and reports, we appreciate the care and detailed work undertaken in the review of the project's timeline and budget.

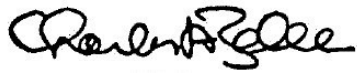
The report identifies the main reasons for the increase cost and delay of the 14.5-mile extension of the existing Green Line to serve the communities of Minneapolis, St. Louis Park, Hopkins, Minnetonka, and Eden Prairie. Specifically, this review:

- Provides an accurate picture of the project timeline since the 1980s;
- Identifies the complexity of designing and constructing a large, public infrastructure project adjacent and within private freight railroad right-of-way;
- Outlines the framework of project development within the Federal New Starts Capital Infrastructure Grants process, the environmental review process while balancing the State's municipal consent laws; and
- Accurately documents the many ways the project budget and scope has been communicated to the public, project partners, and project funders at the local, state, and federal levels for approval.

Thank you again for the opportunity to review and respond to the report. We appreciate the professional manner for which your team carefully documented the main drivers of change on

the project's budget and timeline. If you have any further questions, please contact Matthew LaTour, Director of Program Evaluation and Audit, at 651-602-1174.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles A. Zelle". The signature is fluid and cursive, with the first name "Charles" being the most prominent.

Charles A. Zelle
Chair, Metropolitan Council

For more information about OLA and to access its reports, go to: <https://www.auditor.leg.state.mn.us>.

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