



King County

KING COUNTY AUDITOR'S OFFICE

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Metro Transit: Strengthening Data, Communication, and Continuous Improvement Processes Could Help Reduce Project Delays

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EXECUTIVE SUMMARY

The Department of Metro Transit (Metro Transit) completed most large capital projects between 2016 and 2022 later than planned. While Metro Transit has taken steps to improve its delivery of capital projects, it lacks reliable data and sufficient management processes to evaluate and improve its performance. We make recommendations to help Metro Transit effectively address the causes of schedule delays, more accurately estimate project timelines, and ensure internal processes support project teams and the implementation of high priority projects. These improvements will support Metro Transit in meeting ambitious strategic goals, like fully electrifying its bus fleet by 2035.

Acknowledgment

We would like to acknowledge that the already demanding work performed by the Department of Metro Transit (Metro Transit) has been exacerbated by the COVID-19 pandemic, fluctuations in ridership, and economic uncertainty. Even with these urgent challenges, Metro Transit made time to answer our questions, provide us access to its data systems, policies, and records, and arrange for us to observe capital project meetings and interview staff and leadership. Leadership and staff were open about issues they believe contribute to project schedule delays, which helped the audit team better understand the potential causes and areas of improvement included in this report.

Metro Transit has already started to implement processes that improve management oversight of capital project management and delivery. These initiatives include its Get Things Built framework (the authoritative structure that contains all Capital Division processes and tools), the department's Monthly Business Review, Metro Transit's Capital Division's internal monthly project review, and the Capital Delivery Board. While we discuss gaps identified by staff in some of these initiatives in the report, staff also expressed that these efforts have been positive steps forward and that they feel supported by their supervisors when asking for help. We observed Capital Delivery Board meetings where leadership asked project teams questions to inform their monitoring of cost and schedule performance. Metro Transit has also begun a business transformation effort that includes analyzing needs and making improvements to capital processes. Metro Transit continues to develop internal data systems that make it easier for managers and staff to monitor project schedule and budget performance, higher level budget and schedule trends, resource use, compliance with major milestones, and budget reporting by project teams. Metro Transit managers and staff expressed their commitment to continual improvement and to achieving agency and county goals. The recommendations in this report primarily focus on building upon and improving Metro Transit's existing efforts.

REPORT HIGHLIGHTS

What We Found

The Department of Metro Transit (Metro Transit) completed most capital projects between 2016 and 2022 later than planned.¹ Metro Transit leadership is aware of this issue and has implemented new initiatives to improve its capital planning and delivery processes since transitioning from a division to a department in 2019. We found these initiatives have helped Metro Transit leadership enhance oversight of projects, but gaps in continuous improvement practices, reliable data, and communication with staff hinders the effectiveness of the initiatives and Metro Transit’s ability to improve performance. We also found that Metro Transit lacks estimation standards and has not aligned project plans with internal staff capacity. Finally, Metro Transit has not yet completed tailoring its new processes to the variety of its capital projects and project managers have not found new processes to be effective at helping them solve problems, like causes of delays.

Metro Transit has steadily grown its capital program and increased spending. Nonetheless, since 2017, its spending has not kept pace with its forecasts, and Metro Transit has fallen short of its projected biennium spending on fixed asset capital projects by at least 33 percent. Metro Transit’s data shows this is because it completes projects later than planned. However, we found significant data limitations that limit Metro Transit’s ability to reliably monitor and assess its cost and schedule performance.

What We Recommend

We make recommendations to Metro Transit to improve its processes to address the causes of schedule delays and work with project managers and staff to better understand its capacity to complete projects and improve estimation practices.

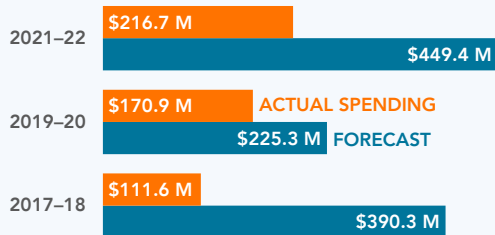
¹ We reviewed 107 fixed asset projects active between January 2016 and April 2022 that had an estimated cost of completion over \$1 million, and we found that all of Metro Transit’s data systems reported delays for most of these projects.

Why This Audit Is Important

Metro Transit delivers critical transportation services to every corner of King County. The King County Executive and King County Council have committed to fully electrifying the bus fleet by 2035, which will require significant capital investments with the need to sequence those investments to meet that timeline and avoid disruptions to service. Metro Transit is planning to more than double its capital spending in 2023–2024, with a significant amount of the increase going to electrification and projects to improve transit mobility like RapidRide.

King County’s 2023–24 budget includes \$1.6 billion in investments for public transportation infrastructure over its six-year planning period, almost 25 percent of the \$7 billion total.

Metro Transit increased spending since 2017 but has missed its spending forecasts by at least 33%.



Source: King County Auditor’s Office analysis of Metro Transit data

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Metro Transit Is Not Delivering Capital Projects on Time

SECTION SUMMARY

The Department of Metro Transit (Metro Transit) is responsible for the delivery of capital projects that maintain and support transportation services throughout King County. However, despite new initiatives, Metro Transit continues to deliver the majority of its capital projects late. Since 2017, Metro Transit has grown its capital program and the Capital Division started new initiatives to improve capital delivery. Despite these new initiatives, capital project delivery delays are persistent, and Metro Transit delivers most projects behind schedule. These delays create the risk that Metro Transit will not be able to achieve high-priority goals, such as electrification by 2035, and could affect Metro Transit's ability to maintain existing service levels.

? What is a capital project?

A capital project is a project to purchase, build, or improve a capital asset, such as a building, road, or vehicle that supports King County's services. Capital projects can also include projects to design, renovate, or acquire equipment, facilities, and other elements of county infrastructure. Metro Transit's capital projects fall into three categories: fleet (e.g., the purchase of new buses and other vehicles), fixed assets (e.g., the construction of operator comfort stations, installation of electric bus charging infrastructure at bus bases, and the implementation of new RapidRide lines), and technology (e.g., the upgrade of the ORCA fare collection system). Metro Transit plans to spend over \$726 million on capital projects during the 2023–24 biennium. Of this total, Metro Transit plans to spend \$565 million on fixed asset capital projects, an increase of 161 percent, or \$349 million, over what it spent in the 2021–22 biennium.

? Why is it important for Metro Transit to deliver capital projects on time?

Delays in capital projects hinder Metro Transit's ability to meet its long-range plans, such as Metro Connects and the transition to a zero-emissions fleet, and its ability to meet existing service levels. Metro Transit delivers transportation services to residents and visitors throughout King County and has committed to improve service through new RapidRide lines and to reduce the County's carbon footprint through electrification of the bus fleet by 2035. Delays in capital projects could lead to Metro Transit not meeting strategic goals related to climate change and service improvements and could mean disruptions in service to riders. For example, Metro Transit will need to install charging infrastructure at each bus base to transition

to a zero-emissions fleet. Management told us these plans may change based on future needs, but Metro Transit currently plans to electrify each bus base in sequence, taking one base off-line at a time. Delays in the electrification of one base could lead to cascading delays in the electrification of the remaining bases, or Metro Transit may have to rely on the more costly and disruptive method of converting half a base at a time.

Additionally, delays in project delivery can result in increased project costs due to inflation. Since the COVID-19 pandemic, costs have increased dramatically. For example, a three-year delay for a project originally planned to be constructed in 2016 would have led to an estimated 15 percent increase in cost. In contrast, a three-year delay for a project planned to be constructed in 2019 would have led to an increase in cost of about 36 percent.

EXHIBIT A: Increases in inflation mean project delays result in higher costs.

A 3-year delay in a project originally planned for **2016** would have increased costs by about **15%**.

A 3-year delay in a project originally planned for **2019** would have increased costs by about **36%**.

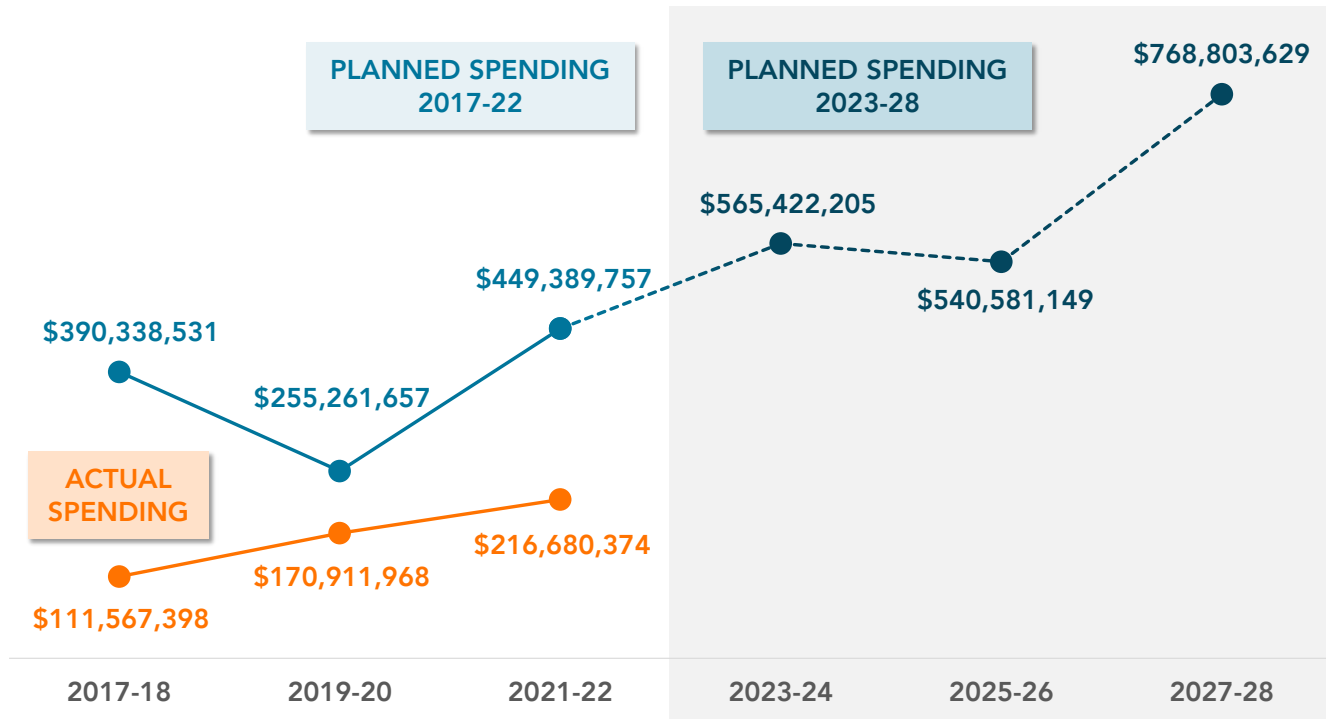


Source: King County Auditor's Office analysis using [Mortenson's Construction Cost Indices](#)

? Is Metro Transit meeting its capital projects delivery goals?

Metro Transit has increased its spending on capital projects since at least 2017, but it has not met its biennial spending goals for fixed asset capital projects. The lag in spending is caused by completing projects late or delaying them, rather than delivering projects under budget. Metro Transit has grown its capital program since 2017 when it began to increase its bus base capacity to meet growing ridership demands. Although growth temporarily slowed in response to anticipated budget shortfalls and decreases in ridership during the 2021–22 budget cycle, Metro Transit planned for an overall increase in its Capital Improvement Program (CIP) for fixed assets from about \$390 million for the 2017–18 biennium to almost \$770 million in the 2027–28 biennium. However, spending has not grown at the rate necessary to achieve forecasts. Since 2017, Metro Transit has missed its projected biennium spending on fixed asset capital projects by at least 33 percent.

EXHIBIT B: Metro Transit has increased its fixed asset capital spending since 2017, but it has missed its planned spending by at least 33 percent.*



*The 2021–22 biennium spending is preliminary and subject to financial year closeout. Fixed asset projects include the construction of buildings, roads, or other long-term assets. At Metro Transit, fixed assets include operator comfort stations and charging equipment at bus bases.

Source: King County Auditor's Office analysis of Metro Transit data

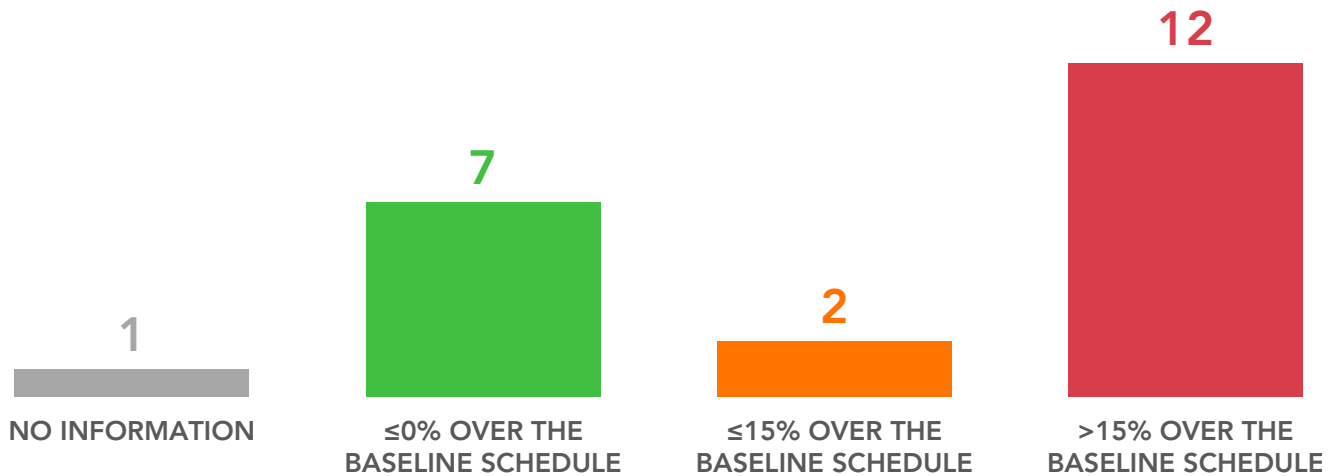
? Is spending an appropriate measure of capital project performance?

Comparing planned to actual spending can provide insight into project performance, but it does not provide information on whether Metro Transit delivered the projects it included in its plan. There are limitations to using capital spending as a measure of performance in achieving delivery goals, as we discuss later in this section. Without an alternative, spending can be a useful proxy for capital program performance and can provide information about how well an entity is increasing its ability to deliver capital projects. Spending less money than planned is not necessarily an indicator of good performance as it could also result from projects being behind schedule or put on hold. This means that relying solely on the spending rate of a project could hide a project that is both over budget *and* behind schedule.

Available data indicates Metro Transit typically delivers fixed asset capital projects late. We reviewed Metro Transit's performance on over 100 fixed-asset projects active between January 2016 and April 2022, and we found that all of Metro Transit's systems for tracking performance reported delays for the majority of projects. For example, in the County's capital Project Information Center (PIC), over

half of the Metro Transit fixed asset capital projects we reviewed were behind baseline schedule duration by more than 15 percent (see exhibit C). Review of Metro Transit's internal Microsoft PowerBI (PowerBI) project dashboard, the County's PIC, and key project documents, called project artifacts, found average variance for schedule performance ranged from 54 to 97 percent behind baseline estimated duration.² Later in this report, we discuss issues with the accuracy and completeness of Metro Transit's project performance data. Nonetheless, all data systems we reviewed were consistent in showing delays in Metro Transit's delivery of fixed asset capital projects.

EXHIBIT C: In the fourth quarter of 2022, over half of Metro Transit fixed asset capital projects reported in the County's capital project database were behind planned baseline duration by over 15 percent.*



*In the fourth quarter of 2022, over half of Metro Transit fixed asset capital projects reported in the County's capital project database were behind planned baseline duration by over 15 percent.

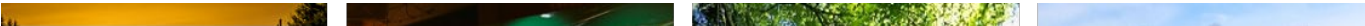
Source: King County Auditor's Office analysis of King County Project Information Center (PIC) system quarterly reports

? What steps has Metro Transit taken to improve capital project performance?

Metro Transit has started to implement processes that improve oversight of capital project management and delivery, but gaps remain that hinder Metro Transit's ability to implement needed improvements. Metro Transit has advanced multiple initiatives over the past several years, including the Get Things Built framework, new monitoring and decision-making processes, such as the Metro Transit's Capital Division's internal monthly project review and the Capital Delivery Board, and expanded internal data systems to make it easier for managers and staff to monitor project schedule and budget performance, trends, compliance with required

² Project artifacts are project documents associated with major milestones, such as project charters, project management plans, notice to proceed letters, and closeout reports. For more information on baselining, see our finding on page 11.

milestones, and resource tracking. However, as we detail in the rest of this report, there are critical gaps in Metro Transit's processes. Overall, Metro Transit has not completed implementation of the continuous improvement steps necessary to adapt management processes when needed. Moreover, gaps in specific areas of operations and a lack of reliable project performance data limit Metro Transit's ability to fulfill its capital delivery commitments.



Accountability for Continuous Improvement, Increased Communication, and More Reliable Data Will Help Metro Transit Improve Capital Processes

SECTION SUMMARY

Metro Transit has started several initiatives to improve capital project planning and delivery since becoming a department in 2019. However, gaps in continuous improvement processes, communication, and data reliability hinder Metro Transit's ability to ensure that initiatives are fully implemented and successful. Metro Transit has been slow to implement continuous improvement initiatives and to ensure that it builds continuous improvement into its capital project management model. Additionally, ongoing gaps in communication between Metro Transit's Capital Division work groups and between staff and leadership may be negatively affecting staff engagement and division productivity. Moreover, Metro Transit's project data is not reliable enough to determine the effectiveness of its efforts to improve cost or schedule performance or identify appropriate staffing levels for projects. These gaps in foundational elements of effective management hinder Metro Transit's ability to improve capital planning and delivery. In this section, we make recommendations to help ensure effective continuous improvement, communication, and data across the division, and in the rest of this report, we make recommendations to improve specific aspects of operations to help Metro Transit achieve its capital project goals.

Metro Transit lacks sufficient continuous improvement processes

Metro Transit has not effectively implemented continuous improvement processes, allowing known issues to persist and delaying the positive benefit of needed improvements. Metro Transit staff and management are aware of many of the issues detailed in this audit, but the lack of robust continuous improvement practices has allowed problems to persist. For example, multiple staff members described to us how they have raised concerns to management, and in some cases proposed solutions, related to the lack of a formal lessons learned practice, the need for formal estimation standards, and the challenges of trying to use Capital Division's project management framework, Get Things Built (GTB), when managing non-traditional projects. Staff repeatedly reported that initial interest from management does not always result in progress or implementation of an improvement.

Metro Transit management has made slow progress on internal continuous improvement efforts. In our ongoing capital oversight role, the Auditor's Office has observed delays and lack of follow up on key internal improvements, such as balancing capital project commitments with available resources, documenting a clear decision escalation process, full implementation of the Capital Management Resource

System database, and cleanup of the performance tracking data in the Capital Division's PowerBI dashboard. For example, in March 2021, Metro Transit reported to us its efforts to develop an escalation process with which project managers could raise concerns to division management, but it did not pilot a draft of this process until November 2022. Similarly, Metro Transit management began implementing a Resource Management Plan to improve alignment between staffing and priority capital projects in early 2021. Although management made good initial progress on its plan, it said that it couldn't complete the initiative because of competing demands on its time. Without timely implementation of continuous improvement initiatives, management misses opportunities to assess whether its efforts are working and to find ways to make them more effective.

Metro Transit's project-related controls include steps to help ensure oversight and corrective action on individual projects, but Metro Transit has not developed accountability processes to help support continuous improvement for the division as a whole. Metro Transit staff and management have, at times, used action items lists and other management techniques to help move internal improvements forward, but these steps appear to have been ad hoc and have not been consistently maintained or updated. For example, the Capital Division's Monthly Business Review has an Action Item Log with which it can track priorities and tasks that are identified during management's monthly review of the division's performance. The log has not been updated since March 2022, even though we observed multiple meetings between September and December 2022 in which managers commented on the importance of reducing the number projects with missing milestone information to help improve the accuracy and usefulness of data in the PowerBI dashboard. For organizations to be effective, they must continually monitor internal processes and fine-tune activities in response to their conclusions. Without a robust practice of evaluating processes, documenting results, and acting to address issues, organizations struggle to make the adjustments necessary to better achieve their goals.

Metro Transit is currently initiating a Business Transformation Process to identify opportunities for greater effectiveness and productivity. However, the Capital Division will be challenged in taking the steps necessary to implement recommendations from the Business Transformation Process or the recommendations in this audit without strong practices to ensure it takes action and conducts follow up on known issues.

Recommendation 1

Metro Transit should develop, document, and implement management accountability processes to support implementation of continuous improvement initiatives.

Communication
gaps make
change
management
more difficult

Gaps in communication have made it more difficult for Metro Transit to navigate the many strategic and operational changes it has undergone since transitioning to a department in 2019, reducing opportunities to engage staff and ensure changes are successful. In addition to navigating the division-to-department process and implementing the new GTB framework governance model, Metro Transit adapted to operating and workforce changes required during the COVID-19 pandemic, changes in ridership due to the pandemic, and policy direction of full electrification by 2035. Metro Transit has made these adaptations during a time of changing financial forecasts while also experiencing three changes in executive leadership and three changes in Capital Division directors. Industry guidance emphasizes that effective change management must be based in communication. The Project Management Institute (PMI) stresses that employee engagement and two-way communication are necessary to create an environment in which change can occur and valid concerns can be raised and addressed. Some elements of the processes Metro Transit has implemented over the past few years, such as cross-functional teams, have helped improve communication and meet industry best practices for managing significant changes. However, persistent gaps in communication reduce the effectiveness of these efforts by negatively impacting staff engagement and causing conflict between groups, resulting in products that do not meet management expectations. These gaps include:

- **Gaps in communication between the division's different work groups and between staff and leadership.** In 2020, the Capital Division created an internal committee to identify issues and propose solutions related to roles, responsibilities, and priorities between internal Metro Transit groups. The committee identified issues including the lack of clear decision-making structures, the need for improved clarity on staff roles, insufficient communication between work groups, and a disconnect between leadership and staff. During our interviews with staff in late 2022, we heard continued concerns and frustration about communication gaps that damage team effectiveness, project progress, and staff morale.
- **Lack of sufficient opportunities for staff to provide feedback to leadership.** Although staff reported that their immediate supervisors are responsive and accountable for things within their control, they emphasized insufficient communication across divisional groups and with upper management, which has created silos within the Capital Division and leaves teams without sufficient support to address delays on high-priority projects. Staff reported that there is no clear venue for providing feedback or asking questions of leadership, so there is limited transparency of issues up through the organization. Relatedly, managers reported challenges communicating with staff about new processes.

Without addressing these gaps in communication, Metro Transit is less likely to successfully implement the changes necessary to overcome the challenges it faces delivering projects to improve mobility across King County.

Recommendation 2

Metro Transit should develop, document, and implement a change management plan that ensures communication between staff and management, improves communication within and between operation groups, and creates forums for staff to ask questions and provide feedback.

Metro Transit's
ability to
improve
performance
limited by
unreliable data

Data reliability issues and missing project documentation limit Metro Transit's ability to evaluate project performance division-wide and identify actions to improve performance. We examined the information in Metro Transit's internal PowerBI data dashboard, reports to PIC, and documented records for capital projects, and we identified issues with incomplete and inaccurate data in all three systems.

- **Data gaps and inconsistencies limit the usefulness of Metro Transit's PowerBI dashboard for measuring performance against baseline estimates.** Capital Division senior leadership team and project managers reported they use Metro Transit's PowerBI dashboard to monitor project progress and track long-term performance. However, project costs are not compared with estimates created at baseline and spending forecasts are updated annually, reducing the system's usefulness for measuring performance against baseline cost estimates. Many projects are also not reporting updated schedule data, meaning that the system's effectiveness is limited as a tool for proactively identifying schedule delays that could impact delivery.

Additionally, when we compared the data in PowerBI to actual project documents, we found inconsistencies between major milestone dates in PowerBI and those in the documentation. For example, 10 percent of projects in our review had a discrepancy for the baseline date, and 20 percent had a discrepancy for the notice to proceed date.³ In both cases, discrepancies between the dates in PowerBI and actual documents were 30 days or more. This means Metro Transit's PowerBI data does not always accurately reflect detailed project progress.

³ We reviewed detailed PowerBI data and artifacts for 107 projects active between 2016 and 2022 and with budgets of over \$1 million. Of these, 48 projects had a baseline artifact and baseline data in the PowerBI dashboard, and 35 projects had a notice

- **Metro Transit is not submitting all required quarterly performance reports to the County’s PIC system.** The Capital Project Management Work Group (CPMWG) requires PIC project performance reporting for baselined projects with a budget of over \$1 million. However, in the third quarter of 2022, Metro Transit did not submit PIC reporting for over a third of projects as required by CPMWG.
- **Key documents are missing from Metro Transit’s capital project records.** After identifying issues with the completeness and reliability of information in Metro Transit’s electronic data systems, we attempted to review key documents for projects initiated since 2016 with a budget of over \$1 million. According to King County policy,⁴ each agency is responsible for establishing its own system to manage and maintain key project information. At Metro Transit, project managers are responsible for this task. However, we found many examples of missing documents, including initial project management plans (PMPs) and baseline PMPs. As a result, Metro Transit is out of compliance with county policy and cannot use project documentation to fill in the gaps of its electronic performance monitoring systems.

EXHIBIT D: In the third quarter of 2022, Metro Transit did not report in the Project Information Center (PIC)—as required by the Capital Project Management Work Group—for 42 percent of projects we reviewed.



Source: King County Auditor’s Office analysis of King County PIC system quarterly reports

to proceed artifact and notice to proceed data in the PowerBI dashboard. Notice to proceed is a written notice authorizing the contractor to start some or all of the work in a contract.

⁴ King County Executive Policy Con 7-9-3 (AEP).

King County aspires to be a results-oriented and continuously improving organization. Incomplete and unreliable data hinders Metro Transit's ability to check actual project scope, schedule, and budget against planned results and identify actions it can take to improve project performance and deliver on its capital commitments.

Recommendation 3

Metro Transit should plan, document, and implement a plan to ensure project managers maintain key documents related to capital project management and performance, such as initial project plans, baseline estimates, and closeout documents.

Recommendation 4

Metro Transit should develop, document, and implement a plan to ensure electronic data systems report accurate and complete project information.

Late project baselining and incomplete data hinder cost performance assessment

Metro Transit project teams sometimes create baseline estimations later than required by county standards, hindering Metro Transit's ability to monitor cost variances and make corrections when project costs are higher than anticipated.

Baselining is the creation of scope, schedule, and budget estimates against which project managers and others can assess project performance. CPMWG establishes that projects should baseline at the end of preliminary design, but it is not uncommon for Metro Transit projects to baseline during final design or later. Certainty around project schedule and cost grows as projects progress further into design and implementation, so projects baselining later should have less schedule and cost variance than those baselining earlier. As a result, inconsistent timing of baselining makes it difficult to measure both individual project and division-wide performance. As described by the PMI, monitoring actual progress against baseline estimates is a fundamental tool for measuring project performance. Additionally, consistent baseline variance tracking provides agencies with information about the accuracy of its estimation practices in general.

Based on available data, Metro Transit often completes projects within the estimated budget, but issues with data quality and late baselining reduce the reliability of cost performance results, which means its projects might not be performing as well on cost as it seems. Data reported in PIC by Metro Transit show that estimated capital project cost variance at completion have generally been less than 15 percent greater than baseline cost estimates. Additionally, in our review of

available baseline and closeout documents for completed projects,⁵ we found that Metro Transit has historically completed projects close to baseline budgets. However, many project documents did not have complete information. Of 33 projects completed within our review period, closeout and baseline documents with complete information⁶ were available for only 17 projects. Of those 17 projects, 8 showed evidence of baselining after the start of final design and two projects had scope decreases without associated re-baselining. As a result of the missing records and late baselining, Metro Transit cannot reliably use past project information to assess cost variance performance.

Metro Transit's internal PowerBI data dashboard currently lacks a report tracking variance from baseline cost estimates, limiting Metro Transit's ability to monitor cost performance. Project cost performance reported in PowerBI is calculated as the difference between the most recently approved cost estimate and the current actual amount spent on the project. As a result, Metro Transit can track performance against current project cost forecasts but does not measure long-term performance against baseline estimates to improve estimation practices or identify gaps in processes that would bring costs closer to those planned. Metro Transit also reports cost variances in its quarterly updates to the PIC data system, though, as we describe above, we found that this reporting is not complete.

⁵ Completed projects with activity between January 2016 and April 2022.

⁶ Complete information means a project had, for both baseline and closeout, cost and schedule data by project phase available in their respective project artifacts.

EXHIBIT E: Metro Transit's data limitations prevent accurate monitoring of capital projects and hinder Metro Transit's ability to identify actions to improve performance.

DATA SOURCE	EXAMPLES OF LIMITATIONS
All data sources	<ul style="list-style-type: none"> • Projects baselining later than required by the Capital Project Management Work Group • Inconsistent milestone dates between sources
Project artifacts*	<ul style="list-style-type: none"> • Missing documents • Inconsistent cost and schedule information between baseline and closeout documentation • Inconsistent cost information between closeout documentation and King County's Oracle EBS Financial System
PowerBI dashboard	<ul style="list-style-type: none"> • Out of date schedule information • Cost information not tracked against baseline estimates
Project Information Center	<ul style="list-style-type: none"> • Projects not reporting as required • Out of date project information

*Project artifacts are internal project management documents associated with milestones such as project management plans, notice to proceed letters, and closeout documentation.

Source: King County Auditor's Office analysis of Metro Transit data

Recommendation 5

Metro Transit should develop, document, and implement a plan to ensure capital project baseline estimates are created at the end of preliminary design, in accordance with Capital Project Management Work Group requirements.



Gaps in Management Practices Lead to Missed Opportunities to Reduce Delays and Improve Processes

SECTION SUMMARY

Metro Transit has overestimated how much capital work it can complete and gaps in management practices do not yet include proactive ways to address project delays, creating missed opportunities to improve schedule performance. Metro Transit has missed its projected biennium spending on capital projects by at least 33 percent since the 2017–18 biennium. Metro Transit has started implementing new processes and frameworks to help improve performance, which Capital Division leadership report being helpful to monitor project performance and focus attention on critical projects. However, project managers report the processes have not provided follow-up action from management to solve issues and gaps persist in project decision-making and escalation guidance. Also, Metro Transit lacks consistent practices for cost and schedule estimation and using lessons learned from past projects. As a result, Metro Transit is missing opportunities to improve its capital planning and delivery practices. Improving the existing practices and addressing gaps discussed in this section will help ensure Metro Transit can more effectively deliver capital projects as planned.

Metro Transit missed its capital spending and delivery schedule goals

Metro Transit has overestimated how much capital work it will complete since at least 2017, making it difficult for county decision-makers to know whether they can rely on Metro Transit’s forecasts for achieving long-term goals. As we describe in section one of this report, Metro Transit has missed its projected biennium spending on capital projects by at least 33 percent since the 2017–18 biennium. For example, Metro Transit missed its projected capital spending for the 2021–22 biennium by over 50 percent. Although Metro Transit’s performance delivering individual projects is more difficult to measure precisely due to the data and records gaps we describe, Metro Transit’s reports to the PIC system show that at the end of 2022, over 50 percent of capital projects were over 15 percent behind the estimated baseline schedule for reaching substantial completion.⁷

⁷ As discussed in section two, per CPMWG, project baselining is required at the conclusion of a project’s preliminary design phase. We found that Metro Transit projects are sometimes baselined later in final design and implementation.

Metro Transit
planned for
needs over
ability to
deliver when
developing
past CIPs

Metro Transit’s process for deciding the size of its biennial CIP has been based on project priority and funding availability rather than an assessment of internal capacity to deliver capital projects, leading Metro Transit to state project timelines it may not be able to meet. Metro Transit’s capital planning group explained to us that it builds the two-year and six-year spending plans around an assessment of needs to meet service goals and strategic objectives, such as electrification and RapidRide. Planning staff said they balance the most critical needs against the funding available to ensure they include the highest priority projects in the CIP. Until recently, Metro Transit’s planning process did not include analysis of the department’s capacity to perform the work associated with the adopted CIP. While planning for the 2023–24 budget, Metro Transit initiated an analysis to balance the proposed CIP with internal resources by categorizing projects by complexity and then estimating the number of projects each project manager could handle at the same time. Some of the peer agencies we spoke with reported using a similar method of evaluating resource needs by assessing project complexity and the number of projects that can be managed by each project manager. Agencies also emphasized the importance of monitoring performance information, collecting staff feedback, and adjusting staffing assumptions as key follow-up steps. Metro Transit staff stated that project managers had not been included in the development of the CIP and felt the lack of consultation with staff, particularly project managers, might have led to unrealistic estimations of how much work could be done and contributed to staff feeling left out of an important step in planning the work they will do.

Metro Transit
starts projects
before delivery
staff are
available

Project delays occur when planners and project managers have to wait for staffing resources to start projects. This happens when there is more planned work than available staff. According to Metro Transit’s GTB framework, planning staff start new projects by creating early budget and schedule estimates and developing initial project plans. Once a project reaches the end of planning, it is handed off to project managers in the Capital Division’s Delivery group to develop, select, and implement the preferred alternative. Staff reported that resource constraints result in planners starting projects before a project manager is available to start implementation. Planners also reported waiting for engineers and subject matter experts to help them develop initial estimates, and project managers reported delays as a result of lack of engineering resources and short staffing in line crews.

Metro Transit has not aligned project plans with internal capacity

Metro Transit has not aligned internal capacity and project prioritization, meaning that Metro Transit may not have the staffing resources to meet major time-bound goals. Achieving its goal of full electrification of the fleet by 2035 will require significant growth of Metro Transit's capital program over the next 12 years. To keep pace with the increase in capital work necessary for electrification, Metro Transit included an appropriation for 20 additional full-time employees (FTE) in its 2023–24 biennium budget, which the King County Council approved. However, Metro Transit management reported that the number of FTEs requested was lower than its estimate of actual staffing needs. They reported that they requested only 20 FTE to be realistic given current hiring challenges. Without an increase in internal capacity that aligns with CIP growth or adjustment of CIP plans to align with existing capacity, Metro Transit risks not being able to meet promised timelines longer term. Metro Transit staff explained that there is a cascading effect of individual project delays on the overall electrification timeline because delays in early electrification projects, such as completion of bases, could delay the delivery of later projects and even impact service. Several of the peer agencies we contacted reported that capacity estimation is complicated, and there isn't industry-wide guidance about how to conduct such an analysis. However, as the PMI emphasizes, without balancing needs against an agency's capacity for capital work, agencies will not be able to complete planned work. This could cause previously prioritized projects to be delayed.

Recommendation 6

Metro Transit should develop, document, and implement a plan for ongoing testing of assumptions about staff capacity used during Capital Improvement Program development. Metro Transit should ensure that staffing capacity assumptions are informed by project staff and tracking of project performance data.

Recommendation 7

Metro Transit should align future Capital Improvement Programs and program timelines with assessments of staff capacity, as described in Recommendation 6.

Inconsistent schedule estimation practices result in inaccurate timelines for individual projects

Metro Transit has not developed a standard or formal guidance for its staff to use when creating cost and schedule estimates, leading to estimates based on different methodologies and reducing management's ability to rely on estimates. Metro Transit does not currently have a standard for staff to refer to when creating project schedule estimates, and staff expressed uncertainty about when or how to request help from an external expert consultant. Some staff members reported relying on individual Metro Transit engineers, while others researched past projects, used internet searches, or preferred using outside

consultants. Project managers expressed concerns about relying on engineers without any formal estimation training. One reported they wanted to know industry standards and practices at peer agencies, while another said they would like more consistency around risk analyses, a key element of estimating.

As a result of these varied practices, cost and schedule estimates used during budget and CIP preparation are not reliably comparable with one another and can be inaccurate. A Metro Transit manager reported that schedule changes after planning are not uncommon and that initial project schedules are often too optimistic. Additionally, problems with schedule estimates often persist after baseline. As we described in section one, Metro Transit's reports to the PIC system show that at the end of 2022, over 50 percent of capital projects were over 15 percent behind the estimated baseline schedule for reaching substantial completion.⁸

Capital Division staff consistently reported to us concerns about gaps in estimation practices that make it difficult for the agency to accurately forecast budgets and schedules for its capital projects. The Metro Transit project managers we interviewed noted that other agencies relied on internal or external subject matter experts to create estimates or had an established practice of using outside experts. One manager noted that some Metro Transit estimates are not rigorous enough. In the US Government Accountability Office's (GAO) *Schedule Assessment Guide*, the GAO describes best practices for creating high-quality, reliable schedules. These practices include factoring resource availability into schedules, establishing the duration of activities based on historical data and clearly documented assumptions, conducting schedule risk analyses, ensuring schedule staff are trained in critical path method scheduling, and continually monitoring updated schedules against an established baseline. Ensuring staff understand these practices through sufficient training will help ensure that staff can implement new guidance.

Recommendation 8

Metro Transit should develop standardized guidance for creating capital project budget and schedule estimates from Capital Improvement Plan preparation through project baseline. Guidance should specify thresholds or scenarios in which Metro Transit will hire consultants to create project estimates.

⁸ As discussed in section two, per the CPMWG, project baselining is required at the end of preliminary design. We found that Metro Transit projects were sometimes baselined later in final design and implementation. Further, of the 107 projects we reviewed, 24 were required to report in PIC at the end of 2022, but Metro Transit submitted reports for only 14 of these projects.

Recommendation 9

Metro Transit should compile a repository of historic performance data and use it to inform future budget and schedule duration estimates.

Recommendation 10

Metro Transit should regularly train staff on the guidance developed in Recommendation 8.

Metro Transit
processes do
not yet help
project teams
solve problems

Metro Transit management has implemented new capital project governance and management processes that improve high-level project oversight, but some project managers report that they add work without helping them solve problems that can contribute to delays. In 2018, Metro Transit initiated the GTB framework, which is an authoritative structure that contains all Capital Division processes and tools and includes a process that divides projects into phases with distinct gates that act as decision points. As part of this adoption, Metro Transit implemented new capital project monitoring and decision-making processes, including the Capital Division's internal monthly project review and the Capital Delivery Board that oversees the phased gate-approval process for capital projects. Metro Transit leaders report these processes help them understand progress and issues on key projects. However, project managers said that while these meetings help bring issues to management's attention, they do not create opportunities for problem-solving.

We observed in the Monthly Business Review meetings in October and December 2022 that some managers were starting to create follow-up meetings with supervisors to research and address schedule delays that had been raised; but this is not yet an established practice, and there was not an agreed-upon structure to ensure accountability for follow through, such as action item tracking or communication with the project manager. Guidance on effective management recommends that managers help personnel fulfill their assigned responsibilities by reducing excessive pressure through tools like adjusting workloads or resources. Without implementing a structure to ensure staff get follow-up help from management when they bring issues to high-level meetings, Metro Transit risks missing opportunities to mitigate project delays, improve internal practices, and engage staff in ongoing problem-solving.

Recommendation 11

Metro Transit should design, document, and implement a system to ensure management follows up on issues raised by project teams during project governance and oversight meetings to help teams with issues that are causing project delays.

Metro Transit
has not finished
tailoring its
capital project
framework for
diversity of
projects

Metro Transit has not yet completed adapting its GTB framework for smaller, partner-led, or alternative-delivery projects, hindering its ability to deliver those types of projects efficiently or with appropriate governance or oversight.⁹

Metro Transit developed its GTB framework around traditional design-bid-build projects and has not yet customized the framework based on the diversity of Metro Transit's projects and delivery methods. As a result, for smaller, partner-led, or alternative-delivery projects, Metro Transit's GTB framework may not be helping project teams be more effective or efficient, as the procedures are not appropriate or well-timed for the varying circumstances of Metro Transit projects. Staff report that this has led to multiple ways in which Metro Transit does not implement GTB as intended, including:

- **Projects may move forward significantly without going through gate processes.** For example, partner-led projects are proceeding on a different timeline than what is in the GTB framework, leading, in one case, to a project not going in front of the delivery board to pass the baseline gate until after the City of Seattle had already begun construction.
- **Meeting GTB requirements may be difficult when working with partners.**
 - One engineer said they are unable to address problems quickly with partners due to the GTB project governance process.
 - A project manager reported that it is difficult to get documents required by the GTB framework from partners when those partners are leading the projects.

Metro Transit has not completed customizing its GTB framework for the diversity of its projects and delivery methods, which would allow the framework to be more effective and efficient. The PMI states that agencies should ensure project management processes are adapted to the environment and complexity of the project. Metro Transit leadership reported that it is in the process of developing minimum milestones in the GTB framework that can then be applied to any type of project. Completing this effort will help ensure that staff are able to use the GTB framework effectively and efficiently. This will be especially important to address as Metro Transit expands its use of alternative delivery methods, which leadership indicated an interest in doing.

⁹ In partner-led projects, Metro Transit contracts with other government entities, usually Seattle Department of Transportation, to implement projects. Alternative delivery projects are those which are not design-bid-build and include delivery methods such as energy services performance contracts, general contractor/construction manager, and design build.

Recommendation 12

Metro Transit should complete its efforts to customize its Get Things Built framework, including adding options for different types of projects and thresholds for project risk and complexity.

Metro Transit's prioritization framework lacks actionable guidance for staff

Metro Transit has implemented new project prioritization frameworks but has not created actionable guidance based on that prioritization, creating uncertainty among project managers as to how prioritization should impact their decision-making or workload management. Metro Transit has project prioritization frameworks to place projects into categories, such as "Spotlight" projects and "Must Fully Resource" projects. Capital Division leadership reports that categorizing projects is helpful for them to know which projects they need to monitor more closely. However, project managers reported not being sure how Metro Transit's new project prioritization frameworks should impact their decision-making or workload management. This is because Metro Transit has not shared actionable guidance with project teams about how prioritization should affect their decision-making or workload management.

While Metro Transit has drafted a Resource Management Plan that includes its prioritization framework as a factor in its management of staff resources, it has not yet implemented it or included in the guidance how teams should use its prioritization framework. Metro Transit leadership acknowledged that the prioritization framework does not yet have specifics on what project staff should do differently based on whether a project is prioritized or not. Project prioritization becomes a less effective control for ensuring resources are dedicated to projects that are essential to meeting agency goals if staff do not change the way they manage their workloads in alignment with the prioritization.

Recommendation 13

Metro Transit should complete the design of its Resource Management Plan and ensure it includes specific guidance for project teams on how to use prioritization frameworks for decision-making.

Gaps persist in project decision-making and escalation guidance

Metro Transit has developed guidance for project decision-making, but the framework has gaps, such as insufficient opportunities for staff to work with leadership on problem-solving to address issues that can lead to project delays and team conflict. Staff in the planning, delivery, and engineering groups reported to us that challenges with decision-making can delay projects and lead to conflict between groups and team members. For example, staff explained that disagreements about project scope resurface over the course of a project, forcing them to revisit issues or make changes. One project manager reported difficulty in getting staff from different parts of Metro Transit to work together, resulting in siloed decision-making

on projects that can be difficult to resolve. Both scenarios can result in further project delays and can have negative effects on Metro Transit's processes and employee culture.

Metro Transit has guidance clarifying the types of issues that project teams should escalate and a workflow for moving decisions through levels of supervisors, managers, and directors, or program governance committees. The guidance is a good step in providing greater clarity about decision escalation processes and staff reported that supervisors are supportive and helpful, but the guidance also states that escalation should be used for "anything the project team cannot reach consensus on." This means the guidance could lead to the routine escalation of decisions that are within the responsibility of the project manager or other team members and could limit teams' ability to resolve issues at a lower level. Without monitoring its use and fine-tuning the guidance during implementation, Metro Transit risks unnecessary escalations that can lead to delays.

Metro Transit management has also not communicated its escalation guidance to all staff, which means some staff may not be aware of opportunities to receive help on issues causing project conflicts or delays. At the end of 2022, Metro Transit management presented an Escalation Guideline to its project and construction management groups but is still working on incorporating the new escalation guidance into its broader GTB framework and has not yet presented the guidance to its planning or engineering groups. This means that some staff are likely not yet aware of the new protocol for escalating decision-making or haven't been able to ask questions and provide feedback so that management can improve the guidance with their suggestions.

Project sponsors could help resolve challenges in decision-making, but Metro Transit does not consistently assign project sponsors to its capital projects. As described by the PMI, project sponsors provide decision leadership that is outside the authority of the project team and project manager and are critical to achieving positive project outcomes. Project sponsors can:

- facilitate engagement of team members
- adjudicate decisions on potential changes to a project
- advocate for the project team
- facilitate executive-level decisions and communication
- remove obstacles and help secure needed resources.

Metro Transit does not have a consistent, documented process for assigning project sponsors. Staff noted that sponsors are sometimes not assigned and, when sponsors are assigned, they may not be in a position to facilitate some of the decision-making described by the PMI. Metro Transit staff we interviewed said that having project sponsors could help with decision-making and project success.

Recommendation 14

Metro Transit should develop, document, and implement processes to ensure all Capital Division staff understand and practice guidance on roles and responsibilities for decision-making and escalation of project issues.

Recommendation 15

Metro Transit should develop, document, and implement a process for updating escalation and decision-making guidance and ensure guidance is informed by feedback from staff in all groups of the Capital Division.

Recommendation 16

Metro Transit should clarify the role of project sponsors in its decision-making and escalation guidance and plan, document, and implement a process to ensure more consistent assignment of project sponsors to its capital projects.

Metro Transit lacks processes to collect and review lessons learned

Metro Transit lacks a process to ensure staff collect, review, and use lessons learned, meaning staff are missing opportunities to use past experience to avoid delays in future projects and to develop more realistic cost and schedule estimates. Metro Transit has a step in its project documentation for project managers to write down lessons learned within individual project records, but Metro Transit does not collect those lessons in a way that would allow staff to review and learn from them when planning future projects or to identify recurring issues. Further, Metro Transit does not have procedures for leaders to review lessons learned to find common causes of delays or inaccurate estimates and then develop systemic improvements in response.

One project manager proactively gathered and analyzed 20 years of lessons learned and found that Metro Transit projects repeated the same issues over time. For example, data for multiple projects between 2005 and 2021 showed that teams should take unknown subsurface risks into consideration and do more subsurface assessments to avoid costly surprises. Without a process for project teams to include a review of lessons learned into current project management, Metro Transit is missing opportunities to mitigate these types of risks in project planning or build estimates that take these risks into account. Metro Transit leadership is also missing opportunities to identify division- or agency-level improvements that could help avoid common issues.

Recommendation 17

Metro Transit should create a repository for its lessons learned from capital projects.

Recommendation 18

Metro Transit should develop, document, and implement a standard practice for project teams to review lessons learned as part of developing estimates and managing projects.

Recommendation 19

Metro Transit should develop, document, and implement mechanisms for management to review lessons learned to identify potential division- or agency-level improvements that could help address common issues on capital projects.

Conclusion

Achieving full fleet electrification by 2035 will require substantial capital investment and timely project delivery. In addition to fleet electrification, Metro Transit has capital needs to support its operations and other priority programs, such as RapidRide. Metro Transit has implemented several improved processes, project management frameworks, and oversight functions to its capital planning and delivery since becoming a department in 2019, and these improvements have helped management better understand project status and priority. However, Metro Transit needs to ensure it can help staff understand and manage the many changes it is asking of them. Moreover, Metro Transit continues to struggle with reliably estimating how much work it can do over time and how long projects will take to complete. Leadership also needs to ensure it completes its many initiatives and is set up to evaluate and improve them with reliable data and input from its staff. Without these steps, Metro Transit increases the risk that its initiatives will not result in improved performance in delivering the capital program it needs to reach its goals.

Executive Response



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June 30, 2023

Kymber Waltnunson
King County Auditor
Room 1033
C O U R T H O U S E

Dear Ms. Waltnunson:

Thank you for the opportunity to review and comment on the proposed final report “Metro Transit: Strengthening Data, Communication, and Continuous Improvement Processes Could Help Reduce Project Delays”. I am grateful for the collaborative approach used by the Audit staff through this process. The Audit team was consistently open to working with the Metro Capital team to determine what data was available, timelines for responses, and modifying questions to better align with available information. As a result, Metro fully concurs on all 19 audit recommendations.

The audit focused on Metro’s ability to deliver on the aggressive capital program required to meet our future service delivery needs, including Metro’s transition to zero emissions. Although this is not the first audit of Metro’s capital program, it is the first opportunity for the Auditor’s Office to learn about the improvements that Metro is making since becoming a department in 2019.

Beginning in 2019, the Metro Capital Division initiated a comprehensive series of process enhancements. While affirming the positive impact of these changes, the audit report correctly identifies that continuous improvement is ongoing. Metro is undertaking an agency-wide Business Transformation program focused on tackling our biggest challenges to meet our vision, and our long range, and strategic plans. Transforming our capital delivery is a key element of that effort. Metro is currently engaged in process mapping that will inform next steps of this work. This audit report, combined with the Business Transformation work underway, will help us focus improvements to the most impactful areas of the Capital program.

Kymber Waltnunson
June 30, 2023
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Attached is our response to the recommendations. If you have any questions regarding our audit response, please contact Mark Ellerbrook, Capital Division Director, at 206-477-6109 or maellerbrook@kingcounty.gov.

Sincerely,



Jennifer Hills
Deputy Chief Operating Officer

Enclosure

cc: Dwight Dively, Director, Office of Performance, Strategy and Budget
Shannon Braddock, Chief of Staff, Office of the Executive
Jennifer Hills, Deputy Chief Operating Officer, Office of the Executive
Kelli Carroll, Director of Special Projects, Office of the Executive
Michelle Allison, General Manager, Metro Transit Department (MTD)
Mark Ellerbrook, Capital Division Director, MTD
Jill Krecklow, Finance & Administration Division Interim Assistant General Manager,
MTD

Recommendation 1

Metro Transit should develop, document, and implement management accountability processes to support implementation of continuous improvement initiatives.

Agency Response	
Concurrence	CONCUR
Implementation date	June 2024
Responsible agency	Metro
Comment	As the audit correctly points out, the Metro Capital Division is working to mature the Get Things Built process, including the Capital Delivery Board and Capital Monthly Business Review. Maturing this process creates opportunities for continuous improvement. The Capital Division is currently conducting a Business Transformation effort on capital delivery. This effort is identifying processes that can be modified to improve performance. These steps will continue to support ongoing efforts to build a culture of continuous improvement.

Recommendation 2

Metro Transit should develop, document, and implement a change management plan that ensures communication between staff and management, improves communication within and between operation groups, and creates forums for staff to ask questions and provide feedback.

Agency Response	
Concurrence	CONCUR
Implementation date	June 2024
Responsible agency	Metro
Comment	As part of the Capital Delivery Business Transformation effort, Metro is implementing change management processes. An outcome of this effort will include how change management can be standardized as an integral part of capital delivery moving forward.

Recommendation 3

Metro Transit should plan, document, and implement a plan to ensure project managers maintain key documents related to capital project management and performance, such as initial project plans, baseline estimates, and closeout documents.

Agency Response	
Concurrence	CONCUR

Implementation date	December 2023
Responsible agency	Metro
Comment	The Capital Division has guidance and expectations regarding storage and retention of key documents. As Capital Division staff mature in their use of the Get Things Built framework, and supervisors/managers hold each other accountable for processes, this will improve.

Recommendation 4

Metro Transit should develop, document, and implement a plan to ensure electronic data systems report accurate and complete project information.

Agency Response	
Concurrence	CONCUR
Implementation date	June 2024
Responsible agency	Metro
Comment	Similar to the comment under Recommendation 3, the development, reporting, and retention of data are part of the Get Things Built framework. Managers, supervisors, and staff will work to continually improve data systems as the division matures in its use of the Get Things Built framework.

Recommendation 5

Metro Transit should develop, document, and implement a plan to ensure capital project baseline estimates are created at the end of preliminary design, in accordance with Capital Project Management Work Group requirements.

Agency Response	
Concurrence	CONCUR
Implementation date	December 2023
Responsible agency	Metro
Comment	The creation of project baseline estimates at the end of preliminary design is part of the Get Things Built framework. As with Recommendations 3 and 4, the Capital Division intends to focus on ensuring that processes in the framework become institutionalized as part of standard work.

Recommendation 6

Metro Transit should develop, document, and implement a plan for ongoing testing of assumptions about staff capacity used during Capital Improvement Program development. Metro Transit should ensure that staffing capacity assumptions are informed by project staff and tracking of project performance data.

Agency Response	
Concurrence	CONCUR
Implementation date	December 2024
Responsible agency	Metro
Comment	While Metro Capital does use staff capacity models when developing the CIP, the effort still results in committing to completing more projects than feasible. The Capital Division intends to modify the approach to developing the CIP going forward, ideally yielding a set of CIP projects that accurately reflects the Division's ability to meet project milestones.

Recommendation 7

Metro Transit should align future Capital Improvement Programs and program timelines with assessments of staff capacity, as described in Recommendation 6.

Agency Response	
Concurrence	CONCUR
Implementation date	December 2024
Responsible agency	Metro
Comment	See comment under Recommendation 6

Recommendation 8

Metro Transit should develop standardized guidance for creating capital project budget and schedule estimates from Capital Improvement Plan preparation through project baseline. Guidance should specify thresholds or scenarios in which Metro Transit will hire consultants to create project estimates.

Agency Response	
Concurrence	CONCUR

Implementation date	December 2024
Responsible agency	Metro
Comment	The Get Things Built framework contains guidance for creating both budget and schedule estimates. The Capital Division is working to have all staff adhere to project guidance and will continue to mature processes.

Recommendation 9

Metro Transit should compile a repository of historic performance data and use it to inform future budget and schedule duration estimates.

Agency Response	
Concurrence	CONCUR
Implementation date	June 2024
Responsible agency	Metro
Comment	The Capital Division does gather past project data. Similar to recommendations about Lessons Learned (below), the Capital Division will work to integrate past data into processes for the development of new project plans (both schedule and budgets).

Recommendation 10

Metro Transit should regularly train staff on the guidance developed in Recommendation 8.

Agency Response	
Concurrence	CONCUR
Implementation date	June 2024
Responsible agency	Metro
Comment	See comment under Recommendation 8.

Recommendation 11

Metro Transit should design, document, and implement a system to ensure management follows up on issues raised by project teams during project governance and oversight meetings to help teams with issues that are causing project delays.

Agency Response	
Concurrence	CONCUR

Implementation date	June 2024
Responsible agency	Metro
Comment	During the Capital Division's Monthly Business Review, Capital Delivery Board and other meetings, the division leaders and others review multiple project data points (spending, project milestones, schedules, etc). The Capital Delivery Business Transformation effort includes development of performance measures designed to improve decision-making.

Recommendation 12

Metro Transit should complete its efforts to customize its Get Things Built framework, including adding options for different types of projects and thresholds for project risk and complexity.

Agency Response	
Concurrence	CONCUR
Implementation date	June 2024
Responsible agency	Metro
Comment	The Get Things Built framework has guidance and is capable of managing alternative milestones for different project types. These can be used for projects that don't meet typical procurement methods (Design/Build projects, for example). The Capital Division will continue to work with project managers and others to develop alternate milestones to accurately reflect how projects are being planned and delivered.

Recommendation 13

Metro Transit should complete the design of its Resource Management Plan and ensure it includes specific guidance for project teams on how to use prioritization frameworks for decision-making.

Agency Response	
Concurrence	CONCUR
Implementation date	June 2024
Responsible agency	Metro
Comment	Metro concurs and believes completion and use of the Resource Management Plan will allow for improved project prioritization and decision making.

Recommendation 14

Metro Transit should develop, document, and implement processes to ensure all Capital Division staff understand and practice guidance on roles and responsibilities for decision-making and escalation of project issues.

Agency Response	
Concurrence	CONCUR
Implementation date	June 2024
Responsible agency	Metro
Comment	While guidance exists for roles and responsibilities for decision making and escalation, the Capital Delivery Business Transformation effort will define the communication issue and how best to communicate current/standard practices. Clarifying roles and responsibilities throughout our processes will help to make escalation and other processes transparent.

Recommendation 15

Metro Transit should develop, document, and implement a process for updating escalation and decision-making guidance and ensure guidance is informed by feedback from staff in all groups of the Capital Division.

Agency Response	
Concurrence	CONCUR
Implementation date	June 2024
Responsible agency	Metro
Comment	Following from Recommendation 14, the Capital Delivery Business Transformation effort is examining existing processes to identify opportunities for improvement. Recommendations from a discovery phase of the effort will be used to modify existing, or create new, processes to ensure that decision-making channels are clearly communicated.

Recommendation 16

Metro Transit should clarify the role of project sponsors in its decision-making and escalation guidance and plan, document, and implement a process to ensure more consistent assignment of project sponsors to its capital projects.

Agency Response	
Concurrence	Concur
Implementation date	June 2024
Responsible agency	Metro
Comment	While the Metro Capital Division uses a project lead model for each project, the Capital Delivery Business Transformation effort is identifying process improvements along with clear roles and responsibilities. To the extent that there are improvements identified in the Sponsor role which could improve project delivery, existing processes will be modified appropriately.

Recommendation 17

Metro Transit should create a repository for its lessons learned from capital projects.

Agency Response	
Concurrence	CONCUR
Implementation date	December 2023
Responsible agency	Metro
Comment	The Metro Capital Division currently identifies lessons learned for each project. These are collected as part of the Get Things Built framework and the Capital Delivery Business Transformation effort is examining these lessons learned to identify improvements that could be made. Improvements may include changes to the way Metro captures lessons learned moving forward and incorporates those lessons into future projects and decision-making. Lessons Learned are valuable tools to learn from past work and can be used in planning for future projects.

Recommendation 18

Metro Transit should develop, document, and implement a standard practice for project teams to review lessons learned as part of developing estimates and managing projects.

Agency Response	
Concurrence	CONCUR
Implementation date	December 2023
Responsible agency	Metro
Comment	See comments under Recommendation 17.

Recommendation 19

Metro Transit should develop, document, and implement mechanisms for management to review lessons learned to identify potential division- or agency-level improvements that could help address common issues on capital projects.

Agency Response	
Concurrence	CONCUR
Implementation date	December 2023
Responsible agency	Metro
Comment	See comments under Recommendation 17.



Statement of Compliance, Scope, Objective & Methodology

Statement of Compliance with Government Auditing Standards

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

Scope of Work on Internal Controls

We assessed internal controls relative to the audit objectives. We assessed the extent to which the Department of Metro Transit (Metro Transit) has controls in place to effectively identify and address capital project schedule delays and to support continuous improvement of capital planning and delivery performance. We also assessed the adequacy of controls to help ensure Metro Transit sets attainable timelines for individual capital projects and the delivery of key county goals, such as bus electrification.

Scope

We selected this audit as part of our work program after observing Metro Transit lagging behind planned capital project delivery schedules for several years. This audit examines Metro Transit's processes for the planning and delivery of capital projects budgeted over \$1 million and active from January 2016 to April 2022. The audit focuses on fixed asset (physical infrastructure) projects. We reviewed budget, spending forecasts, and actual expenditures when available from 2017 through 2028.

Objectives

1. To what extent do planned schedules, scopes, and costs of Metro Transit capital projects align with actual schedules, scopes, and costs?
2. To what extent do Metro Transit's estimation practices accurately forecast capital project schedules and costs?
3. To what extent do Metro Transit project management processes effectively and efficiently deliver capital projects?
4. To what extent does Metro Transit align personnel resources with its priorities for capital projects?

Methodology

The audit team used all available capital project data sources to assess Metro Transit's performance delivering capital projects within schedule and on budget. The team reviewed and compared information in existing databases, including Metro Transit's Microsoft PowerBI data dashboard, King County's Project Information Center (PIC) data system, and Metro Transit's detailed project records for all fixed asset projects with budgets over \$1 million and active between January 2016 and April 2022. Due to gaps and

inconsistencies in the data and records, we determined this approach would not provide reliable results for assessing Metro Transit's performance by project phase, type of project, or time period. The team then shifted to comparing spending forecasts with actual expenditures as a proxy for schedule performance since forecast and actual spending data was well documented and reliable. The team used the results of its work with the more detailed cost and schedule data to speak generally about Metro Transit's cost and schedule performance. The team also described in the report the issues with data completeness and reliability and recommended that Metro Transit improve recordkeeping and the reliability of electronic data.

To assess Metro Transit's performance on delivering the planned scope for capital projects, the audit team reviewed project documents for a sample of 17 completed fixed assets projects active between January 2016 and April 2022. We did not identify a pattern of scope changes that raised concerns for this sample of projects, but we did see late baselining and other factors that could further limit the reliability of Metro Transit's data on project cost and schedule performance, which is discussed in the body of the report. We then expanded our sample for assessing scope changes to include all projects for which baseline and closeout documentation was available and included cost and schedule information at both milestones. The sample was not random, and our results are not representative of the population of all Metro Transit capital projects during the period of review. However, we did report the instances of late baselining on multiple projects in the report.

To assess Metro Transit's historic performance in delivering its Capital Improvement Program (CIP), we compared spending forecasts from the department with actual expenditures on fixed asset projects. To understand Metro Transit's approach to preparing its CIP and aligning its plans with available resources, we interviewed staff and managers in the Capital Planning and Portfolio Management group and the Project Controls, Management, and Performance group.

We conducted over 20 interviews with project planners, project managers, engineers, and constructions managers to learn about capital project roles, practices, and challenges. We also interviewed department and Capital Division leadership. We reviewed key documents including Metro Transit's Get Things Built framework, Project Management Manual, workflow diagrams, and business plans. We observed Capital Division meetings intended to monitor and manage projects, including two Capital Delivery Board and four Management Business Review meetings, and we reviewed the agendas for follow-up sessions from these meetings. We reviewed the charters and descriptions of Metro Transit's internal initiatives, and we compiled and reviewed lessons learned and the causes for delays from documents for completed capital projects within our scope.

We researched best practices related to capital project planning and management, and we talked with individuals in other King County capital departments, King County's Capital Projects Management Work Group, and transit agencies in other jurisdictions to learn how other entities manage the challenges faced by Metro Transit.



List of Recommendations

Recommendation 1

Metro Transit should develop, document, and implement management accountability processes to support implementation of continuous improvement initiatives.

Recommendation 2

Metro Transit should develop, document, and implement a change management plan that ensures communication between staff and management, improves communication within and between operation groups, and creates forums for staff to ask questions and provide feedback.

Recommendation 3

Metro Transit should plan, document, and implement a plan to ensure project managers maintain key documents related to capital project management and performance, such as initial project plans, baseline estimates, and closeout documents.

Recommendation 4

Metro Transit should develop, document, and implement a plan to ensure electronic data systems report accurate and complete project information.

Recommendation 5

Metro Transit should develop, document, and implement a plan to ensure capital project baseline estimates are created at the end of preliminary design, in accordance with Capital Project Management Work Group requirements.

Recommendation 6

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Recommendation 7

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Advancing Performance & Accountability

KYMBER WALTMUNSON, KING COUNTY AUDITOR

MISSION Promote improved performance, accountability, and transparency in King County government through objective and independent audits and studies.

VALUES INDEPENDENCE • CREDIBILITY • IMPACT

The King County Auditor's Office is committed to equity, social justice, and ensuring that King County is an accountable, inclusive, and anti-racist government. While planning our work, we develop research questions that aim to improve the efficiency and effectiveness of King County government and to identify and help dismantle systemic racism. In analysis we strive to ensure that communities referenced are seen, not erased. We promote aligning King County data collection, storage, and categorization with just practices. We endeavor to use terms that are respectful, representative, and people- and community-centered, recognizing that inclusive language continues to evolve. For more information, see the King County [Equity and Social Justice Strategic Plan](#), King County's [statement on racial justice](#), and the King County [Auditor's Office Strategic Plan](#).

ABOUT US The King County Auditor's Office was created by charter in 1969 as an independent agency within the legislative branch of county government. The office conducts oversight of county government through independent audits, capital projects oversight, and other studies. The results of this work are presented to the Metropolitan King County Council and are communicated to the King County Executive and the public. The King County Auditor's Office performs its work in accordance with Government Auditing Standards.



This audit product conforms to the GAGAS for independence, objectivity, and quality.