Metra

Transit Asset Management Plan

2022-2026 HORIZON

TRANSIT ASSET MANAGEMENT PLAN

2022 – 2026 HORIZON

SEPTEMBER 2022

Prepared with support from:

APPROVAL

ACCOUNTABLE EXECUTIVE	SIGNATURE
James Derwinski, Executive Director and Chief Executive Officer, Metra	Jim Derwinski by JMM 9/27/2022

REVISION HISTORY

VERSION NO.	DATE	COMMENTS
1	October 1, 2018	Issued in compliance with FTA TAM Final Rule, 49 CFR 625
2	October 1, 2022	Quadrennial update in compliance with FTA TAM Final Rule, 49 CFR 625

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EXECUTIVE SUMMARY

This Transit Asset Management (TAM) Plan provides an organization-wide view of the asset management work necessary for Metra to deliver transit services across its service area in Northeastern Illinois. The TAM Plan was created in compliance with the requirements set out in the Moving Ahead for Progress in the 21st Century Act (MAP-21,49 USC 5326) and the Federal Transit Administration's (FTA) subsequent TAM Final Rule: 49 CFR 625.

This document is the second iteration of Metra's TAM Plan and will continue to be revised and improved upon as required.

TAM PLAN PURPOSE

The objective of Metra's TAM Plan is to:

- Document the asset portfolio – including nature, extent, age, and condition of Metra's physical assets.
- Identify existing and proposed levels of service to be achieved with these assets.
- Document the key processes, organization and technology tools that enable effective asset management.
- Identify the lifecycle management strategies of each asset class, including inspection, maintenance, rehabilitation, and replacement.
- Assess the capital and operating budgets necessary to support safe and reliable transit services.
- Evaluate and update plans improving Metra's approach to asset management activities.

ASSET MANAGEMENT POLICY

Metra's first Asset Management Policy was developed in 2018 in accordance with Metra's existing policies and remains active. The policy lays out seven asset management guiding principles that guide Metra's asset management decisions to ensure the successful operations of its passenger rail network:

1. The **safety of Metra's system** is paramount. All asset management decisions will be made in accordance with Metra's safety policy and procedures.
2. **Sustainability** of assets is crucial. Managing tasks, costs, and risks throughout the assets' lives will enable Metra to achieve lower lifecycle cost per asset.
3. Metra will **standardize and document** its asset management processes to achieve consistency and improved reliability; to institutionalize knowledge of asset management procedures for the benefit of all of Metra's asset custodians; and, to provide a basis against which Metra can measure its performance.
4. In developing and implementing its asset management policies, processes, and procedures, Metra will **comply with all applicable and mandated requirements**.
5. Metra will **continuously improve** its policies, processes, and procedures related to the conception, acquisition, repair, renewal and replacement of assets.
6. Metra will further develop and integrate its asset related **information systems** to better manage work on its assets. Integration will create efficiencies across the organization and provide data needed to make more informed asset management decisions.
7. Metra will invest in and **develop its workforce's** asset management capabilities to ensure incorporation of Metra's asset management guiding principles throughout the organization.

METRA'S ASSETS AND THEIR CONDITION

The first step to improving the condition of Metra's assets is to identify and document the portfolio of assets under Metra control. Though Metra owns the infrastructure for only four of its eleven rail lines (the rest are owned by private railroads) it is at least partially responsible for capital improvements on all rail lines.

This TAM Plan brings together inventory information from numerous sources and documents the various rolling stock, facilities, equipment, and infrastructure assets that allow Metra to serve its customers. At a high-level, Metra's assets include:

- 855 commuter coach cars
- 163 active commuter rail locomotives
- 182 electric multiple units (EMU)
- 79 pieces of steel-wheel equipment
- 600 trucks and other rubber-tire vehicles
- 50 automobiles
- 24 maintenance and storage yards, including 91 buildings
- 18 other maintenance/admin buildings
- 14 substations and 2 tie stations
- 9 control towers
- 1 administrative headquarters building
- 242 passenger stations
- 819 passenger parking lots/garages
- 1,086 miles of track
- 1,710 turnouts
- 923 bridges
- More than 5,000 signaling assets
- Nearly 1,500 PTC wayside interface units
- 440 miles of catenary
- Approximately 1,500 catenary structures
- 643 cantilevers
- GPS equipment
- 45 ticket vending machines
- Voice of Metra system
- Passenger information system
- 8 microwave towers
- Fiber optic cable transmission system
- Radios
- Phone system
- PTC ETMS Backbone

The second step to improving the condition of Metra's assets is to understand their current condition. Reliable knowledge of asset condition will enable Metra to justify capital programs and more knowledgably prioritize investments across multiple divisions and asset classes. Metra has processes in place to assess condition for facilities, bridges, and rolling stock, while for other assets, condition is determined based on age and useful life using the Capital Optimization Support Tool (COST) developed by the Regional Transportation Authority (RTA). As part of Metra's Implementation Strategy, Metra will be developing a sustainable method for producing condition ratings for all asset classes over the long-term.

Existing condition information reveals that many of Metra's assets remain in need of significant investment. Metra's maintenance and rehabilitation practices enable these assets to function safely and meet service objectives despite their age, but additional resources would improve reliability and performance, and reduce the state of good repair backlog. Metra has a large number of capital projects currently underway that are anticipated to improve condition across many asset classes.

ASSET MANAGEMENT ENABLERS AND LIFECYCLE MANAGEMENT STRATEGIES

Metra's Executive Director/Chief Executive Officer is the Accountable Executive for Asset Management and is responsible for ensuring that this TAM Plan is developed and carried out by delegating the appropriate authority and assigning sufficient resources. Asset Management activities at Metra, including the development of this plan, are led by Metra's Asset Management Analyst and an interdepartmental working group including representatives from the Engineering, Mechanical, Strategic Planning and Performance, Finance, and Grant Management departments.

Organization-wide processes and technologies enable Metra to deliver its asset management objectives and make decisions about asset investments. Metra currently relies on a number of systems to store information on its assets, including Maximo and ServiceMax, which will form the basis of Metra's future enterprise asset management (EAM) system. Since its original TAM plan, Metra has embarked on an improvement program to enhance its inventory collection, data storage and update methods and this remains ongoing.

During the development of this TAM Plan, the current lifecycle strategies for all major assets were reviewed to identify any changes from the first TAM plan. Metra continues to turn its attention to more advanced asset management principles and whole lifecycle thinking. With the oldest commuter rail fleet in the country, Metra relies heavily on regular preventive maintenance and rehabilitation of its rolling stock to extend its life and is in the middle of implementing a plan to significantly improve the state of good repair of its rolling stock over the next ten years through a combination of rehabilitations and new vehicle

purchases. To maintain most other assets in safe and reliable condition, Metra utilizes routine inspections, preventive maintenance, and speedy correction of significant defects identified. An increase in funding from the Rebuild Illinois capital bill and the federal Infrastructure Investment and Jobs Act (IIJA) have allowed Metra to increase its investment in capital projects to rehabilitate and replace aging assets.

INVESTMENT PRIORITIZATION

Each year, Metra's Program Development Department issues a "Call for Capital Projects," inviting user departments to request funds for projects requiring investment over the next five years. Metra's Call for Capital Projects utilizes a standardized spreadsheet-based form that requests departments within the agency to provide information on all projects seeking capital funding in the next five years. The Capital Project Request Form (CPRF) is organized around Metra's key investment prioritization criteria. For the 2022-2026 Capital Program, Metra identified five investment prioritization criteria, an increase from the three established in the 2018 TAM Plan. In 2022, a sixth criterion was added to score projects for the 2023-2027 Capital Program. Current investment prioritization criteria include:

1. Strategic alignment, including sub-criteria for safety and security, customer service, and cost effectiveness
2. Project Readiness
3. Condition
4. Mandate
5. Accessibility, including sub-criteria for improving equity of capital investments, advancing efforts to achieve full accessibility, and improving access to job centers.
6. Emissions Reduction

Projects are rated on a 1 (lowest) to 5 (highest) scale against each of the six criteria with respect to how well they meet each criterion. Projects with the highest scores are considered a higher priority for inclusion in the capital program.

Since the adoption of Metra's first TAM Plan, the criteria, metrics, and measures used in the annual Investment Prioritization process have become more sophisticated. As Metra continues to improve its asset data and business processes, the Program Development team will be able to conduct deeper analysis on the impacts of capital funding strategies and may adjust the investment prioritization criteria accordingly. Further, the Investment Prioritization criteria and criterion score weighting may be adjusted as policies are updated or established by the Metra Board of Directors, RTA, Illinois General Assembly, FTA, and FRA.

For the 2022-2026 Capital Program, adopted in November 2021, Metra estimated having $1.57 billion available for capital investments from federal funds, RTA appropriations, and Metra sources. A significant portion of funding over the next five years will be programmed to purchase new rail cars, conduct midlife rehabilitation of railcars and locomotive engines, replace outmoded signal system infrastructure, and to undertake the largest station rehabilitation program in Metra's history.

ASSET MANAGEMENT IMPLEMENTATION

At a minimum, this Plan will undergo a comprehensive update and review at least every four years. Certain aspects of the Plan will be reviewed more frequently, including a review of asset condition, performance targets (as part of annual submissions to the National Transit Database), and progress against asset management objectives.

As part of the development of Metra's first TAM Plan, completed in 2018, Metra developed a series of recommended implementation actions that arose out of a consultant's assessment. Metra has completed nearly all planned actions, with two final items currently underway. Over the coming four years, Metra will continue to improve its asset management capabilities by focusing on developing its EAM system. This will provide Metra with improved and up-to-date asset data from which to make informed decisions.

Metra looks forward to continuing to build on its progress over the last four years to grow a mature asset management system that will enable improvement of Metra's state of good repair and ensure the successful operations of its passenger rail network for many years to come.

INTRODUCTION

This Transit Asset Management (TAM) Plan sets out Metra's approach to managing the assets that deliver public transportation services in Northeastern Illinois.

OVERVIEW

In operation since the early 1980s and formed from several bankrupted railroads that have operated in the region since the late 1800s, Metra is a legacy rail system that provides service across six counties in Northeastern Illinois. With 11 rail lines serving more than 240 stations, Metra is one of the largest and most complex commuter rail systems in the United States. Prior to the COVID-19 pandemic, Metra provided approximately 280,000 trips per weekday, however, this number has declined significantly during the pandemic. Though ridership began to creep back up in 2021, it is not expected to return to pre-pandemic levels during this plan's horizon period.

The pandemic has accelerated prior trends toward working from home and it is expected that many Metra customers will continue to have the option to work from home one or more days per week indefinitely. In response to these changes, Metra has been examining travel patterns and listening to its riders about the services they want and need. Metra launched several pilot schedules in 2021 and continues to seek ways to better balance service levels throughout the day, with consistent schedules that include express and reverse commute options and encourage transfers.

While the pandemic-induced ridership reduction has dramatically reduced fare revenues that have long funded half of Metra's operations, federal relief funding has helped to plug the gap temporarily. On the capital side, after years of underfunding that resulted in Metra falling behind on its capital investments, Metra has recently received an infusion of capital funding from the Rebuild Illinois capital bill enacted in 2019 and the federal Infrastructure Investment and Jobs Act (IIJA) passed in 2021. Together, these additional funding sources allow Metra to significantly increase its investment in its assets, thereby starting to reduce the state of good repair (SGR) backlog and better serving Metra's customers.

To ensure Metra is positioned to effectively and efficiently utilize the influx of new capital funding, in 2020 Metra established a new Project Delivery Department and brought on a Program Management Oversight (PMO) consultant to help accelerate capital project delivery. The PMO is helping Metra improve its project management and project controls processes and systems, as well as augmenting Metra's staff with planners and engineers to help manage delivery of capital projects through all phases, from initial concept through construction and handover.

Since completion of its first TAM Plan in 2018, Metra has been delivering its TAM Implementation Plan to improve asset data collection and storage in order to make better decisions about its assets. As described in more detail in the Asset Management Implementation section, the path toward implementation of systemwide Enterprise Asset Management remains ongoing, but significant progress has already been made in defining the requirements of such a system.

Through cross-discipline cooperation and coordination, formalized processes, and use of technology, Metra strives to make prudent, data-driven decisions related to the effective management of assets. Metra's efforts to improve asset management are driven by Metra's dedication to operating safe, reliable service, the potential savings and efficiencies that can be gained, as well as compliance with Federal Transit Administration (FTA) requirements. By following this TAM Plan, Metra aims to optimize the use of its assets, allowing them to continue functioning safely, and enabling Metra to provide reliable service for customers.

ACCOUNTABLE EXECUTIVE

625.25 (a)(3) A provider's Accountable Executive is ultimately responsible for ensuring a TAM Plan is developed and carried out in accordance with this part.

The Accountable Executive with responsibility for carrying out asset management practices is Metra's Executive Director and Chief Executive Officer, **James Derwinski**.

SCOPE OF THE TAM PLAN

This TAM Plan covers the following asset types across Metra's 11 rail lines:

- Rolling stock
- Non-revenue vehicles and work equipment
- Maintenance and administrative facilities
- Passenger stations and parking facilities
- Track
- Bridges
- Electric traction power
- Signals
- Telecommunications
- Information Technology

METRA SERVICES

Metra owns and operates four of its rail lines (Rock Island, Metra Electric, Milwaukee North and Milwaukee West). Service on three Metra lines is operated by Metra employees over freight railroad-owned track through trackage rights or lease agreements (Heritage Corridor, North Central Service and SouthWest Service). Service on four additional Metra lines is operated directly by freight railroads through purchase-of-service agreements (BNSF, Union Pacific North, Union Pacific Northwest and Union Pacific West lines), using Metra-owned rolling stock. Finally, Metra has a purchase of service agreement with the Northern Indiana Commuter Transportation District (NICTD) for one station (Hegewisch) that is owned by Metra but is only served by NICTD's South Shore Line. Metra is responsible for capital improvements on all lines. The extent of responsibility is based upon many factors, such as gross tonnage and train counts. Metra is also responsible for stations – especially the platforms – and parking facilities, with additional support coming from municipalities.

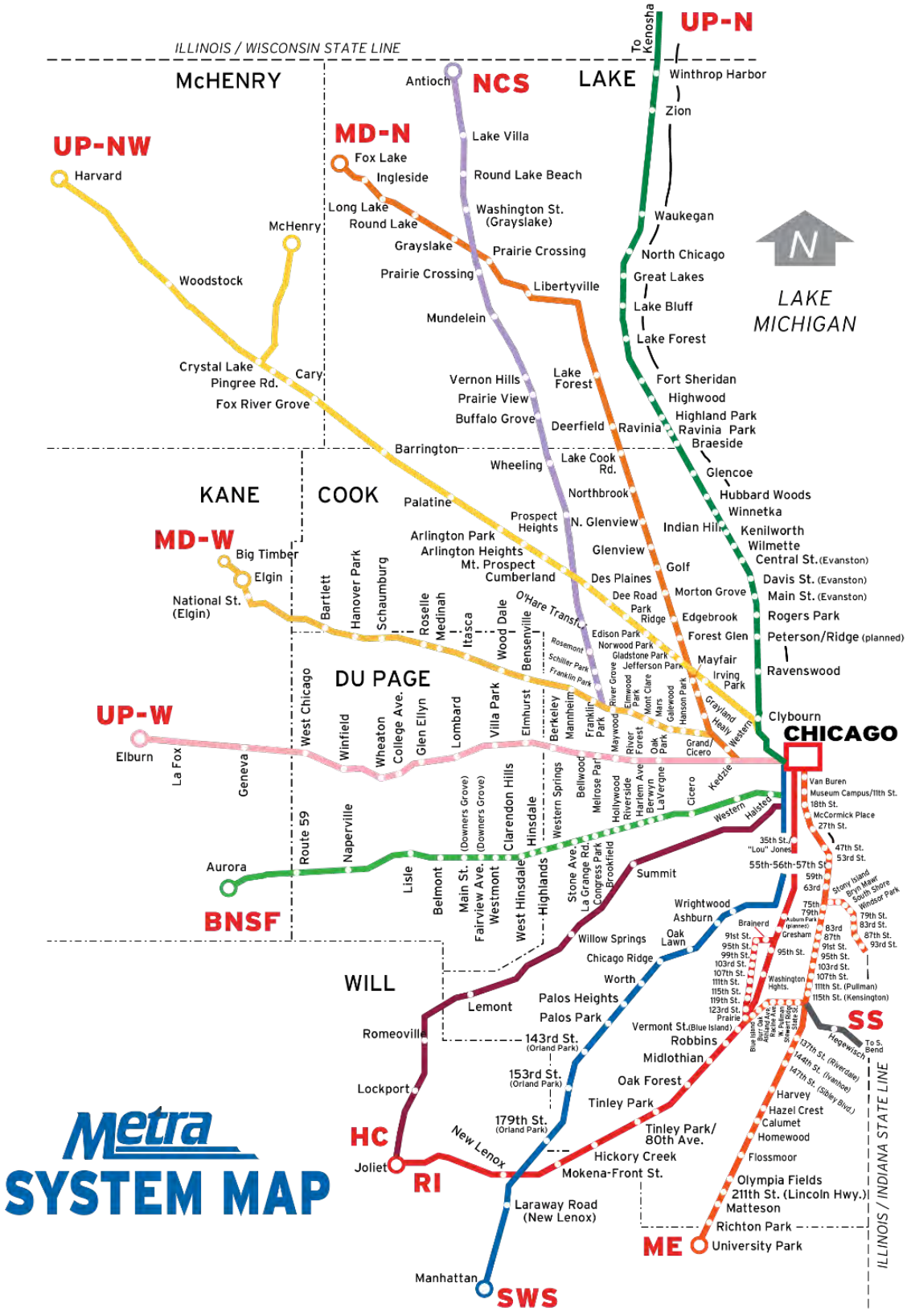
Table 1 illustrates the varying ownership and responsibility over Metra's rail lines. All of these assets, whether owned by Metra or not, contribute to Metra's ability to serve its customers. Thus, all are included in the scope of this TAM Plan. However, detailed information on lifecycle strategies for infrastructure owned by other railroads is not included.

Table 1. Responsibility for Metra's Assets by Rail Line

LINE	INFRASTRUCTURE		ROLLING STOCK		OPERATIONS
	Ownership	*Maintenance Responsibility*	*Ownership*	*Maintenance Responsibility*	*Service Responsibility*
BNSF Railway (BNSF)	BNSF	BNSF	Metra	BNSF	BNSF
Heritage Corridor (HC)	CN	CN	Metra	Metra	Metra
Metra Electric District (MED)	Metra	Metra	Metra	Metra	Metra
Milwaukee District North (MD-N)	Metra	Metra	Metra	Metra	Metra
Milwaukee District West (MD-W)	Metra	Metra	Metra	Metra	Metra
North Central Service (NCS)	CN & Metra	Metra	Metra	Metra	Metra
Rock Island District (RID)	Metra	Metra	Metra	Metra	Metra
SouthWest Service (SWS)	NS& Metra	Metra	Metra	BNSF (Day) Metra (Night)	Metra
Union Pacific North (UP-N)	UP	UP	Metra	UP	UP
Union Pacific Northwest (UP-NW)	UP	UP	Metra	UP	UP
Union Pacific West (UP-W)	UP	UP	Metra	UP	UP

Figure 1, below, shows Metra's reach across six counties in Illinois and into Southeast Wisconsin.

Figure 1. Map of Metra Lines and Stations



OBJECTIVES

The objective of Metra's TAM Plan is to:

- Document the asset portfolio – including nature, extent, age, and condition of Metra's physical assets.
- Identify existing and proposed levels of service to be achieved with these assets.
- Document the key processes, organization and technology tools that enable effective asset management.
- Identify the lifecycle management strategies of each asset class, including inspection, maintenance, rehabilitation, and replacement.
- Assess the capital and operating budgets necessary to support safe and reliable transit services.
- Evaluate and update plans for improving Metra's approach to asset management activities.

This TAM plan builds on Metra's initial TAM Plan and serves as a foundation for further development of robust asset management practices.

RELATIONSHIP TO OTHER DOCUMENTS

Metra's TAM Plan is informed by and aligned with several other Metra documents, including:

- 2018-2022 Strategic Plan: On Track to Excellence sets forth the goals and objectives around which this TAM Plan is aligned.
- 2022 Operating and Capital Program and Budget Book provides an overview of Metra's system, describes the funding challenges it faces, and outlines the capital and operating budget projections, including the five-year capital program.
- January 2019 Rail Fleet Management Plan describes how Metra maintains its fleet of rolling stock, and its fleet requirements over the next decade to meet ridership projections.
- State of the System Report provides an overview of Metra's operating environment and customer base across the system and on each line.
- 2021 System Safety Program Plan lays out Metra's safety objectives and how it will meet them, in compliance with the Federal Railroad Administration (FRA) System Safety Regulation, 49 Code of Federal Regulations (CFR) Part 270.
- Metra 2016 Title VI Program & Policy documents how Metra complies with Title VI of the Civil Rights Act of 1964 and Federal Transit Administration Circular 4702.1B, Title VI Requirements and Guidelines for Federal Transit Administration Recipients
- Miscellaneous policies, procedures, standards, and plans, which document how Metra operates, providing information used within this TAM Plan.

TAM PLAN PERIOD

> 625.29 Transit Asset Management plan: horizon period, amendments and updates. (a) *Horizon period.* A TAM Plan must cover a horizon period of at least four (4) years. (b) *Amendments.* A provider should amend its TAM Plan whenever there is a significant change to the asset inventory, condition assessments, or investment prioritization that the provider did not reasonably anticipate during the development of the TAM Plan. (c) *Updates.* A provider must update its entire TAM plan at least once every four (4) years. A provider's TAM plan update should coincide with the planning cycle for the relevant Transportation Improvement Program or Statewide Transportation Improvement Program.

This TAM Plan covers a five-year time horizon from 2022-2026. While this is one year longer than the FTA mandated four-year time horizon, and is also longer than Metra's three-year operating cost plan, it is consistent with Metra's Strategic Plan, Capital Program, and other Federal planning cycles, such as the region's 2019-2024 Transportation Improvement Program (TIP) developed by the Chicago Metropolitan Agency for Planning (CMAP), the region's federally designated Metropolitan Planning Organization (MPO). In addition, the Regional Transportation Authority (RTA), which is charged with financial oversight, funding, and regional transit planning for Metra and the region's other two transit operators, Chicago

Transit Authority and Pace, is required to prepare and adopt a Strategic Plan every five years, as mandated by the 2008 RTA Act.

Future updates to this TAM Plan will be made at least every four years, or as needed when any significant changes to the asset inventory, updated condition assessments, major investments, or revisions to the prioritization processes occur. “Significant” changes that would warrant an update are expected to include the acquisition of such as a new fleet, facility, or infrastructure acquisition worth more than $100 million, a major revision in prioritization criteria, or other large-scale changes.

Metra did not directly update its initial TAM plan prior to this revision; however, annual memos were developed regarding outputs of the Decision Support Tool for Investment Prioritization which can be considered amendments.

TAM PLAN REQUIREMENTS

In July 2012, the U.S. Government enacted the Moving Ahead for Progress in the 21st Century (MAP-21) Act, a funding and reauthorization bill that places specific asset management requirements on transit operators across the U.S. MAP-21 required all transit agencies to develop and update an Asset Management Plan.

The FTA released the TAM Final Rule in July 2016, under Part 625 of Title 49 CFR. Table 2 lists the requirements of FTA's TAM Final Rule and describes how the contents of this document relate to these requirements.

Table 2: TAM Plan Requirements and Section Correspondence

REF#	49 CFR PART 625	PAGE NUMBER (STARTING)
1	625.25 (a)(1) Each tier I provider must develop and carry out a TAM Plan that includes each element under paragraph (b) of this section. (2) Each tier II provider must develop its own TAM Plan or participate in a group TAM Plan. A tier II provider's TAM Plan and a group TAM Plan only must include elements under paragraphs (b)(1) through (4) of this section.	Entire document
2	625.25 (a)(3) A provider's Accountable Executive.	5
3	625.25 (b) A TAM Plan must include (1) An inventory of the number and type of capital assets.	14 and appendices
4	(2) A condition assessment of those inventoried assets for which a provider has direct capital responsibility.	16 and appendices
5	(3) A description of analytical processes or decision-support tools that a provider uses to estimate capital investment needs over time and develop its investment prioritization;	27
6	(4) A provider's project-based prioritization of investments,	29 and Appendix A
7	(5) A provider's TAM and SGR policy;	11
8	(6) A provider's TAM Plan implementation strategy;	20, 24, 31
9	(7) A description of key TAM activities that a provider intends to engage in over the TAM Plan horizon period;	21, 24 and appendices
10	(8) A summary or list of the resources, including personnel, that a provider needs to develop and carry out the TAM Plan; and	20
11	(9) An outline of how a provider will monitor, update, and evaluate, as needed, its TAM Plan and related business practices, to ensure the continuous improvement of its TAM practices.	31
12	625.33 Investment prioritization. (a) A TAM Plan must include an investment prioritization that identifies a provider's programs and projects to improve or manage over the TAM Plan horizon period the state of good repair of capital assets for which the provider has direct capital responsibility. (b) A provider must rank projects to improve or manage the state of good repair of capital assets in order of priority and anticipated project year. (c) A provider's project rankings must be consistent with its TAM policy and strategies. (d) When developing an investment prioritization, a provider must give due consideration to those state of good repair projects to improve that pose an identified unacceptable safety risk when developing its investment prioritization. (e) When developing an investment prioritization, a provider must take into consideration its estimation of funding levels from all available sources that it reasonably expects will be available in each fiscal year during the TAM Plan horizon period. (f) When developing its investment prioritization, a provider must take into consideration requirements under 49 CFR 37.161 and 37.163 concerning maintenance of accessible features and the requirements under 49 CFR 37.43 concerning alteration of transportation facilities.	27
13	625.45 Setting performance targets for capital assets. (a) *General*. (1) A provider must set one or more performance targets for each applicable performance measure. (2) A provider must set a performance target based on realistic expectations, and both the most recent data available and the financial resources from all sources that the provider reasonably expects will be available during the TAM Plan horizon period.	18

TAM PLAN STRUCTURE

The plan format shown below outlines the sections contained in this Transit Asset Management Plan.

Executive Summary	Summarizes the core components of all sections below, and could be suitable for separate publication, as required
Introduction	Provides an overview of organization, objectives of this TAMP and Requirements for Asset Management
Asset Management Policy	States the guiding principles by which Metra is developing its Asset Management capability
Levels of Service	Links Customer Levels of Service to technical requirements for the assets
Asset Portfolio	Defines the current asset portfolio and its assessed condition
Asset Management Enablers	States the current asset management enablers including organization, core business processes, and technology
Lifecycle Management Strategies	Identifies key asset management approaches across the lifecycle, including maintenance, overhaul and replacement
Investment Prioritization	Describes Metra's processes for developing investment priorities, and lists currently planned projects
Asset Management Implementation	Identifies update and implementation actions to support continuous improvement
Appendices	Provides further information on each asset class, including specific strategies and work plans

ASSET MANAGEMENT POLICY

The Asset Management Policy defines the guiding principles by which Metra will manage the assets it owns and maintains. The Policy establishes the direction and objectives for developing asset management capability and implementing an asset management plan.

625.25 (b) A TAM Plan must include (5) A provider's TAM and SGR policy;

Metra's first Asset Management Policy was developed in 2018 in accordance with Metra's policy on policies, AD-00-01, which requires periodic review and approval of policies. It is included below.

METRA POLICY

AG-00.01
REFERENCE NUMBER

Asset Management Policy

POLICY STATEMENT

Metra has to make daily asset management decisions to ensure the successful operations of its passenger rail network. These decisions will be guided by a single, coherent policy. Under this policy, Metra's asset management plans and compliance under Moving Ahead for Progress in the 21st Century (MAP-21) and Federal Regulations 49 USC 5326, will be based on the following seven asset management guiding principles:

1. The **safety of Metra's system** is paramount. All asset management decisions will be made in accordance with Metra's safety policy and procedures.
2. **Sustainability** of assets is crucial. Managing tasks, costs, and risks throughout the assets' lives will enable Metra to achieve lower lifecycle cost per asset.
3. Metra will **standardize and document** its asset management processes to achieve consistency and improved reliability; to institutionalize knowledge of asset management procedures for the benefit of all of Metra's asset custodians; and, to provide a basis against which Metra can measure its performance.
4. In developing and implementing its asset management policies, processes, and procedures, Metra will **comply with all applicable and mandated requirements**.
5. Metra will **continuously improve** its policies, processes, and procedures related to the conception, acquisition, repair, renewal, and replacement of assets.
6. Metra will further develop and integrate its asset related **information systems** to better manage work on its assets. Integration will create efficiencies across the organization and provide data needed to make more informed asset management decisions.
7. Metra will invest in and **develop its workforce's** asset management capabilities to ensure incorporation of Metra's asset management guiding principles throughout the organization.

APPLICABILITY

This policy applies to all capital assets as well as to the staff that manages and is engaged across the entire lifecycle management of the assets.

ADOPTED: CEO/Executive Director

8-8-18
Effective Date

LEVELS OF SERVICE

This section of the 2022-2026 TAM Plan establishes the relationship between Metra's strategic goals, the level of service provided, and the required technical performance of Metra's assets.

OVERVIEW

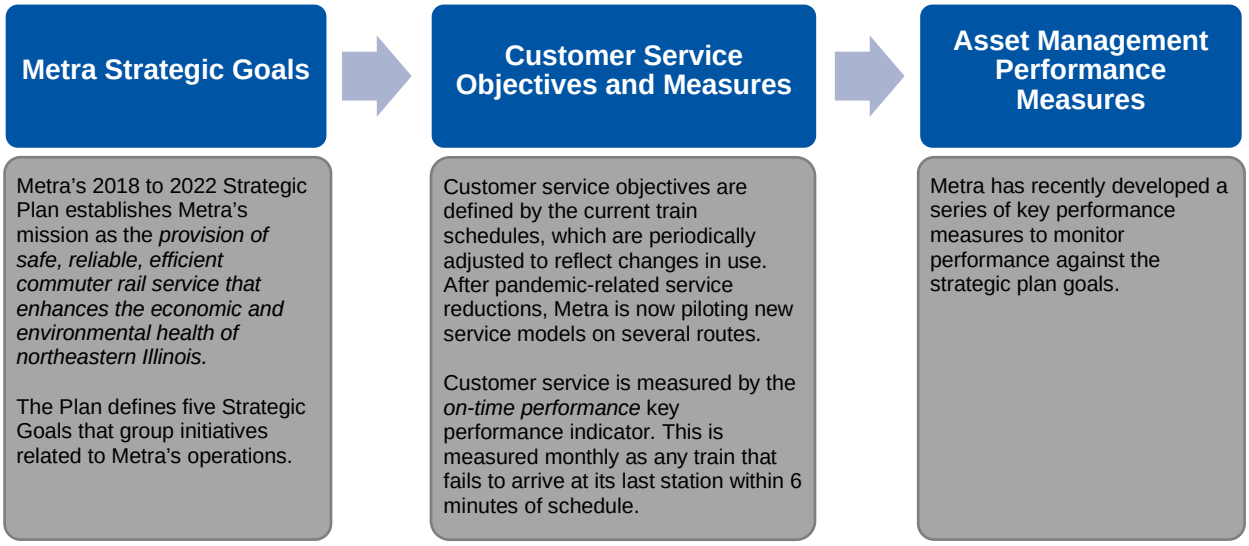
One of the basic cornerstones of good asset management practice is to align asset management activities with an agency's corporate objectives and levels of service, thereby ensuring that assets deliver the required levels of service efficiently and economically. This alignment enables the relationship to be determined between levels of service and the cost of service delivery. In turn, this relationship can be evaluated to:

- Determine the assets' operating and capital needs for meeting the required levels of service, and the funding required to meet these needs.
- Develop asset management strategies and plans to meet required performance targets.
- Monitor asset performance to ensure Metra continues to meet defined levels of service.
- Where necessary, justify additional funding requirements or justify service reduction requirements.

LEVEL OF SERVICE DEVELOPMENT

Following the publication of the Metra 2018-2022 Strategic Plan (released in November 2017), Metra for the first time took steps to align asset and asset management performance targets to customer levels of service and corporate strategic goals. Metra is currently undergoing an update to its strategic plan; this TAM Plan reflects the Strategic Goals, Customer Objectives and Asset and Asset Management Performance Measures of the 2018-2022 Strategic Plan. Figure 2 demonstrates the relationship between these goals, objectives, and performance measures, while Table 3 provides more detail on specific performance measures and their relationship to Metra's goals.

Figure 2. Alignment of Corporate Objectives, Customer Objectives, and Asset and Asset Management Performance Measures



This approach is consistent with best practices in national and international standards on Asset Management. Objectives and measures at each of the three levels in Figure 2, and the connectivity between each, are shown in Table 3, below.

Table 3. Metra's Strategic Goals and Proposed Performance Measures

GOAL	DEFINITION (FROM THE 2018 TO 2022 STRATEGIC PLAN)	MEASURING SUCCESS	ASSET MANAGEMENT PERFORMANCE MEASURES
Goal 1: *Prioritize safety and security awareness*	The safety of Metra's customers and employees will always be the top priority. Metra ensures the system remains safe through compliance with federal, state and local regulations pertaining to the operation, inspection and maintenance of track and equipment, as well as regulations pertaining to the certification of railroad employees.	▪ Lower public and employee injury rates Maintain high level of police visibility on board and at stations ▪ Install, test and deploy Positive Train Control (PTC)	▪ FRA reportable injury ratio ▪ # of employee injuries and lost work days ▪ # of passenger injuries ▪ % complete PTC
Goal 2: *Invest in workforce*	Metra's plans for the future rely upon being able to recruit, develop and retain a capable, talented workforce. To achieve this, Metra is investing in outreach to diversify its applicant pool and is enhancing its in-house development program for all employees.	▪ Improve retention of employees ▪ Increase participation in voluntary development programs ▪ Evaluate success of workforce diversity goals	▪ Employee turn-over rate ▪ Number of years employed ▪ # of training programs and program participants ▪ % employees satisfied
Goal 3: *Deliver quality customer service*	Providing the safest, most efficient and most reliable service to its customers has long been Metra's goal. To ensure that services continue to meet expectations, Metra will monitor customer satisfaction. Metra will also work on low-cost opportunities for improvements to enhance the customer experience.	▪ Monitor trends on annual customer satisfaction surveys ▪ Review and respond to customer feedback ▪ Achieve 95% on-time performance ▪ Rehabilitate stations and facilities	▪ Customer satisfaction ratings ▪ On-time performance goals ▪ Amount spent on station and facility construction ▪ Station beautifications completed
Goal 4: *Optimize capital assets*	Reliable rail service depends on perpetual maintenance of capital assets. For many years, however, Metra has been falling behind on these investments due to funding constraints. Metra will continue to safely operate the aging system. However, the federal, state and local funding has not kept pace with its needs. Metra's implementation of TAM will support efforts to optimize its capital assets despite limited funding.	▪ Purchase new and rehab rolling stock for pollution reduction and reliability ▪ Maintain favorable comparisons to its peers ▪ Complete Station Optimization Study	▪ Operating cost per passenger mile ▪ Miles between mechanical failures ▪ Average vehicle age ▪ Capital funds expended per passenger trip ▪ Number of locomotives by EPA tier ▪ Average number of years since rehab
Goal 5: *Ensure financial stability*	As a public agency, Metra is dependent on funding sources for its operating and capital costs that are unpredictable and often insufficient. This business model is unsustainable. To reverse this course Metra and its Board of Directors are committed to exploring ways to change the status quo and provide stable and sustainable funding sources.	▪ Continue to balance the agency budget each year ▪ Implement cost-saving measures ▪ Leverage funding sources and financing ▪ Initiate backlogged capital projects ▪ Maintain and grow ridership ▪ Grow non-fare revenue ▪ Meet federal and non-federal Disadvantaged Business Enterprise (DBE) goals	▪ Percent favorable/ unfavorable to budget ▪ Discretionary grants obtained ▪ Value of backlog SGR ▪ Ridership by ticket sales ▪ Combined percent of assets beyond useful life

ASSET PORTFOLIO

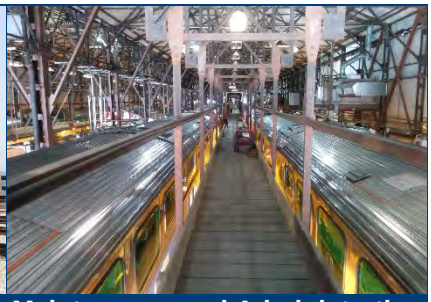
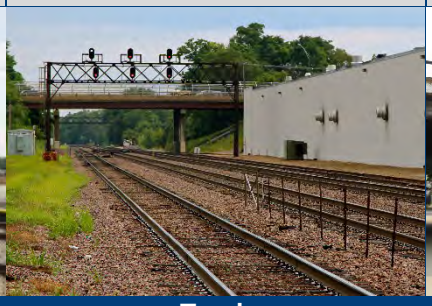
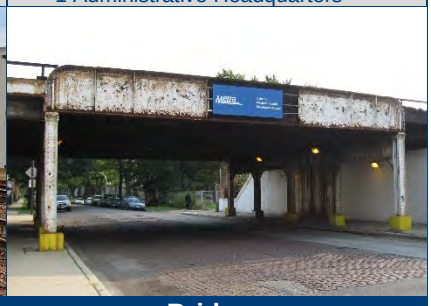
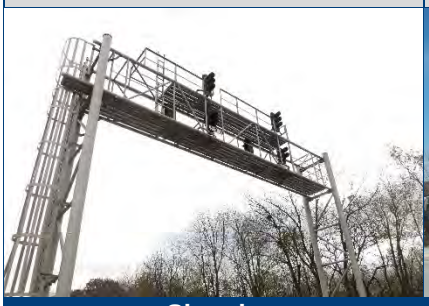
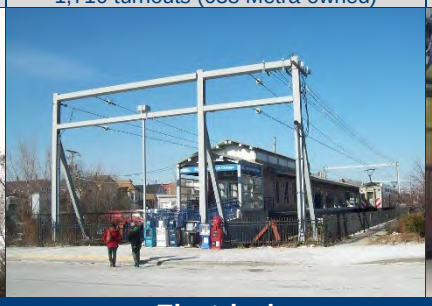
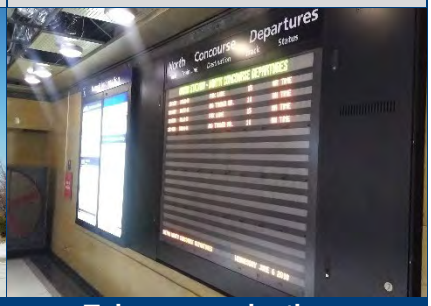
Metra's robust portfolio of assets enables rail service across 1,083 miles of track, among the highest of any commuter railroad in the United States. Metra owns or has partial capital responsibility for approximately 1,200 railcars/locomotives, more than 800 bridges, 242 stations, 24 rail yards, 16 electrical substations/tie stations, and many other assets.

ASSET PORTFOLIO

625.25 (b) A TAM Plan must include (1) An inventory of the number and type of capital assets. The inventory must include all capital assets that a provider owns, except equipment with an acquisition value under $50,000 that is not a service vehicle. An inventory also must include third-party owned or jointly procured exclusive-use maintenance facilities, passenger station facilities, administrative facilities, rolling stock, and guideway infrastructure used by a provider in the provision of public transportation. The asset inventory must be organized at a level of detail commensurate with the level of detail in the provider's program of capital projects;

The ownership, capital (i.e. replacement) responsibility and maintenance responsibility of Metra's assets varies from line to line and from asset class to asset class. Table 1, on page 5, summarizes these varied responsibilities. In all cases, at least some responsibility rests with Metra for operations, maintenance, and capital investments in all assets needed for Metra commuter railroad operations.
A summary of Metra's asset inventory is provided in Table 4, below, by asset class. Metra's inventory is constantly evolving, and this table represents Metra's best understanding of its assets as of December 2021. It is intended as a starting point on which to build as Metra continues to improve its asset inventory collection mechanisms, and as such is subject to change. Additional information for each asset class can be found in the appendices.

Table 4: Metra Current Asset Portfolio

		
Rolling Stock (Revenue Vehicles)	**Non-Revenue Fleet and Equipment**	**Maintenance and Administrative Facilities**
▪ 855 Commuter Coach Cars ▪ 163 Active Commuter Rail Locomotives ▪ 182 EMUs	▪ 79 Pieces of steel-wheel equipment ▪ 600 Trucks and other rubber tire vehicles ▪ 50 Automobiles	▪ 24 Yards, including 91 buildings ▪ 18 Other maintenance/admin buildings ▪ 14 Substations and 2 Tie Stations ▪ 9 Control Towers ▪ 1 Administrative Headquarters
		
Passenger Stations and Parking	**Track**	**Bridges**
▪ 242 Passenger Stations ▪ 819 Passenger Parking Lots/Garages	▪ 1,086 miles of track, including 430 miles of Metra-owned tangent, and 73 miles of Metra-owned curve ▪ 1,710 turnouts (638 Metra-owned)	▪ 446 Metra-owned Bridges ▪ 480 Bridges owned by Contract Carriers
		
Signals	**Electrical**	**Telecommunications**
▪ 2045 switch machines ▪ 740 roadway crossings ▪ 2683 wayside signals ▪ 1,483 PTC wayside interface units	▪ 14 Substations and 2 Tie Stations ▪ 440 miles of catenary wire ▪ 1503 catenary structures ▪ 643 cantilevers	▪ 1,037 Vehicle GPS Trackers ▪ 45 credit-based ticket vending machines ▪ Base station, portable, and mobile radios ▪ Voice of Metra ▪ PA system, Variable Message Signs, Transit Passenger Info System ▪ Video Surveillance Cameras ▪ 8 Microwave towers ▪ Fiber optic cable transmission system ▪ Phone system ▪ PTC ETMS Backbone

ASSET CONDITION

625.25 (b) A TAM Plan must include: (2) A condition assessment of those inventoried assets for which a provider has direct capital responsibility. A condition assessment must generate information in a level of detail sufficient to monitor and predict the performance of the assets and to inform the investment prioritization;

It is critical that Metra has clear knowledge of the condition of its assets and their performance. This information enables justification of capital program funding requests and project prioritization across divisions and asset classes. In order to better communicate needs and the risks of underinvestment, Metra must have a good understanding of its state of good repair needs - informed by condition assessments. This condition data will be a key input of Metra's prioritization process to ensure efficient and effective use of public funding.

CONDITION RATING METHODOLOGY

Metra's methods for assessing asset condition vary across asset classes, as shown in Table 5. Some departments have already established regular, repeatable processes for assessing condition. For example, the Mechanical Department has developed a condition rating methodology that is based on asset age and years since the asset's last rehabilitation (see Appendix B for more detail). Metra-owned bridges have been assigned sufficiency ratings that take into account bridge condition as determined via routine inspections, as well as the bridge's load rating, and several items related to serviceability and functional obsolescence, and essentiality of public use. In accordance with FTA guidance, passenger stations and administrative and maintenance facilities are assessed at least once every four years across 10 primary components and 36 secondary components.

The condition rating for other asset types is based on results from RTA's Capital Optimization Support Tool (COST), used to assess transit capital investment needs across the Chicago region (including for the Chicago Transit Authority and Pace). The COST condition rating process is based on the FTA's TERM-Lite software which uses an age/decay-curve based approach for asset condition estimation. As part of Metra's Implementation Strategy, Metra will be developing a sustainable method for producing condition ratings for all asset classes over the long-term.

In accordance with the TAM Final Ruling, Metra has also begun utilizing the condition metrics that are required reporting for the National Transit Database (NTD), and will be used to measure performance against targets.

Table 5 summarizes these various condition rating methods used by Metra, and any planned changes intended for future use.

Table 5. Condition Rating Methods

ASSET CLASS	CONDITION RATING METHOD
Rolling Stock	1-5 rating based on age and years since last major overhaul
Non-Revenue Vehicles + Equipment	1-5 rating based on age
Maintenance and Admin Facilities	Quadrennial inspections, 1-5 rating, utilizing standard condition assessment forms
Stations and Parking	Quadrennial inspections, 1-5 rating, utilizing standard condition assessment forms
Bridges (Metra-owned)	1-5 sufficiency rating based on condition, load rating, serviceability and essentiality
Bridges (Railroad-owned)	Age-based, 1-5 rating assigned via COST tool
Track	Age-based, 1-5 rating assigned via COST tool
Signals	Age-based, 1-5 rating assigned via COST tool
Electrical	Age-based, 1-5 rating assigned via COST tool
Telecommunications	Age-based, 1-5 rating assigned via COST tool
Information Technology	N/A

Across condition rating methods, the scores follow the FTA-defined condition ratings of one (poorest condition) to five (best condition), as shown in Table 6.

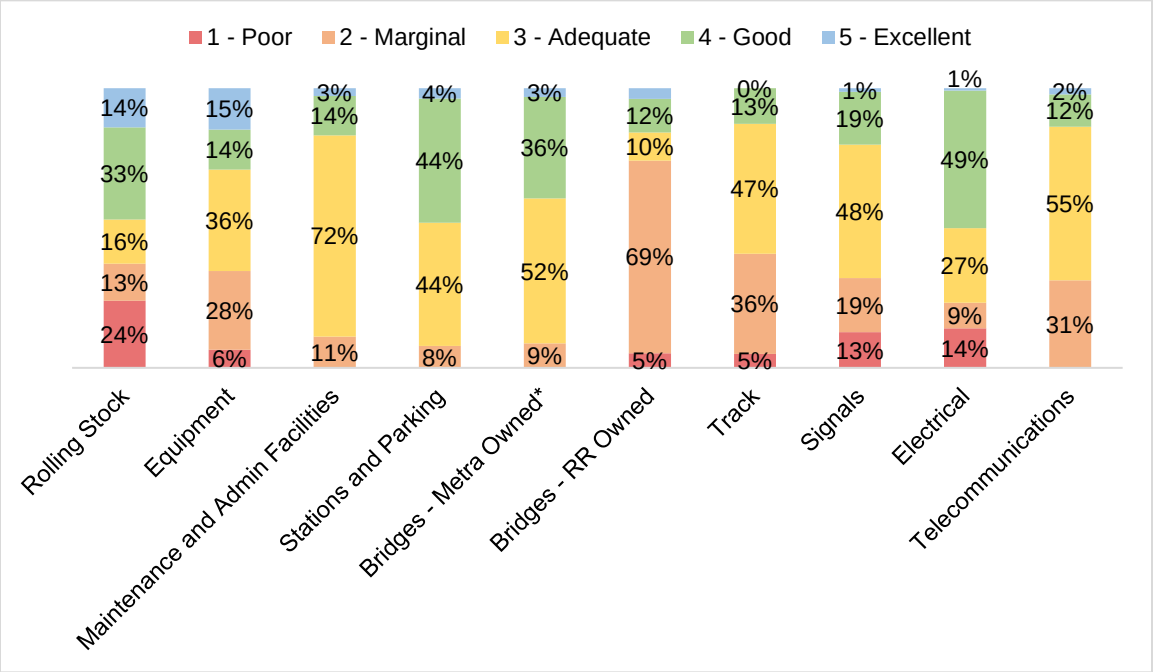
Table 6. Condition Rating Levels

CONDITION	DEFINITION
5 (Excellent)	No visible defects, new or near new condition, may still be under warranty if applicable
4 (Good)	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional
3 (Adequate)	Moderately deteriorated or defective components; but has not exceeded useful life
2 (Marginal)	Defective or deteriorated component(s) in need of replacement; exceeded useful life
1 (Poor)	Critically damaged component(s) or in need of immediate repair; well past useful life

CURRENT CONDITION INFORMATION

Figure 3 provides a high-level summary of asset condition. A more detailed breakdown of condition by asset type is presented in the appendices. As Metra continues to improve its condition assessment practices, condition ratings are subject to change. Condition information for many asset classes is considered preliminary and subject to change as new assessments are undertaken.

Figure 3: Summary Condition Information



* Metra-owned bridges are on a different scale than all other assets:

0-20 Sufficiency 20-40 Sufficiency 40-60 Sufficiency 60-80 Sufficiency 80-100 Sufficiency

CHANGES TO CONDITION

Condition of Metra's assets has been relatively stable since 2018. Rolling stock condition has general improved due to Metra's rehabilitation program, and is expected to see continued improvement in coming years as new locomotives and coaches come online. Condition of equipment has generally worsened since the last TAM Plan, as a function of equipment continuing to age, at a faster rate than it is replaced. Both passenger and maintenance and administrative facilities have generally remained steady or improved, and a number of capital projects underway are anticipated to result in greater improvement over the TAM horizon. Infrastructure asset condition has remained fairly steady, with some declines due to continued aging.

TAM PERFORMANCE TARGETS

625.45 Setting performance targets for capital assets. (a) General. (1) A provider must set one or more performance targets for each applicable performance measure. (2) A provider must set a performance target based on realistic expectations, and both the most recent data available and the financial resources from all sources that the provider reasonably expects will be available during the TAM Plan horizon period.
625.55 Annual reporting for transit asset management. (a) Each provider must submit the following reports: (1) An annual data report to FTA's National Transit Database that reflects the SGR performance targets for the following year and condition information for the provider's public transportation system. (2) An annual narrative report to the National Transit Database that provides a description of any change in the condition of the provider's transit system from the previous year and describes the progress made during the year to meet the performance targets set in the previous reporting year.

Since 2017, Metra has set performance targets and monitored performance of its assets in compliance with the TAM Final Ruling. Table 7 shows Metra's 2021 targets and performance and 2022 targets, while Figure 4, Figure 5, and Figure 6 show the history of targets and performance from 2017-2022 for Rolling Stock, Equipment, and Facilities and Infrastructure, respectively.

Metra's coach and locomotive targets have generally increased over time as the fleet continues to age; while Metra has procurement of new rolling stock underway, these will not come online for a few more years, at which time the targets and performance will be lowered. Metra is likewise planning for replacement of non-revenue vehicles that have exceeded their useful life, but this is expected to take longer than normal due to supply chain disruptions and longer lead times. Metra has increased the number of facilities for which it has documented condition over the last 5 years, and is now reporting on all but 11 facilities (for which a data waiver was submitted). Targets and performance for passenger stations have generally improved over time as stations have been rehabilitated. Infrastructure performance has been impacted by outages due to capital construction activities, which in the long-term are expected to improve performance.

Table 7: 2021 Actual Performance and 2022 Targets

ASSET CLASS	ASSET TYPE	TOTAL QUANTITY	PERFORMANCE METRIC	2021 TARGET	2021 ACTUAL PERFORMANCE	2022 TARGET
Rolling Stock	Coaches	850	% exceeding ULB of 30 years	44%	43%	44%
	Locomotives	170	% exceeding ULB of 30 years	53%	56%	70%
	EMUs	186	% exceeding ULB of 30 years	0%	0%	0%
Equipment	Automobiles	50	% exceeding ULB of 7 years	23%	24%	25%
	Trucks and Other Rubber Tire Vehicles	600	% exceeding ULB of 7/14 years	34%	30%	42%
	Steel Wheel Vehicles	79	% exceeding ULB of 25 years	43%	37%	40%
Facilities	Passenger Stations	243[1]	% with condition < 3 on TERM scale	9%	8%	9%
	Passenger Parking	312				
	Maintenance and Administrative	106	% with condition < 3 on TERM scale	N/A	11%	13%
Infrastructure	Track	1086	% of Direct Route Miles (DRM) under performance restrictions	5%	5%	6%

[1] Incudes Ravinia Park Station, which is only open seasonally.

Figure 4: Rolling Stock Performance History

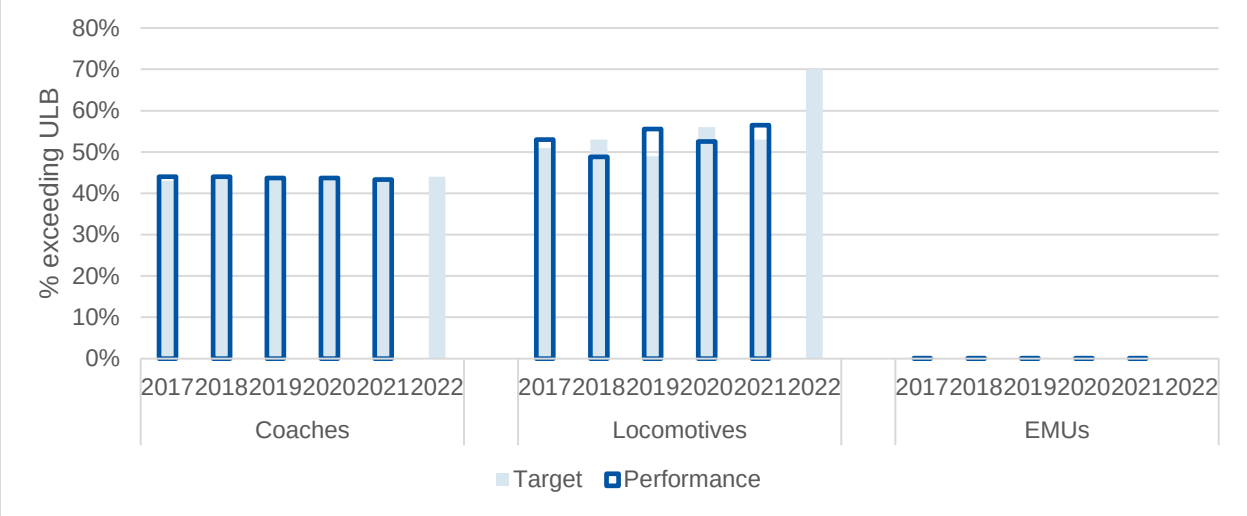


Figure 5: Non-Revenue Vehicles and Equipment Performance History

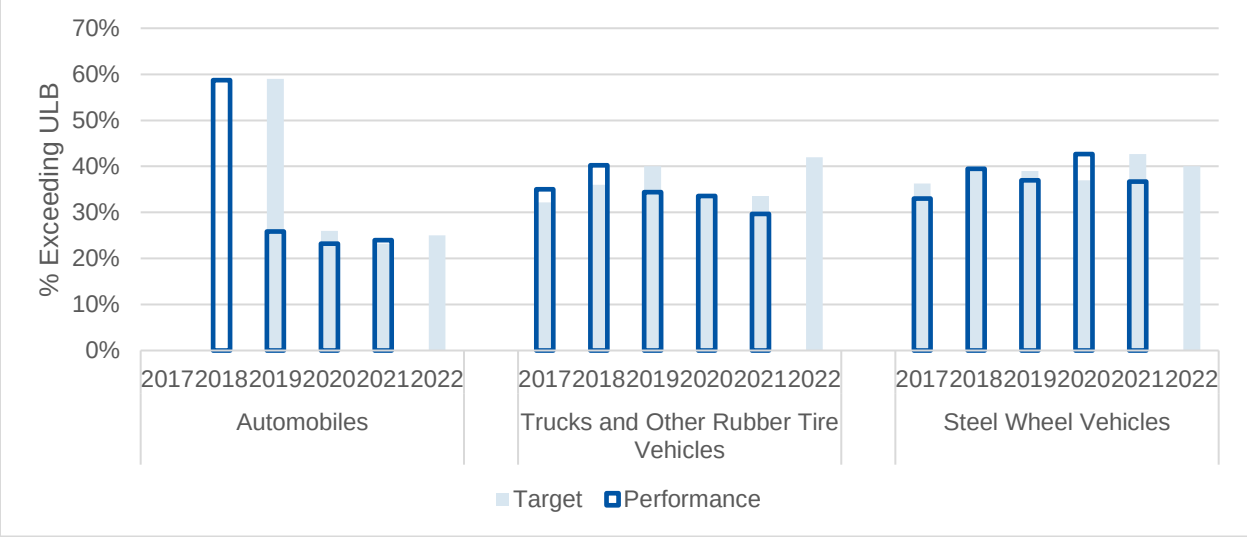
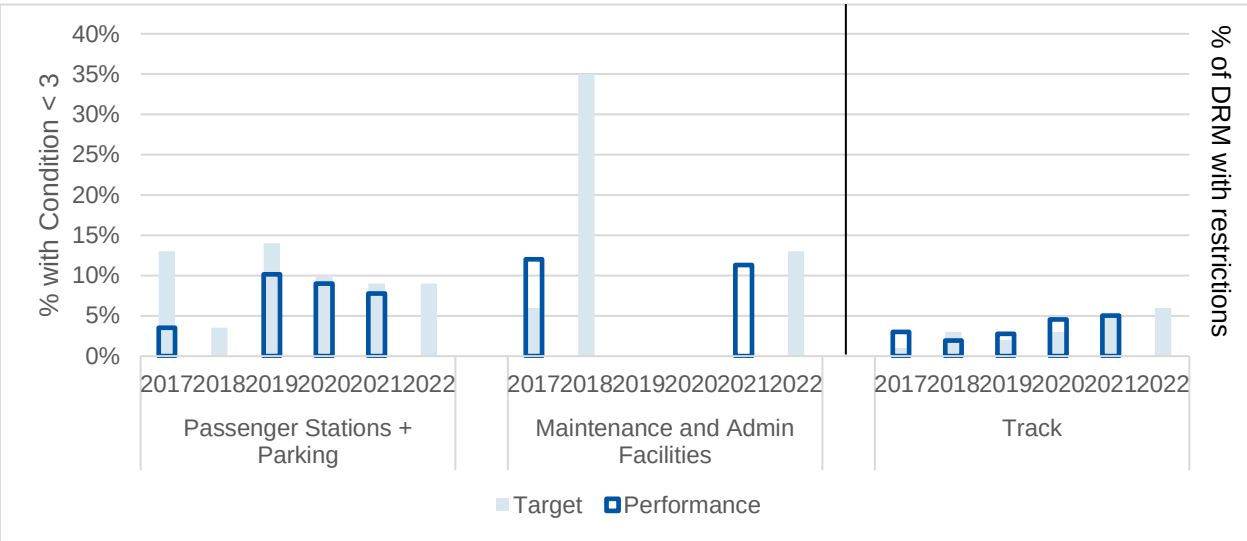


Figure 6: Facilities and Infrastructure Performance History



ASSET MANAGEMENT ENABLERS

Asset Management at Metra is carried out by numerous departments within the agency. Core business processes and support technologies enable asset management decisions and practices.

OVERVIEW

This section describes the organization of Metra, including the roles and responsibilities for asset management, and the resources that will be needed to carry out the activities outlined within this plan. It also identifies the groups that exist outside of the core asset management function, whose activities either support or are dependent on the outcomes of Metra's asset management program, in particular the Office of Safety & Environmental Compliance and the Risk Department.

In March 2021, Metra submitted its System Safety Program Plan (SSPP) to the FRA, as required under 49 CFR Part 270. Metra's SSPP sets out objectives related to safety that are complementary to the asset management objectives set out in this TAM Plan, as outlined in this section. In this updated TAM Plan, Metra's proactive, data-based approach to managing risk across its system – and the relationship between risk management and asset management – has also been described.

ORGANIZATION AND RESOURCE PLAN

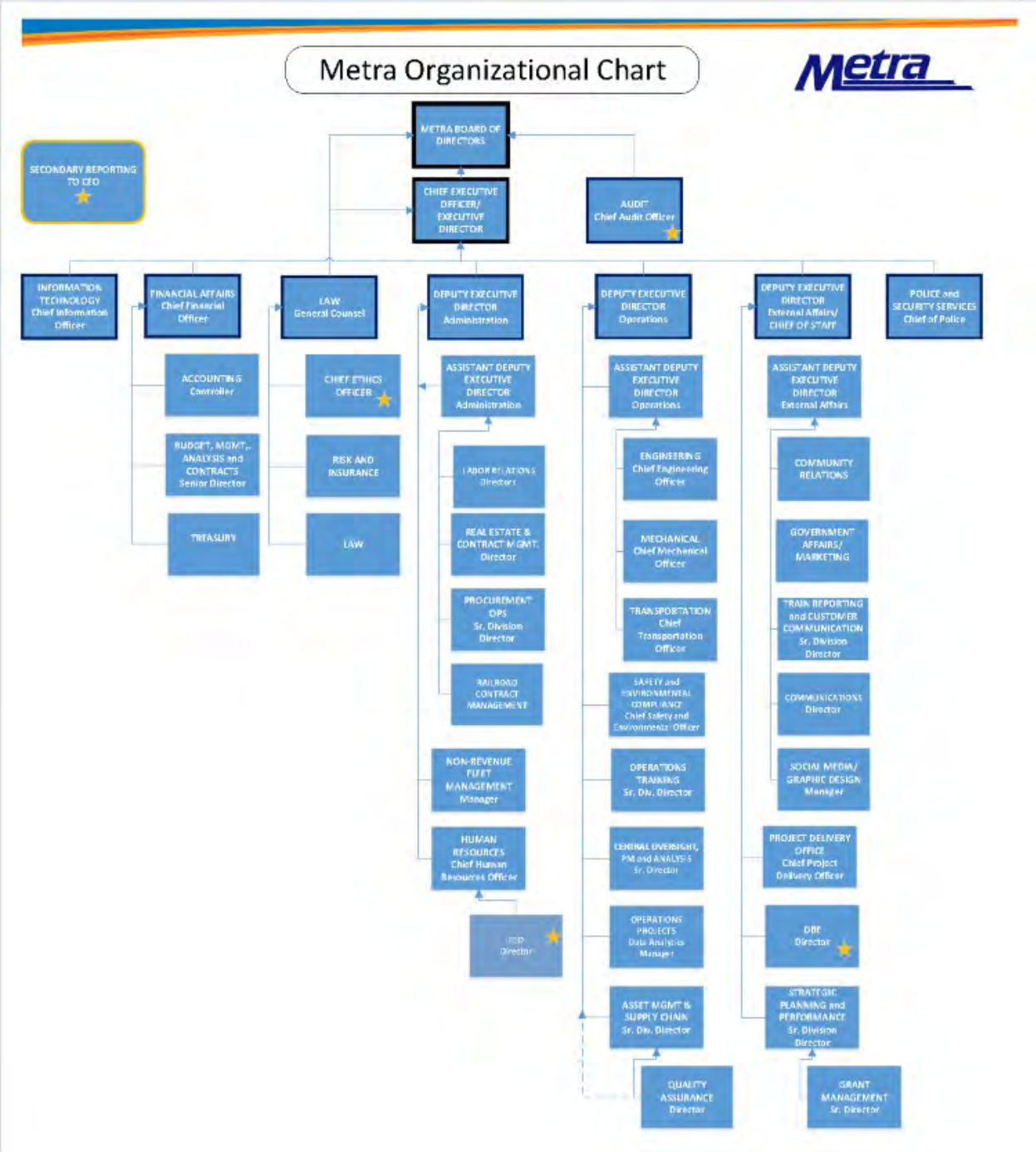
625.25 (b) A TAM Plan must include: (6) A provider's TAM Plan implementation strategy; (8) A summary or list of the resources, including personnel, that a provider needs to develop and carry out the TAM Plan

Metra's Executive Director/Chief Executive Officer is the Accountable Executive for Asset Management and is responsible for ensuring that this TAM Plan is developed and carried out by delegating the appropriate authority and assigning sufficient resources. The development of this TAM Plan was led by Metra's Asset Management Analyst, who sits within the Operations Department, with support from consultants and input from personnel throughout the agency. The Asset Management Analyst also develops performance targets and measures as required and consolidates inventory and condition data for National Transit Database (NTD) reporting, with support from asset owners, They also coordinate with the Grant Management and Accounting and Strategic Planning and Performance divisions to work on the Decision Support Tool and Investment Prioritization. Asset user departments undertake lifecycle management activities.

Development of Metra's Enterprise Asset Management (EAM) system is being led by Metra's Director of Corporate Quality Assurance with support from an internal team and consultants. As Metra focuses on improving its asset data, the Data Governance Committee created in 2019, now called the TAM Working Group, has played a leading role in improving asset management at Metra. This committee includes representatives from Grants, Finance, Procurement, IT, Quality Assurance, Engineering, Mechanical, Capital Delivery, Safety, Planning, and Transportation, and supports the EAM team in carrying out the steps outlined in the Implementation Strategy. This group reports to the Senior Leadership Team which is comprised of management staff from across the organization.

Figure 7 depicts asset management responsibilities at Metra.

Figure 7. Asset Management Organization



SAFETY

The prevention of harm is the primary objective of Metra's Office of Safety & Environmental Compliance, which considers assets primarily from the perspective of how they impact and influence Metra's employees, contractors, and passengers. With implementation of the SSPP, Metra is building on the safety culture that it has fostered since 1983, when its Labor Management Committee (LMC) was first

formed to encourage open communication between labor and management.[2] Since the creation of Metra's first TAM Plan, significant progress has been made to clarify roles and responsibilities across the agency, in relation to safety, risk and performance management. Established procedures and tools, such as the Confidential Close Call Reporting System (C^3RS) "close call" and NAVEX safety reporting systems, enable the timely identification of hazards for proactive resolution. In addition, System Safety Engineers, Environmental Compliance and Industrial Hygiene staff proactively inspect and respond to hazards in the field on a daily basis. Potential hazards are communicated to the appropriate departments for timely resolution in the form of safety alerts, and corrective action plans are shared across the organization, as needed.

Alongside safety-focused activities, the Office of Safety & Environmental Compliance is a major stakeholder in asset management policy, process, and procedure, at each stage of the asset lifecycle. Safety and environmental policies and procedures intersect with asset management in a number of ways, for example:

- Acquisition: the specification and procurement of new assets, equipment and materials necessitates the assessment of safety risks and the development of new safety-specific documentation, as well as new sampling, storing, inspection, and audit requirements.
- Disposal: when asset managers identify the need to dispose of assets, such as batteries, consultation with the safety and environmental group enables planning to ensure compliance.

RISK

Metra's established risk management processes, overseen by its Risk Department, take into account the impact of asset-related risk on the entire Metra system, at both strategic and operational levels. The SGR of Metra's capital assets is factored into annual underwriter risk assessments and impacts the cost of securing insurance for the agency. In this respect, asset-level risk has a direct impact on Metra's business and administrative functions, and the Risk Department is a customer of the data produced through Metra's asset management implementation program. Data sharing takes place between Metra's asset management and risk teams, to facilitate this process.

Risk, safety, and asset management processes further overlap between departments with respect to the management of incidents at Metra. When incidents occur, both Safety and Risk departments are notified; depending on the nature of the incident, varying responses will be made in relation to the asset itself. An incident involving damage to Metra property, for example, will require an understanding of the parties involved, the prior condition of the asset, as well as its value, and the cost to restore service levels (particularly if the incident leads to a claim). From the perspective of resiliency, Metra has emergency response procedures and service disruption processes in place, with the respective departmental roles and responsibilities delegated. These procedures cover natural disasters, severe weather events, and other forms of emergency. Knowledge of Metra's assets and systems, facilitated and supported by the asset management program, helps to mitigate the impact of unplanned events to Metra's ability to operate safely. Metra's police department also plays a role in managing security risks to protect Metra passengers and staff from intentional harm.

CORE ASSET MANAGEMENT SUPPORT SYSTEMS

625.25 (b) A TAM Plan must include: (8) A summary or list of the resources, including personnel, that a provider needs to develop and carry out the TAM Plan

Metra utilizes several support technologies/systems to store information about its assets, which are relied on to make informed decisions. These are important resources for carrying out this TAM plan. A complete inventory of the systems currently utilized and the way they interact was developed as part of Metra's EAM implementation program, and a "To-Be Application Architecture" was also developed. These documents are stored on a Metra Teams site used by Metra's TAM/EAM team. Table 8 summarizes

[2] Metra System Safety Program Plan, July 2021

some of the most important of these support systems, and the primary asset types / departments that use each system.

Table 8: Core Support Systems

SYSTEM	DESCRIPTION / STATUS	ASSET / DEPARTMENT
IssueTrak	IssueTrak is Metra's primary solution for recording, tracking and managing both internal and external trouble tickets and service requests for all asset types, supporting Information Technology (IT) and Transit Operations Customer Service issue reporting.	• IT • Customer Service
Maximo	Maximo is used by Metra's Mechanical and Engineering departments. The Mechanical Department has used Maximo since 2010 as its asset register and inventory and to program preventive maintenance, generate work orders and capture information on the location (by district), status, maintenance history, warranty eligibility, and more for each railcar, locomotive, electric multiple unit (EMU), and rubber tire support vehicles. The Engineering Department uses Maximo to record inspections for electrical maintenance and station/facility equipment and is in the process of further developing functionality while also transitioning additional asset types into the system.	• Rolling Stock • Electrical – Substations • Facilities equipment • Rubber tire equipment
ServiceMax	ServiceMax is being used by Metra to record and manage signal inspections and track PTC-relevant assets, including signals, track, and PTC data radios. ServiceMax stores information on asset ID, asset type, location (milepost), test type required and repair history.	• Signals o Switches o Grade Crossings o Relay House o PTC
Capital Optimization Support Tool (COST)	Created by the RTA, the COST model is used by Metra as its decision support tool to identify asset classes and specific assets that require investment to maintain in a state of good repair.	• All asset departments except IT
Microsoft Access	Several departments use Access to store asset information pertinent to their department, including rail defects and station improvements.	• Track • Station Improvements
InEight	InEight is being implemented as Metra's Document Management System to provide online access to asset documentation. It is also used by the Capital Delivery Department for the Master Program Schedule, and additional functionalities will be rolled out over time.	• Capital Delivery (current) • All (future, document management only)
Microsoft Dynamics 365	Metra's enterprise resource planning (ERP) application used to manage day-to-day business activities for accounting, financial, procurement, inventory/warehouse and supply chain operations.	• All
Work Order System	Work Order System is an electronic timesheet program used by Metra's Engineering departments. It was developed in-house, and captures labor by project code, as well as data on equipment use.	• Engineering
Google Earth	Metra's Track Department uses Google Earth and GIS data to monitor track information and defects.	• Track
CADD (Computer Aided Design and Drafting)	Metra's Track Department uses CADD to create and update track charts that document speed restrictions, signal locations, bridge locations, grade crossing locations, mile posts, platform limits, etc.	• Track
TOPS	Train On-time Performance System (TOPS) provides Metra with coded delay reports that indicate the cause, location, and other characteristics of delays. These reports indicate which department, if any, bears responsibility for the delay, and are used to measure on-time performance.	• All
ArcGIS Online	ArcGIS Online is used to log Americans with Disabilities Act (ADA) exceptions, life safety risks, SGR, code violations, and issues with signs discovered at stations as part of quality control inspections. ArcGIS Online automatically transfers this information to Issuetrak. Infrastructure is also plotted in ArcGIS.	• Stations and Parking • Infrastructure (mapping only)
SGR Database	Metra's SGR database was developed by a consultant in 2010-2015 and contains nearly 40,000 assets. The database contains information on asset classification, year built, condition, replacement cost, useful life, rail line, and more.	• All
Snipe	Snipe supports the asset registry/inventory, issuing, work requests and work order management for IT and telecommunications devices.	• IT • Telecommunications

LIFECYCLE MANAGEMENT STRATEGIES

Lifecycle management strategies have been further developed as part of this TAM Plan to capture the baseline or steady state activities necessary to achieve and maintain a state of good repair, and to ensure Metra's assets are functional, reliable, and are able to continue to support a safe, efficient, and sustainable regional operation.

OVERVIEW

625.25 (b) A TAM Plan must include: (6) A provider's TAM Plan implementation strategy; (7) A description of key TAM activities that a provider intends to engage in over the TAM Plan horizon period;

During the development of this TAM Plan, the current lifecycle strategies for all major assets were reviewed to identify any changes from the first TAM plan. Metra continues to turn its attention to more advanced asset management principles and whole lifecycle thinking, and this TAM Plan aims to develop the long-term maintenance and improvement program necessary to reach a state of good repair with the available funding. Building on the work done by Metra in coordination with the RTA, this represents the continuation of a years-long effort to define the capital investment needed to meet current and future demands.

The lifecycle management strategies laid out in the appendices to this document define Metra's approach to asset management and how it will be implemented. Lifecycle strategies may be similar for asset classes where commonalities exist, such as rolling stock and non-revenue vehicles, however, the lifecycle management strategies for each asset class are unique. The current strategy for each asset class – including information on the specific inspection, maintenance and replacement activities to be undertaken – is presented in the appendices, and a general overview of lifecycle management practices is presented in this section.

CURRENT LIFECYCLE MANAGEMENT STRATEGIES

Metra's core objective is to provide a safe, reliable, efficient commuter rail service. Metra currently employs a variety of lifecycle management strategies to achieve this objective which are detailed in the asset plans in the appendices of this document. Metra's asset lifecycle management strategies fall into the following categories:

- ***Acquisition*** activities to procure, design, build, and transfer assets, taking into account long-term maintenance and operations.
- ***Maintenance*** activities including inspection/monitoring, preventive maintenance, and corrective maintenance.
    - ***Inspection/monitoring*** activities to confirm the asset is able to function in its required state and provide a safe operational environment.
    - ***Preventive maintenance*** activities to achieve a required level of asset performance and maintain a safe operational environment.
    - ***Corrective maintenance*** activities to return the asset to its required function and restore a safe operational environment.
- ***Overhaul/Rehabilitation*** to restore the asset to an operational design standard and maintain performance.
- ***Capital Replacement*** to renew/replace the asset.
- ***Disposal*** to ensure compliant, efficient, cost-effective retirement of assets.

ACQUISITION

For many years, Metra has focused on maintenance and improvement of existing assets, not on expansion or major acquisition. While this remains the focus, and no major service expansions or

extensions have been undertaken for quite some time, Metra is in the process of constructing a few new infill stations. Still, new acquisitions, as opposed to replacements, are relatively rare for Metra. Any consideration of expansion or acquisition of new assets occurs as part of the Metra-wide capital planning process.

MAINTENANCE

Maintenance and inspection regimens follow requirements of the FRA, Environmental Protection Agency (EPA), ADA, and any other government regulations, as well as recommendations from the manufacturer, the American Public Transportation Association (APTA), and the Association of American Railroads (AAR). Where appropriate, manufacturer's technical manuals and Original Equipment Manufacturer (OEM)-based instructions serve as standard operating procedures (SOPs) for many assets. Where comprehensive policies do not exist, such as for facilities, work equipment, and telecommunications, work order documentation often contains guidance on the frequency at which maintenance is to occur for select assets and includes a checklist detailing the specific maintenance activities required.

Prioritizing and scheduling access to track for maintenance takes place during weekly meetings between Metra's Transportation, Engineering, and Mechanical departments.

Inspection/Monitoring

Metra conducts regular inspections of critical assets to prevent unexpected failures, in line with government regulations and industry best practice. Defects are documented to signal a need for repair. More formal condition assessment and rating has been developed for some asset classes and will be developed for others in the coming years.

The frequency and depth of inspections varies by asset class. For example, locomotives and rail cars receive brief inspections twice daily, before morning and evening rush periods, as well as more detailed inspections as part of routine preventive maintenance as outlined in the appendices. Track is inspected twice per week by an inspector riding a hi-rail vehicle, and receives more detailed inspections at monthly, quarterly, semiannual, and annual intervals. Metra conducts routine bridge inspections annually, as well as special inspections in preparation for rehabilitation, and incidental inspections whenever an inspector or supervisor interacts with a bridge as part of their work.

In addition to human-based inspections, assets such as traction power, substations (15), 4,160V systems, and 2,300V systems are monitored constantly through a SCADA (supervisory control and data acquisition) system.

Preventive Maintenance

Preventive maintenance activities may include cleaning (for rolling stock and facilities), changing the oil and other fluids (for all revenue and non-revenue vehicles), testing and calibrating components, repairing or replacing damaged or worn components, etc. Non-revenue vehicle assets receive preventive maintenance at mileage-based intervals, while preventive maintenance schedules for other assets are time-based. Metra has checklists in place that indicate the specific preventive maintenance activities that are to occur at each interval for all applicable assets.

To supplement the planned maintenance activities, the Mechanical Department also engages in reliability-centered maintenance (RCM), conducting analyses of oil and fuel, as well as vibration tests to predict and eliminate engine failures. Similarly, the Electrical Maintenance Department sends transformer oil to an external lab to be monitored for trends and tests protective relays to identify any deviations or trends. Knowledge learned from these RCM practices have been incorporated into standard preventive maintenance procedures.

Corrective Maintenance

Much maintenance at Metra is performed in response to defects identified during the course of routine inspection, preventive maintenance, or reported by field staff. Defects are generally recorded on a paper-based report or Maximo depending on asset group, then programmed for corrective maintenance by the appropriate department. Corrective maintenance on many assets is performed in-house by Metra employees, however, Metra has contracts with third party vendors for corrective maintenance as needed.

OVERHAUL/REHABILITATION

Metra operates many of its assets beyond their FTA-defined useful life (used for FTA grant eligibility) due to funding constraints and value for money assessments. For example, although the FTA-defined useful life for rolling stock is 25-years, Metra has set a goal of replacing its coach cars after 42 years and its locomotives and EMUs after 30 years. In order to meet this schedule, Metra must overhaul coach cars after approximately 14 years, and locomotives and EMUs after approximately 10 years. After another 14 or 10 years, respectively, the rolling stock is intended to be rebuilt again to extend its life. If rolling stock will not be retired after it reaches 42 or 30 years, it may undergo an additional rebuild to further extend its life.

As part of its modernization plan, Metra has expanded its capacity for in-house coach overhauls and accelerated the overhaul process by moving to an assembly-line style system in which each car moves through multiple rehabilitation “stations.” Overhaul/rebuild programs are designed specifically for each type of rolling stock, based on an assessment of the vehicles, and are included in the capital program. On the locomotive side, rebuilds may be contracted out or performed in house. Metra’s 26 oldest EMUs were built in 2005-2006, and so are just now approaching the middle of their expected life. Metra is developing a new, tailored overhaul program to restore these vehicles.

Overhauls of other assets, such as bridges, stations, or other facilities, are based on criticality and need, which is determined by subject-matter experts and included in the Capital Program based on funding availability.

CAPITAL REPLACEMENT

Assets that have reached the end of their useful life and can no longer be rebuilt or maintained safely and cost-effectively are instead replaced. Though asset useful life is taken into account, replacements are typically undertaken based on condition, revealed through routine inspection, rather than on a set replacement schedule. Funding availability also plays a role in determining when an asset is replaced.

For larger scale capital replacement projects managed by the Project Delivery Department, projects are reviewed during monthly meetings led by the PMO, where any issues are identified and escalated for resolution to keep projects on track. Metra’s documented quality management program guides contractor work to ensure successful project delivery.

Handover processes are established prior to procurement for large capital replacement construction contracts. These allow Metra to verify that the project has been completed as expected, and that relevant documents and information are captured.

DISPOSAL

User departments have processes in place to determine which assets should be retired and replaced. These processes vary by department and are detailed in the asset plans in the appendices. User departments work with the Fixed Assets Department to ensure there is no remaining Funding Agency equity left before disposal of an asset. If there is no equity remaining, assets are auctioned off or scrapped in accordance with funding agency guidelines. Metra’s Office of Safety & Environmental Compliance typically plays a role in ensuring that all materials are disposed of in alignment with federal, state, or local environmental regulations.

INVESTMENT PRIORITIZATION

Metra's 2022-2026 Capital Program expects $1.57 billion to be available to invest in projects that will improve Metra's state of good repair. A prioritized list of investments is developed by utilizing analytical review and scoring of proposed projects referred to as the Investment Prioritization.

625.25 (b) A TAM Plan must include: (3) A description of analytical processes or decision-support tools that a provider uses to estimate capital investment needs over time and develop its investment prioritization; (4) A provider's project-based prioritization of investments;
625.33 Investment prioritization. (a) A TAM Plan must include an investment prioritization that identifies a provider's programs and projects to improve or manage over the TAM Plan horizon period the state of good repair of capital assets for which the provider has direct capital responsibility. (b) A provider must rank projects to improve or manage the state of good repair of capital assets in order of priority and anticipated project year. (c) A provider's project rankings must be consistent with its TAM policy and strategies. (d) When developing an investment prioritization, a provider must give due consideration to those state of good repair projects to improve that pose an identified unacceptable safety risk when developing its investment prioritization. (e) When developing an investment prioritization, a provider must take into consideration its estimation of funding levels from all available sources that it reasonably expects will be available in each fiscal year during the TAM Plan horizon period. (f) When developing its investment prioritization, a provider must take into consideration requirements under 49 CFR 37.161 and 37.163 concerning maintenance of accessible features and the requirements under 49 CFR 37.43 concerning alteration of transportation facilities.

ANALYTICAL PROCESSES FOR INVESTMENT PRIORITIZATION

Each year, Metra's Program Development Department issues a "Call for Capital Projects," inviting user departments to request funds for projects requiring investment over the next five years. The Call for Capital Projects utilizes a standardized spreadsheet-based form that requests information on all projects seeking funding, organized around key investment prioritization criteria.

The Capital Project Request Form (CPRF), included as Appendix L, requires a capital project sponsor to provide scope, schedule, and budget information. Project sponsors are also tasked with providing qualitative information via checkboxes and open dialogue boxes that are organized around Metra's Strategic Plan and the Investment Prioritization criteria to assess the merits and readiness of the project.

The total costs of projects that user departments would like to undertake typically exceeds the available funding, requiring the Program Development Department, in coordination with the user departments and senior leadership, to prioritize the projects that will receive funding, and how much funding each project will receive.

Metra's formal Investment Prioritization criteria were established when the agency's first TAM Plan was adopted in 2018. Three criteria were utilized for the first three years following the adoption of the TAM Plan. Staff added two additional criteria to evaluate projects that received funds in the 2021-2025 and the 2022-2026 Capital Programs. These criteria are shown in Table 9 alongside the points available for each, and the primary considerations for scoring. A sixth criteria—emissions reduction—has been added for the 2023-2027 program prioritization but is not reflected here.

Metra's Program Development team rates projects on a 1 (lowest) to 5 (highest) scale with respect to how well they meet each criterion. The five Investment Prioritization criteria are weighted differently to provide higher scores for projects that improve the asset condition, projects that have demonstrable project readiness, and projects that provide customer-facing benefits. A maximum of 100 points are available and project scores are indexed to make the maximum project priority score to be 5.0. Projects with the highest scores are considered higher priority for inclusion in the capital program. Metra re-evaluates these investment prioritization criteria and their relevant weights at the beginning of the year's Capital Programming Process.

Since the adoption of Metra's first TAM Plan, the criteria, metrics, and measures used in the annual Investment Prioritization process have become more sophisticated. As asset data is assembled and business processes are improved there is a greater level of analysis that can be conducted to determine the impacts of capital funding strategies. Metra will continue to reevaluate the Investment Prioritization criteria as the TAM Plan is implemented, the EAM system is developed, and when additional data sources become available. Further, the Investment Prioritization criteria and criterion score weighting may be adjusted as policies are updated or established by the Metra Board of Directors, RTA, Illinois General Assembly, FRA, and FTA.

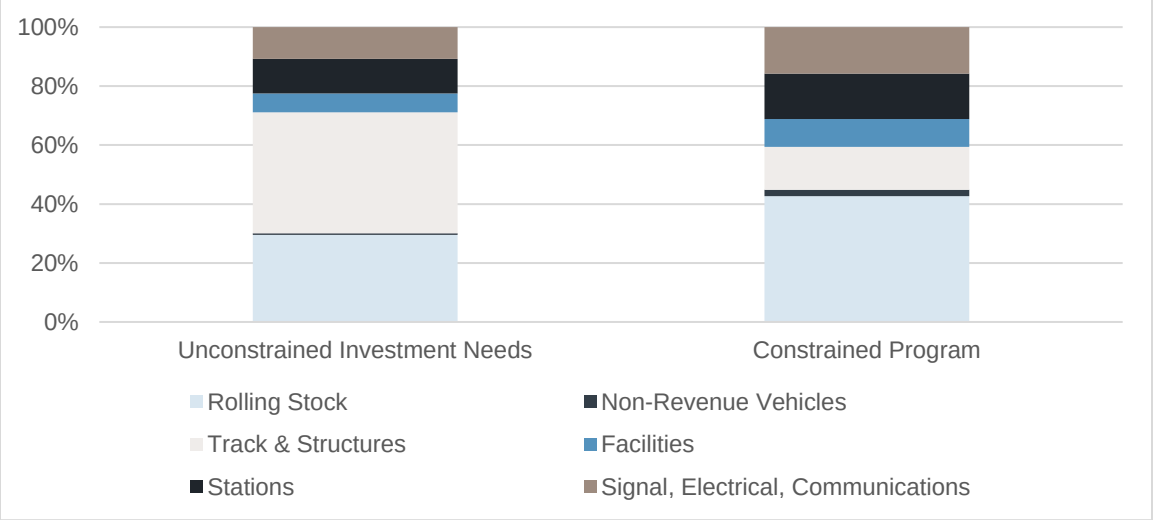
Table 9: Investment Prioritization Criteria used in the 2022-2026 Capital Program

CRITERIA	INDICATOR(S)	POINTS AVAILABLE	SCORING CONSIDERATIONS
Strategic Alignment	A. Safety and Security	10	Project contributes to the safety and security of the system
	B. Customer Service	20	Project improves the customer experience and attracts commuters
	C. Cost Effectiveness	10	Project maximizes the return on the public's investment
Project Readiness	Project Status	10	Considers status of pre-construction and/or pre-procurement activities, current schedule, and prior funding.
Condition	Improves the SGR	20	Project optimizes capital assets and improves the state of good repair of the transit system
Mandate	Meets a mandate	20	Project brings assets into compliance of a local, state, and/or federal mandate
Accessibility	A. Access to Jobs	2	Project increases access to jobs and/or increases travel options
	B. Improves ADA Compliance	5	Project brings asset into ADA compliance
	C. Equity Areas	3	Project is within designated equity areas
Total		100	Weighted average

In addition to relying on user departments' on-the-ground knowledge of capital needs, Metra uses outputs from the RTA's Capital Optimization Support Tool (COST) to identify asset classes and specific assets that require investment to maintain in a state of good repair. SP&P compares the capital needs backlog generated for each asset class by the COST tool with the proposed capital program allocations to check that the program is appropriately weighted to address Metra's state of good repair needs.

Figure 8 shows the share of unconstrained capital needs estimated via the COST tool for each asset class, alongside the total 2022-2026 Capital Program allocation.

Figure 8: Constrained Program Compared to Unconstrained Investment Need, by Asset Class



PROJECT-BASED PRIORITIZATION OF CAPITAL INVESTMENTS

- The purchase new rail cars that will allow Metra to retire cars that were originally built in the 1950s and 1960s,
- Midlife rehabilitation of railcars and locomotive engines,
- Replacement and capital maintenance of ties, ballasts, rail, and crossings;
- Upgrades to the signal system, interlockings, and electrical system;
- Improvements to rail yards and non-revenue vehicles and equipment; and
- The full rehabilitation of more than a dozen stations and make several stations fully accessible.

Table 10 summarizes Metra's 2022-2026 five-year capital program priorities by asset class. This program was approved by Metra's Board of Directors in November 2021 and amended in June 2022. The 2022-2026 program does not include funds that will be spent in 2022-2026 but were previously programmed, including via the Rebuild Illinois bond program. Capital funding levels for asset categories and individual projects in the years 2023-2026 of the Capital Program are subject to significant revision during the annual budgeting process.

Appendix A contains a ranked list of capital projects, based on the prioritization methodology described in the previous section.

Metra's capital program balances the needs of many different user groups and asset classes. Major projects funded over the coming five years include:

- The purchase new rail cars that will allow Metra to retire cars that were originally built in the 1950s and 1960s,
- Midlife rehabilitation of railcars and locomotive engines,
- Replacement and capital maintenance of ties, ballasts, rail, and crossings;
- Upgrades to the signal system, interlockings, and electrical system;
- Improvements to rail yards and non-revenue vehicles and equipment; and
- The full rehabilitation of more than a dozen stations and make several stations fully accessible.

Table 10: 2022-2026 Capital Program ($000s)

ASSET CLASS	PROJECT	2022	2023	2024	2025	2026	TOTAL
Rolling Stock	Locomotive Improvements	$5,050	$28,800	$0	$0	$0	**$33,850**
	Car Rehabilitation	$28,000	$29,000	$37,511	$32,511	$32,511	**$159,533**
	New Locomotives	$15,750	$7,850	$22,950	$29,024	$0	**$75,574**
	New Rolling Stock	$0	$130,000	$0	$95,000	$81,500	**$306,500**
	Fleet Component Overhaul	$10,600	$9,800	$16,650	$8,500	$8,500	**$54,050**
	Subtotal	**$59,400**	**$205,450**	**$77,111**	**$165,035**	**$122,511**	**$629,507**
Bridges, Track & Structure	Ties and Ballast	$22,025	$14,825	$17,550	$10,700	$12,575	**$77,675**
	Rail	$5,830	$5,500	$4,918	$4,918	$4,418	**$25,584**
	Crossings (Road and Track)	$5,000	$4,750	$4,500	$5,000	$5,000	**$24,250**
	Bridges & Retaining Walls	$20,245	$4,600	$13,750	$11,100	$31,100	**$80,795**
	Structural Upgrades	$1,100	$1,100	$1,100	$1,100	$1,100	**$5,500**
	Subtotal	**$54,200**	**$30,775**	**$41,818**	**$32,818**	**$54,193**	**$213,804**
Signal, Electrical & Communications	Signal System Upgrades	$18,018	$13,190	$11,082	$4,482	$4,682	**$51,454**
	Interlockings	$24,000	$41,000	$15,500	$13,000	$13,000	**$106,500**
	Electrical System Improvements	$8,605	$19,140	$35,090	$2,840	$9,240	**$74,915**
	Subtotal	**$50,623**	**$73,330**	**$61,672**	**$20,322**	**$26,922**	**$232,869**
Facilities & Equipment	Yard Improvements	$29,257	$7,760	$7,090	$7,490	$9,380	**$60,977**
	Building Improvements	$11,410	$825	$1,000	$5,500	$5,500	**$24,235**
	Equipment and Vehicles	$25,672	$18,750	$16,250	$11,775	$11,275	**$83,722**
	Financial Systems Replacement	$0	$0	$0	$1,000	$1,000	**$2,000**
	Subtotal	**$66,339**	**$27,335**	**$24,340**	**$25,765**	**$27,155**	**$170,934**
	Stations & Parking	$71,041	$55,420	$29,650	$25,015	$21,600	**$202,726**

ASSET CLASS	PROJECT	2022	2023	2024	2025	2026	TOTAL
Stations & Parking	ADA Improvements	$4,750	$4,400	$11,830	$1,900	$2,000	**$24,880**
	Subtotal	**$75,791**	**$59,820**	**$41,480**	**$26,915**	**$23,600**	**$227,606**
Support Activities	Technical Studies	$3,000	$3,000	$3,250	$3,500	$3,500	**$16,250**
	Project Administration	$26,325	$21,575	$16,400	$11,500	$1,500	**$77,300**
	Contingencies	$1,180	$1,330	$673	$868	$1,067	**$5,118**
	Subtotal	**$30,505**	**$25,905**	**$20,323**	**$15,868**	**$6,067**	**$98,668**
Total	**Grand Total**	**$336,858**	**$422,615**	**$266,744**	**$286,723**	**$260,448**	**$1,573,388**

ESTIMATE OF AVAILABLE CAPITAL FUNDING

In order to pay for its capital investments over the next five years, Metra will rely on funding from the sources described in Table 11.This table does not include Rebuild Illinois bond funds or other funding sources programmed in past cycles that will be spent in 2022-2026.

Table 11: Capital Improvement Program Expected Funds ($000s), 2022-2026

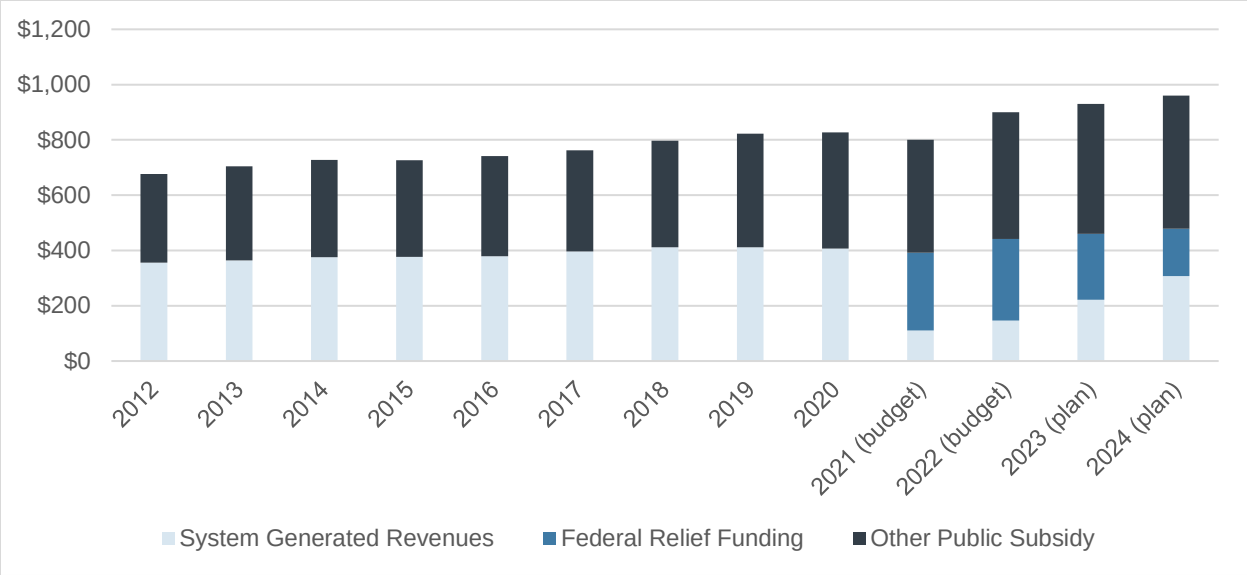
CAPITAL FUNDING SOURCES	2022	2023	2024	2025	2026	TOTAL
FTA 5307 Urbanized Area Formula	$105,422	$87,299	$88,608	$83,233	$84,482	**$429,630**
FTA 5337 State of Good Repair Formula	$147,382	$97,076	$98,532	$100,010	$101,510	**$492,770**
CMAQ	$0	$28,800	$0	$29,024	$0	**$57,824**
State PAYGO Funds	$73,775	$73,775	$73,775	$74,456	$74,456	**$370,237**
IDOT – Multi-Modal Transportation Bond	$3,000	$0	$0	$0	$0	**$3,000**
Metra Capital	$76.5	$0	$0	$0	$0	**$76.5**
RTA Bonds	$0	$130,000	$0	$0	$0	**$130,000**
RTA ICE	$7,202	$5,665	$5,829	$0	$0	**$17,024**
TOTAL	**$336,781**	**$422,615**	**$266,744**	**$286,723**	**$260,448**	**$1,500,562**

OPERATING AND MAINTENANCE COSTS

Capital investments have an impact on operating and maintenance costs, which are typically higher for older, less fuel-efficient vehicles that are more prone to breakdowns, and for older infrastructure for which there is no longer adequate supplier support.

Metra's mandate, under the RTA Act, requires that fares cover at least half of its operating costs. However, this mandate has been temporarily suspended due to the ridership and revenue shortfalls associated with the COVID-19 pandemic. The revenue shortfall has been largely replaced with Federal COVID relief funds. The remaining half of operating costs depends primarily on a sales tax levied in the six-county region. Figure 9 shows the actual/expected total operating expenses from 2014 through 2024, broken down by primary funding source.

Figure 9: Operating and Maintenance Costs (Millions of USD), 2014-2024



Of Metra's total operating expenses, approximately 43 percent are for maintenance. Table 12 shows actual and expected operating expenses by type from 2014 to 2024.

Table 12. Operating Expenses (Millions of USD), 2014-2024

OPERATING EXPENSES	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Transportation	232.9	235.2	245.2	249.5	265.7	283.8	544.6[3]	273.8	299.3	309.3	319.3
Fuel and Motive Power	85.5	77.8	54.9	49.5	54.7	68.0	63,1	57.1	53.8	55.7	57.5
Maintenance of Way	134.6	129.8	135.2	149.8	154.2	157.3	N/A	159.0	180.4	186.4	192.4
Maintenance of Equipment	160.3	158.5	174.6	174.3	185.0	190.4	N/A	181.0	210.6	217.5	224.5
Administration	82.6	94.4	100.8	98.8	108.3	107.1	104.4	107.6	123.9	128.0	132.1
Claims, Insurance, and Risk Management	17.4	15.0	16.8	25.4	14.0	15.6	16.2	21.3	32.0	33.1	34.2
Downtown stations	14.6	15.3	14.3	14.3	15.3	N/A	N/A	N/A	N/A	N/A	N/A
Total expenses before depreciation	**727.9**	**726.0**	**741.8**	**761.6**	**797.2**	**822.2**	**827.4**	**800.0**	**900.0**	**930.0**	**960.0**

ASSET MANAGEMENT IMPLEMENTATION

Metra has enacted the implementation program laid out in its initial TAM Plan and commits to continuous enhancement of its asset management practices.

TAM PLAN UPDATE AND EVALUATION

625.25 (b) A TAM Plan must include (9) An outline of how a provider will monitor, update, and evaluate, as needed, its TAM Plan and related business practices, to ensure the continuous improvement of its TAM practices

[3] In 2021 reporting on 2020's budget, Metra reported the "Cost of Operations – Full Service" and the Targeted Cost Savings – For Operations" rather than the typical categories of "Transportation," "Maintenance of Way" and "Maintenance of Equipment.". These are combined in this chart under "Transportation" for comparison to other years.

This plan is a living document which is relevant and integral to daily activity, and Metra commits to carrying out the activities within this plan.

To ensure the plan remains useful and relevant, the following ongoing monitoring and review activities have been or will be undertaken:

- The Asset Management Policy contained within this plan has been formally adopted by Metra's top management and accountable executive, and will direct the development of future asset management initiatives – including future versions of this asset management plan.
- This TAM Plan has been formally adopted by Metra and has been and will continue to be used to guide the delivery of maintenance and capital programs.
- Portions of the asset portfolio and condition information have been and will continue to be updated annually as part of NTD reporting.
- Metra's Fleet Management Plan, Bridge Management Program, and other guiding maintenance and management documents will be monitored and updated as needed, to ensure that the lifecycle management strategies contained therein continue to adequately address asset maintenance needs.
- Metra's five-year capital program shall be updated annually, in line with the investment prioritization procedures summarized in this document.

The original plan has been updated at the end of its four-year horizon period. At a minimum, this Plan will undergo another comprehensive update and review in 2026 and every four years thereafter. The plan may also be updated when major changes in Metra's assets occur, such as a new fleet, facility, or infrastructure acquisition worth more than $100 million. Certain aspects of the Plan will be reviewed more frequently, on an annual cycle (though not necessarily updated within the Plan). This includes a review of asset condition, performance targets (as part of annual submissions to the NTD), and progress against asset management objectives.

IMPLEMENTATION STRATEGY

625.25 (b) A TAM Plan must include: (6) A provider's TAM Plan implementation strategy; (7) A description of key TAM activities that a provider intends to engage in over the TAM Plan horizon period

As part of the development of Metra's first TAM Plan, completed in 2018, Metra underwent a gap analysis that identified recommended improvement actions to comply with 49 CFR 625 and asset management best practices. Table 13 shows the primary recommended implementation actions that came out of that initial assessment, as well as the progress Metra had made as of the completion of the 2018 TAM Plan. It also contains a new column that documents the further progress Metra has made since 2018, and any additional steps needed to complete the implementation action.

Table 13. Asset Management Implementation Actions 2018-2023

IMPLEMENTATION ACTION	2018 STATUS AND NEXT STEPS	2022 STATUS AND NEXT STEPS
Develop an Asset Management Policy, Objectives, and Strategy that are aligned with overall strategic objectives, communicated widely and approved by the relevant agency stakeholders, and subject to regular revision.	Metra's first TAM Policy, which is aligned to overall strategic objectives, was signed on August 8, 2018. The policy must still be communicated throughout the agency, which will occur as part of a broader communication campaign (including as part of new-hire onboarding) that will last for the duration of the TAM horizon period, contributing to culture change around implementing asset management.	COMPLETE. Communication of Metra's TAM Plan has been integrated into the onboarding of new employees, during which Metra's TAM Analyst presents to new hires, sharing Metra's TAM policy and providing other high-level information on asset management, Metra's strategic plan, and other contextual information about Metra.

IMPLEMENTATION ACTION	2018 STATUS AND NEXT STEPS	2022 STATUS AND NEXT STEPS
Complete development of the Asset Management System (AMS) as a comprehensive repository of all asset management-related policies, plans, and procedures; available online internally to all staff.	Metra's TAM Policy and Plan form the initial documents that will compose an AMS. More work is required to further build out the AMS, make it accessible, and promote awareness.	COMPLETE. Metra's TAM Plan, TAM Policy, and State of Good Repair (SGR) database are available on an internal and external website. In addition, an Asset Information Management (AIM) Standard outline has been developed and will be continually updated as a living document. Procedures for storing, collecting and maintaining data are being initiated in 2022 and will become part of Metra's AMS.
Develop an overarching TAM Plan, compliant with the FTA final ruling, and update the TAM Plan through the horizon period when a significant change occurs.	This document represents the first version of Metra's TAM Plan, and was developed with input and buy-in from departments across the agency. It is expected to undergo substantial revision during the current horizon period as Metra continues to improve its asset management processes.	COMPLETE. This document represents the second iteration of Metra's TAM plan and captures all significant changes since the first plan developed in 2018.
Develop a formal capital project prioritization methodology, defining the criteria for deciding which projects better justify funding than others, including alignment with Metra's strategic goals.	Metra has developed a capital project prioritization methodology for the FY2019-FY2023 capital program. Additional work is required to communicate the new methodology internally and to improve the data that informs the prioritization.	COMPLETE. Metra's capital project prioritization methodology has continued to evolve since its development in 2018, with modifications to criteria implemented to better align with Metra and the RTA's strategic goals. Metra has instituted annual trainings as part of its Call for Projects to educate user departments on the criteria and have improved the forms used for data collection. As a result, user departments provided significantly more information, enabling a more successful prioritization process. Metra will continue to refine the process in future years.
Define an asset condition assessment approach that describes how, when, and what is measured for facilities, rated using a 1 to 5 scale.	Metra is developing a condition assessment methodology for facilities to evaluate one-quarter of Metra's facilities this year. As the process is tested, it is expected to undergo revision.	COMPLETE. In 2020, Metra hired WSP to assess nearly all of its administration and maintenance facilities, its downtown terminal stations, and all Union Pacific-owned passenger stations. WSP developed a methodology based on the FTA Facility Condition Assessment guidance (described in more detail in Appendices D and E). During the assessments, WSP also trained Metra staff to be able to follow a similar process in subsequent years for facilities requiring re-assessment. Going forward, Metra's Engineering Maintenance division will be responsible for performing facility condition assessments.
Define an asset condition assessment approach that describes how, when, and what is measured across all asset classes. Condition rating parameters may differ across asset classes but the scoring scale, e.g., 1 to 5, should remain consistent to enable comparison.	In addition to the condition assessment methodology for facilities, an approach to assigning a reliable condition rating has also been developed for rolling stock assets. Development of assessment methodologies for other asset classes have not yet begun.	UNDERWAY. Metra also hired WSP to support TAM implementation; the final task in the contract includes developing Asset Class Condition Assessment Guidelines which will define the condition indicators, scoring and the framework for assessing condition and provide Metra with a consistent measure of condition to inform capital prioritization. These guidelines carryover into the next TAM Plan horizon period and will be complete by the end of Q22023.

IMPLEMENTATION ACTION	2018 STATUS AND NEXT STEPS	2022 STATUS AND NEXT STEPS
Craft and carry out a plan for improving inventory collection, storage, and update methods to support TAM.	Metra has created a plan for increasing the use of Maximo to store asset information in order to inform decision-making.	UNDERWAY. As described above, Metra hired WSP to support TAM implementation. This includes development of detailed asset hierarchies and data standards, documentation of current and to-be EAM software application architecture, a plan to collect missing and outdated asset data, and an EAM Implementation Plan aligned to the “to-be” state. More detail on the next steps over the 2022-2026 horizon period are found below.

Metra has achieved much of what it set out to implement in the first TAM plan. Over the coming four years, Metra will continue to improve its asset management capabilities by focusing on developing its EAM system. This will provide Metra with improved and up-to-date asset data from which to make informed decisions. Key elements of Metra’s EAM development strategy are contained in Table 14.

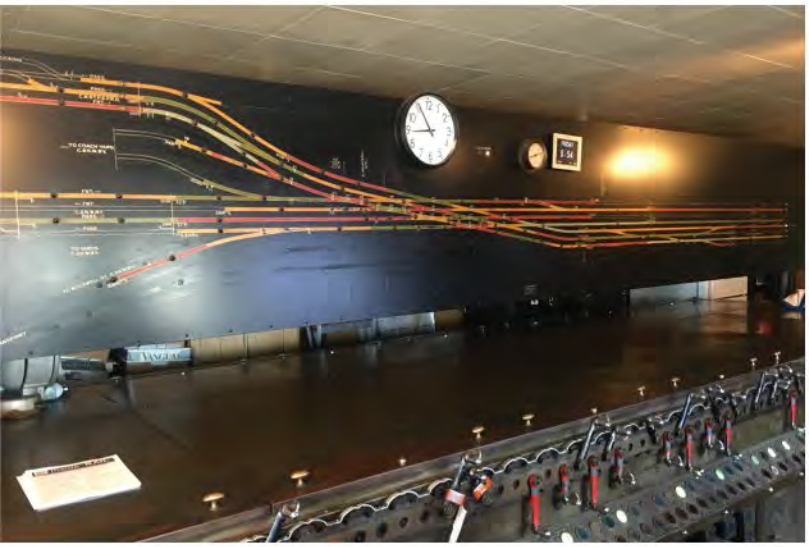
Table 14. 2022-2026 Asset Management Implementation Actions

IMPLEMENTATION ACTION	DESCRIPTION
Prepare for EAM Implementation	The EAM implementation will require creation of business requirements, against which functional requirements of new software can be created and vetted. Business requirements will be based on business processes, which will need to be in place to enable Metra departments to articulate how activities are carried out within and across teams and business functions within the EAM system. To prepare for EAM implementation, Metra will identify and set up required contracts and prepare foundational data elements and processes for all asset classes. As referenced in Table 13, Metra has initiated preparation for the EAM implementation by carrying out a detailed review of asset hierarchies and asset-related data sets, as well as related databases across the agency. Linked to this, asset condition assessment approaches, also referenced in Table 13, are examples of a business process that will be necessary to define prior to EAM software implementation. Metra is working towards completion of Asset Class Condition Assessment Guidelines, which will ultimately inform functional requirements of the EAM implementation. Alongside technical process and data preparation, Metra will work toward preparing its people to actively participate in the documentation of business requirements, and ultimately to adopt the new EAM toolsets. Change management activities will therefore be a core component of EAM implementation preparation.
Implement core asset management functionality for all asset classes	Having prepared for EAM implementation, Metra will proceed to implement new EAM functionality which will support core business processes related to asset management, maintenance and operations. Components of this functionality may include: • Asset Registry: the ability to identify the systems, assets and components which Metra owns and their current status, as well as essential identifying data such as year of installation, make, model and serial number. • Asset Condition Assessments and Inspections: the ability to make field-based observations of asset condition within a handheld device, where appropriate, and submit data electronically, perhaps incorporating asset tagging and geospatial referencing. • Work Requests or Corrective Actions (also known as Trouble Tickets): the ability to receive, log and route unplanned requests to the appropriate resource(s) for resolution and close. Requests could be categorized by urgency and importance, based on criteria which would be defined as part of “preparation for EAM implementation”. • Work Planning and Management: the ability to proactively schedule routine and cyclical work activities, as well as work arising from initial responses to work requests. • Warranty Management: the ability for users at all levels to identify assets, materials, parts and components that have a warranty, so that the most cost-effective decisions can be made when determining interventions. • Cost Capture: the ability to associate labor, equipment and materials costs to work orders, as well as the ability to assign values to assets as an enabler of lifecycle cost analysis (LCA). • Reporting: the aggregation of large data sets into easy-to-understand, visual reports, which enable stakeholders at all levels of the agency, as well as external parties, to understand real-time status of critical processes. Given the magnitude of this undertaking, which will entail decommissioning of existing systems as well as transfer of data sets and wide-scale training. Metra will require support of subject matter experts. Prioritization will be needed to define realistic phases over which new functionality can be developed and deployed over time, without disrupting day-to-day operations or increasing risk.

IMPLEMENTATION ACTION	DESCRIPTION
Foster inter-departmental collaboration	Through the stakeholder interview process that Metra undertook to gather the information required to develop this TAM Plan, a series of opportunities for interdepartmental collaboration were identified. The Risk, Claims & Insurance group, for example, routinely relies on asset registry data to receive quotes from insurance companies; the Asset Management and Supply Chain department will hold the "source of truth" for inventory data, and can start providing that in spreadsheet format until it is available more readily on a "self-service" basis through the EAM system. The PTC program, which has been largely implemented across Metra, further drives the need to collaborate; there is a federal mandate to improve safety through PTC assets, which makes their proactive lifecycle management an imperative. Information-sharing across departments in relation to each other's ways of working, as well as routinely sharing opportunities for inter-departmental collaboration, will assist Metra to drive the cultural change needed to succeed in the next phase of its asset management journey.

The implementation actions described above will require the full horizon period of this TAM Plan to achieve and to embed throughout Metra. Carrying out these activities will affect a range of business processes and may require cultural change. Metra looks forward to continuing to build on the progress made under the first TAM Plan, in order to grow a mature asset management system that will enable improvement of Metra's state of good repair and ensure the safe and successful operations of its passenger rail network for many years to come.




Transit Asset Management Plan

Appendices

Metra

2022-2026 HORIZON

TRANSIT ASSET MANAGEMENT PLAN

APPENDICES

SEPTEMBER 2022

Prepared with support from:

APPROVAL

ACCOUNTABLE EXECUTIVE	SIGNATURE
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REVISION HISTORY

VERSION NO.	DATE	COMMENTS
1	October 1, 2018	Issued in compliance with FTA TAM Final Rule, 49 CFR 625
2	October 1, 2022	Quadrennial update in compliance with FTA TAM Final Rule, 49 CFR 625

APPENDICES CONTENTS

TABLES

INTRODUCTION

Appendix A of this document provides a ranked list of Metra's capital investment priorities, in accordance with 49 CFR 625.

A. CAPITAL INVESTMENT PRIORITIES

A.1 2025 INVESTMENT PRIORITIZATION SCORES

2025 Investment Prioritization Scores for projects reviewing during the development of the 2025-2029 Capital Program.

Table A-1: 2025 Prioritized List of Investments

SCORE RANK	PROJECT ASSET CATEGORY	PROJECT NUMBER (PE#)	PROJECT NAME	INVESTMENT PRIORITIZATION CRITERIA AND SUB-CRITERIA										2023 PRIORITY SCORE
				1.A. SAFETY AND SECURITY	1.B. CUSTOMER SERVICE	1.C. COST	2. PROJECT READINESS	3. IMPROVES THE SOGR	4. MEETS A MANDATE	5.A. IMPROVES EQUITY	5.B. ACHIEVES ACCESSIBILITY	5.C. ACCESS TO JOBS	6. EMISSIONS	
1	Rolling Stock	5006	New Railcars	7.7	5.2	7.5	9.1	35.0	10.0	0.0	0.9	3.0	2.3	**80.7**
2	Signals, Electrical & Comms	5251	ME & NICTD Bi-Directional Signals	8.0	1.1	8.8	4.1	35.0	10.0	5.0	0.0	4.6	3.5	**80.1**
3	Rolling Stock	5006	New Railcars [Option 1]	7.7	6.2	7.5	7.1	35.0	10.0	0.0	0.9	3.0	2.3	**79.7**
4	Stations & Parking	4784	Van Buren Street Station	5.1	10.0	5.0	6.8	32.0	10.0	0.0	1.0	5.8	3.5	**79.1**
5	Stations & Parking	5685	LaGrange Road Station	3.3	7.8	3.8	9.5	35.0	10.0	0.0	1.0	5.0	3.3	**78.5**
6	Rolling Stock	5006	New Railcars [Option 2]	7.7	6.2	7.5	5.0	35.0	10.0	0.0	0.9	3.0	2.3	**77.5**
7	Signals, Electrical & Comms	4842	16th Street Interlocking	7.0	1.1	8.8	9.1	35.0	10.0	0.0	0.0	4.6	1.5	**77.1**
8	Signals, Electrical & Comms	5361	Morgan Interlocking	7.0	1.1	8.8	7.1	35.0	10.0	0.0	0.0	2.3	1.5	**72.8**
9	Stations & Parking	5688	Rogers Park Station	4.5	9.3	6.3	5.6	22.0	10.0	1.9	3.0	4.6	4.5	**71.8**
10	Stations & Parking	5187	Harvey Intermodal Transportation Center	4.5	8.7	5.0	6.8	22.0	10.0	2.3	3.0	4.1	4.5	**70.8**
11	Signals, Electrical & Comms	5362	Western Interlocking	7.0	1.1	7.5	8.1	32.0	10.0	1.9	0.0	1.5	1.5	**70.6**
12	Signals, Electrical & Comms	4947	A-20 Interlocking	7.0	1.1	8.8	8.6	32.0	10.0	0.0	0.0	0.0	1.5	**69.0**
13	Stations & Parking	5980	Platform Improvements	3.9	3.2	7.5	7.5	32.0	10.0	0.0	0.3	0.6	3.0	**67.9**
14	Bridges, Track & Structure	5442	Bridge A318	2.7	3.3	5.0	7.8	35.0	10.0	0.0	0.0	3.1	0.8	**67.6**
15	Stations & Parking	5174	Olympia Fields Station & Parking	4.5	8.7	3.8	7.5	22.0	10.0	1.5	3.0	2.1	4.0	**67.0**
16	Stations & Parking	5975	Cicero Avenue Station	4.5	6.6	2.5	5.6	28.0	10.0	2.6	0.3	2.9	3.8	**66.8**
17	Rolling Stock	5109	Locomotive Purchase [SD70MACH Option 2]	2.0	3.0	6.3	7.8	32.0	10.0	0.0	0.0	2.8	2.8	**66.6**
18	Bridges, Track & Structure	4840	UP North Rebuild	3.3	1.1	5.0	9.3	35.0	10.0	0.0	0.0	1.9	0.8	**66.3**
19	Stations & Parking	5986	West Pullman Station	5.1	2.2	3.8	2.5	28.0	10.0	0.4	3.0	5.3	5.0	**65.3**
20	Signals, Electrical & Comms	5557	MED Improvements	5.5	1.6	3.8	6.5	35.0	10.0	0.0	0.1	0.6	1.5	**64.6**
21	Signals, Electrical & Comms	ES-1	AC Electrical Power Distribution	4.7	0.0	6.3	8.6	35.0	10.0	0.0	0.0	0.0	0.0	**64.5**
22	Signals, Electrical & Comms	ES-2	Substation Transformer Upgrades	4.7	0.0	6.3	8.6	35.0	10.0	0.0	0.0	0.0	0.0	**64.5**
23	Rolling Stock	5109	Locomotive Purchase [SD70MACH Option 3]	2.0	3.0	6.3	5.5	32.0	10.0	0.0	0.0	2.8	2.8	**64.3**
24	Bridges, Track & Structure	4739	96th Ave Bridge #275	2.7	1.1	5.0	7.8	29.0	10.0	3.0	0.0	2.7	3.0	**64.2**
25	Stations & Parking	5689	Kenilworth Station	3.9	3.2	7.5	3.5	32.0	10.0	0.0	0.3	0.6	3.0	**63.9**
26	Signals, Electrical & Comms	4746	Impedance Bonds	4.0	1.1	7.5	5.5	35.0	10.0	0.0	0.0	0.0	0.8	**63.9**
27	Stations & Parking	5990	Kedzie Station	3.9	6.7	2.5	4.3	22.0	10.0	2.6	3.0	3.7	4.5	**63.1**
28	Stations & Parking	5987	LaSalle St Station	3.0	5.6	6.3	2.5	28.0	10.0	0.0	0.3	3.5	3.5	**62.6**
29	Rolling Stock	5505	PTC Renewal (Mechanical)	7.0	0.0	7.5	5.0	32.0	10.0	0.0	0.0	0.6	0.0	**62.1**
30	Signals, Electrical & Comms	5651	PTC Renewal (Engineering)	7.0	0.0	7.5	5.0	32.0	10.0	0.0	0.0	0.6	0.0	**62.1**
31	Stations & Parking	4878	West Chicago Station	4.5	8.2	5.0	7.0	27.0	0.0	0.8	0.9	4.4	4.0	**61.7**
32	Stations & Parking	5984	Ivanhoe Station	3.9	6.8	5.0	2.5	22.0	10.0	2.6	0.4	3.9	4.5	**61.6**
33	Signals, Electrical & Comms	5854	Randolph St Interlocking	7.0	0.0	2.5	4.3	35.0	10.0	0.0	0.0	1.2	1.5	**61.5**

SCORE RANK	PROJECT ASSET CATEGORY	PROJECT NUMBER (PE#)	PROJECT NAME	INVESTMENT PRIORITIZATION CRITERIA AND SUB-CRITERIA										2023 PRIORITY SCORE
				1.A. SAFETY AND SECURITY	1.B. CUSTOMER SERVICE	1.C. COST	2. PROJECT READINESS	3. IMPROVES THE SOGR	4. MEETS A MANDATE	5.A. IMPROVES EQUITY	5.B. ACHIEVES ACCESSIBILITY	5.C. ACCESS TO JOBS	6. EMISSIONS	
34	Bridges, Track & Structure	5541	Stoney Creek Bridge	2.7	1.1	5.0	7.8	29.0	10.0	1.1	0.0	2.2	2.0	**60.9**
35	Facilities & Equipment	5453	Central Warehousing	3.1	0.0	6.3	5.6	35.0	10.0	0.0	0.0	0.0	0.5	**60.5**
36	Stations & Parking	SP-136	91st St-Beverly Hills Station	3.9	5.6	5.0	2.5	22.0	10.0	2.3	2.3	2.5	4.5	**60.5**
37	Stations & Parking	5784	Forest Glen Station	3.9	7.0	5.0	2.5	22.0	10.0	1.5	0.7	3.7	4.0	**60.3**
38	Bridges, Track & Structure	5641	Bridge 86 - 78th St Entrance	2.7	3.7	2.5	8.5	35.0	0.0	1.9	0.4	1.6	3.8	**60.0**
39	Stations & Parking	5585	Evanston/Davis Street Station	4.5	10.0	6.3	6.0	22.0	0.0	1.5	1.0	4.6	4.0	**59.9**
40	Stations & Parking	SP-2	Richton Park Station	3.9	7.4	5.0	2.5	22.0	10.0	1.1	0.4	3.4	4.0	**59.7**
41	Stations & Parking	EC-110	Glen Ellyn Station	5.1	6.2	7.5	6.0	16.0	10.0	0.0	0.9	4.3	3.5	**59.5**
42	Rolling Stock	5204	Locomotive Rehabilitation [F40 Option 1]	5.3	3.0	8.8	10.0	19.0	10.0	0.0	0.0	0.6	2.8	**59.4**
43	Stations & Parking	5983	Riverdale Station	4.5	5.9	2.5	2.5	22.0	10.0	2.6	2.6	2.9	4.0	**59.4**
44	Signals, Electrical & Comms	5757	DC & AC Switchgear Replacement	4.7	0.0	6.3	3.5	35.0	10.0	0.0	0.0	0.0	0.0	**59.4**
45	Stations & Parking	5985	Matteson Station	3.8	6.6	2.5	2.5	22.0	10.0	2.3	2.6	2.6	4.5	**59.3**
46	Signals, Electrical & Comms	SS-2	Barrington Interlocking	6.0	1.1	7.5	3.5	29.0	10.0	0.0	0.0	0.6	1.5	**59.2**
47	Signals, Electrical & Comms	5944	Richton Yard Interlocking Renewal	6.0	1.1	7.5	3.5	29.0	10.0	0.0	0.0	0.6	1.5	**59.2**
48	Signals, Electrical & Comms	5855	Signal Interlocking Microprocessors	7.0	0.0	2.5	4.5	35.0	10.0	0.0	0.0	0.0	0.0	**59.0**
49	Facilities & Equipment	YI-03	Roof Replace-49th St Fuel Building	3.7	0.0	5.0	2.5	35.0	10.0	2.3	0.0	0.0	0.5	**58.9**
50	Signals, Electrical & Comms	5388	Smart Gates	4.7	0.0	7.5	4.5	32.0	10.0	0.0	0.0	0.0	0.0	**58.7**
51	Stations & Parking	5979	115th Street/Kensington Station	3.2	7.0	3.8	2.5	22.0	10.0	2.6	0.3	2.8	4.5	**58.7**
52	Facilities & Equipment	BI-244	Kensington Tower Rehabilitation	3.0	0.0	5.0	2.0	35.0	10.0	2.6	0.0	0.0	1.0	**58.6**
53	Rolling Stock	5605	Zero-Emissions Trainsets	6.5	5.7	5.0	10.0	25.0	0.0	0.0	0.7	2.8	2.8	**58.5**
54	Rolling Stock	5204	Locomotive Rehabilitation [F40 Option 2]	5.3	3.0	8.8	9.0	19.0	10.0	0.0	0.0	0.6	2.8	**58.4**
55	Rolling Stock	5204	Locomotive Rehabilitation [F40 Option 3]	5.3	3.0	8.8	8.0	19.0	10.0	0.0	0.0	0.6	2.8	**57.4**
56	Stations & Parking	SP-6	Congress Park	3.3	9.3	6.3	2.5	28.0	0.0	0.0	0.4	3.1	4.3	**57.1**
57	Bridges, Track & Structure	5542	Grand Avenue Bridge	2.7	1.1	6.3	3.8	29.0	10.0	1.9	0.0	1.1	1.3	**57.0**
58	Signals, Electrical & Comms	SS-6	MED Interlocking Microprocessors	7.0	0.0	1.3	3.5	35.0	10.0	0.0	0.0	0.0	0.0	**56.8**
59	Signals, Electrical & Comms	SS-7	SWS Interlocking Microprocessors	7.0	0.0	1.3	3.5	35.0	10.0	0.0	0.0	0.0	0.0	**56.8**
60	Signals, Electrical & Comms	SS-1	Electro Code Kenosha [UP Request]	2.7	0.0	6.3	8.6	29.0	10.0	0.0	0.0	0.0	0.0	**56.5**
61	Rolling Stock	5605	Zero-Emissions Trainsets [Option 1]	6.5	5.7	5.0	8.0	25.0	0.0	0.0	0.7	2.8	2.8	**56.5**
62	Rolling Stock	5605	Zero-Emissions Trainsets [Option 2]	6.5	5.7	5.0	8.0	25.0	0.0	0.0	0.7	2.8	2.8	**56.5**
63	Stations & Parking	5988	Indian Hill Station	3.2	7.5	3.8	2.5	19.0	10.0	0.0	2.9	3.8	3.5	**56.1**
64	Facilities & Equipment	5874	Fuel Storage Tank Upgrades	3.3	0.0	3.8	4.8	30.0	10.0	1.9	0.0	0.0	1.8	**55.5**
65	Stations & Parking	5885	Edgebrook Station	4.5	2.2	3.8	7.3	19.0	10.0	0.0	0.3	4.2	4.0	**55.2**
66	Bridges, Track & Structure	5444	Catenary Structure Rehabilitation	1.3	0.0	7.5	8.3	25.0	10.0	0.0	0.0	0.6	2.3	**54.9**
67	Stations & Parking	5883	Pingree Road Station	3.9	2.1	3.8	4.8	22.0	10.0	0.0	2.3	2.6	3.5	**54.9**
68	Signals, Electrical & Comms	5754	Homewood Substation	4.7	0.5	5.0	8.6	25.0	0.0	4.5	0.0	1.4	4.8	**54.4**
69	Rolling Stock	5207	Car Rehab (Nippon Sharyo)	5.9	3.5	6.3	5.5	19.0	10.0	0.0	0.7	1.2	2.3	**54.3**
70	Signals, Electrical & Comms	EV-1	Metra Police Communications Upgrades	7.7	0.0	5.0	6.5	25.0	10.0	0.0	0.0	0.0	0.0	**54.2**
71	Facilities & Equipment	5574	Station Displays (TROI Net)	3.5	5.7	5.0	3.0	23.0	10.0	0.0	0.7	2.4	0.8	**54.1**

SCORE RANK	PROJECT ASSET CATEGORY	PROJECT NUMBER (PE#)	PROJECT NAME	INVESTMENT PRIORITIZATION CRITERIA AND SUB-CRITERIA										2023 PRIORITY SCORE
				1.A. SAFETY AND SECURITY	1.B. CUSTOMER SERVICE	1.C. COST	2. PROJECT READINESS	3. IMPROVES THE SOGR	4. MEETS A MANDATE	5.A. IMPROVES EQUITY	5.B. ACHIEVES ACCESSIBILITY	5.C. ACCESS TO JOBS	6. EMISSIONS	
72	Rolling Stock	5804	Car Rehab (Amerail Midlife Rehab)	5.9	3.5	5.0	3.5	22.0	10.0	0.0	0.7	1.2	2.3	**54.1**
73	Signals, Electrical & Comms	5947	Crystal Lake Signal	5.3	0.0	6.3	3.5	29.0	10.0	0.0	0.0	0.0	0.0	**54.1**
74	Bridges, Track & Structure	BR-1	RI Line Retaining Wall Rehab	2.7	1.1	6.3	5.0	25.0	10.0	2.3	0.0	0.0	1.8	**54.0**
75	Signals, Electrical & Comms	5447	MDW Signal System Replacement	4.5	1.1	6.3	8.6	19.0	10.0	0.4	0.0	2.6	1.5	**54.0**
76	Stations & Parking	5981	Systemwide Station Improvements	3.9	3.2	7.5	3.5	32.0	0.0	0.0	0.3	0.6	3.0	**53.9**
77	Rolling Stock	5404	Switcher Locomotive Procurement	2.0	0.0	3.8	9.3	35.0	0.0	0.0	0.0	0.6	2.8	**53.4**
78	Stations & Parking	5976	Riverside Station	4.5	7.0	3.8	5.5	15.0	10.0	0.0	0.7	3.3	3.5	**53.3**
79	Signals, Electrical & Comms	5940	Signal System Upgrades-MED	2.7	0.0	6.3	5.0	29.0	10.0	0.0	0.0	0.0	0.0	**52.9**
80	Signals, Electrical & Comms	5941	Signal System Upgrades-MWD	2.7	0.0	6.3	5.0	29.0	10.0	0.0	0.0	0.0	0.0	**52.9**
81	Signals, Electrical & Comms	5942	Signal System Upgrades-RID	2.7	0.0	6.3	5.0	29.0	10.0	0.0	0.0	0.0	0.0	**52.9**
82	Stations & Parking	5977	Highlands Station	4.5	6.6	3.8	5.5	15.0	10.0	0.0	0.7	3.3	3.5	**52.9**
83	Stations & Parking	5989	Braeside Station	4.5	6.6	3.8	5.5	15.0	10.0	0.0	0.7	3.3	3.5	**52.9**
84	Signals, Electrical & Comms	EV-2	UHF Trunked Radio System	5.9	0.0	5.0	6.5	25.0	10.0	0.0	0.0	0.0	0.0	**52.4**
85	Bridges, Track & Structure	5916	Undercutting & Surfacing-MET	2.3	0.0	6.3	8.3	25.0	10.0	0.0	0.0	0.0	0.0	**51.8**
86	Bridges, Track & Structure	5925	Crossings (Road & Track)-MED	0.7	2.1	6.3	8.3	22.0	10.0	2.3	0.3	0.0	0.0	**51.8**
87	Facilities & Equipment	5867	Crew Facilities-University Park	1.9	0.0	5.0	7.0	25.0	10.0	0.0	0.0	0.5	2.0	**51.4**
88	Signals, Electrical & Comms	5943	Signal System Upgrades-UPR	2.7	0.0	6.3	3.5	29.0	10.0	0.0	0.0	0.0	0.0	**51.4**
89	Facilities & Equipment	5575	Ticket Vending Machines [Phase 2]	2.2	3.7	5.0	6.8	23.0	10.0	0.0	0.4	0.0	0.0	**51.0**
90	Signals, Electrical & Comms	5652	Centralized Train Control Upgrade	4.5	0.0	7.5	9.8	19.0	10.0	0.0	0.0	0.0	0.0	**50.8**
91	Bridges, Track & Structure	5931	Bridges & Retaining Walls-MED	4.7	0.0	6.3	8.3	19.0	10.0	1.5	0.0	0.0	1.0	**50.7**
92	Bridges, Track & Structure	5932	Bridges & Retaining Walls-MWD	4.7	0.0	6.3	8.3	19.0	10.0	1.5	0.0	0.0	1.0	**50.7**
93	Stations & Parking	5487	West Hinsdale Station	4.5	7.0	5.0	7.3	19.0	0.0	0.0	0.7	3.2	3.5	**50.2**
94	Bridges, Track & Structure	5911	Ties, Ballast, & Switches-BNS	0.7	0.0	6.3	8.3	25.0	10.0	0.0	0.0	0.0	0.0	**50.2**
95	Bridges, Track & Structure	TB-01	UPR Switch Renewal-UPR	0.7	0.0	6.3	8.3	25.0	10.0	0.0	0.0	0.0	0.0	**50.2**
96	Bridges, Track & Structure	TB-03	Switch Replacement-UPR	0.7	0.0	6.3	8.3	25.0	10.0	0.0	0.0	0.0	0.0	**50.2**
97	Facilities & Equipment	5962	Building Imp-Western Ave B1	3.7	0.0	5.0	2.5	25.0	10.0	2.3	0.0	0.0	1.8	**50.2**
98	Facilities & Equipment	YI-04	Roof Rehab-49th St Fuel Building	3.7	0.0	5.0	2.5	25.0	10.0	2.3	0.0	0.0	1.8	**50.2**
99	Signals, Electrical & Comms	5758	Power Distribution System Monitoring	5.0	0.0	6.3	3.5	35.0	0.0	0.0	0.0	0.0	0.0	**49.8**
100	Stations & Parking	5475	Systemwide Station Sign Replacement	2.0	4.8	3.8	5.0	23.0	10.0	0.0	0.4	0.6	0.0	**49.5**
101	Bridges, Track & Structure	5441	Bridge A110	2.7	1.1	6.3	3.8	22.0	10.0	0.0	0.0	1.5	2.0	**49.3**
102	Signals, Electrical & Comms	5554	Switch Layout Standards	4.7	0.0	7.5	5.0	32.0	0.0	0.0	0.0	0.0	0.0	**49.2**
103	Bridges, Track & Structure	5912	Ties & Ballast-MET	0.7	0.0	5.0	8.3	25.0	10.0	0.0	0.0	0.0	0.0	**48.9**
104	Facilities & Equipment	YI-05	Roof Rehab-Blue Island ENG Shop	3.7	0.0	5.0	2.5	25.0	10.0	1.5	0.0	0.0	1.3	**48.9**
105	Bridges, Track & Structure	5926	Crossings (Road & Track)-MWD	0.7	1.0	6.3	8.3	22.0	10.0	0.4	0.3	0.0	0.0	**48.8**
106	Bridges, Track & Structure	5921	Rail Renewal-MED	1.0	0.0	7.5	8.3	22.0	10.0	0.0	0.0	0.0	0.0	**48.8**
107	Bridges, Track & Structure	5922	Rail Renewal-MWD	1.0	0.0	7.5	8.3	22.0	10.0	0.0	0.0	0.0	0.0	**48.8**
108	Bridges, Track & Structure	5923	Rail Renewal-RID	1.0	0.0	7.5	8.3	22.0	10.0	0.0	0.0	0.0	0.0	**48.8**
109	Bridges, Track & Structure	5924	Rail Renewal-UPR	1.0	0.0	7.5	8.3	22.0	10.0	0.0	0.0	0.0	0.0	**48.8**

SCORE RANK	PROJECT ASSET CATEGORY	PROJECT NUMBER (PE#)	PROJECT NAME	INVESTMENT PRIORITIZATION CRITERIA AND SUB-CRITERIA										2023 PRIORITY SCORE
				1.A. SAFETY AND SECURITY	1.B. CUSTOMER SERVICE	1.C. COST	2. PROJECT READINESS	3. IMPROVES THE SOGR	4. MEETS A MANDATE	5.A. IMPROVES EQUITY	5.B. ACHIEVES ACCESSIBILITY	5.C. ACCESS TO JOBS	6. EMISSIONS	
110	Facilities & Equipment	5958	Yard Improvements-RID	1.3	0.0	7.5	5.0	22.0	10.0	2.3	0.0	0.0	0.5	**48.6**
111	Bridges, Track & Structure	5927	Crossings (Road & Track)-RID	0.7	1.0	6.3	8.3	22.0	10.0	0.0	0.3	0.0	0.0	**48.4**
112	Stations & Parking	5982	Parking Lot Improvements	2.0	1.6	3.8	7.5	32.0	0.0	0.0	0.1	0.6	0.8	**48.3**
113	Bridges, Track & Structure	5930	Bridges & Retaining Walls-BNS	3.7	1.1	6.3	8.3	19.0	10.0	0.0	0.0	0.0	0.0	**48.3**
114	Bridges, Track & Structure	5934	Bridges & Retaining Walls-UPR	3.7	1.1	6.3	8.3	19.0	10.0	0.0	0.0	0.0	0.0	**48.3**
115	Signals, Electrical & Comms	5561	Networking Equipment	3.3	0.0	5.0	5.0	25.0	10.0	0.0	0.0	0.0	0.0	**48.3**
116	Signals, Electrical & Comms	5561	Networking Equipment	3.3	0.0	5.0	5.0	25.0	10.0	0.0	0.0	0.0	0.0	**48.3**
117	Signals, Electrical & Comms	5658	Communications Improvements	3.3	0.0	5.0	5.0	25.0	10.0	0.0	0.0	0.0	0.0	**48.3**
118	Signals, Electrical & Comms	5750	Crossing Inventory Management System	3.3	0.0	5.0	5.0	25.0	10.0	0.0	0.0	0.0	0.0	**48.3**
119	Facilities & Equipment	5957	Yard Improvements-MWD	1.3	0.0	7.5	5.0	22.0	10.0	1.5	0.0	0.0	0.5	**47.8**
120	Stations & Parking	5978	Van Buren Street Station Improvements	3.9	3.2	5.0	3.5	23.0	0.0	0.0	0.3	5.8	3.0	**47.6**
121	Bridges, Track & Structure	5933	Bridges & Retaining Walls-RID	2.7	1.1	6.3	8.3	19.0	10.0	0.0	0.0	0.0	0.0	**47.3**
122	Facilities & Equipment	5768	Kensington Yard-HVAC Replacement	0.0	0.0	5.0	6.6	33.0	0.0	1.9	0.0	0.0	0.5	**47.0**
123	Facilities & Equipment	YI-06	Roof Rehab-Consolidated Control Facility	3.7	0.0	5.0	2.5	25.0	10.0	0.0	0.0	0.0	0.8	**46.9**
124	Facilities & Equipment	5962	Roof Rehab-18th St MU Shop	3.0	0.0	5.0	2.5	25.0	10.0	0.0	0.0	0.0	1.3	**46.8**
125	Facilities & Equipment	YI-03	Roof Rehab-Kensington Yard ME Shop	3.0	0.0	5.0	2.5	25.0	10.0	0.0	0.0	0.0	1.3	**46.8**
126	Facilities & Equipment	5963	Roof Rehab-47th St Diesel	2.7	0.0	5.0	3.0	32.0	0.0	2.3	0.0	0.0	1.8	**46.7**
127	Facilities & Equipment	BI-01	Crew Facilities-Richton Park	3.2	0.0	5.0	2.0	22.0	10.0	0.0	0.0	2.3	2.0	**46.5**
128	Bridges, Track & Structure	5913	Ties & Ballast-UPR	0.7	0.0	2.5	8.3	25.0	10.0	0.0	0.0	0.0	0.0	**46.4**
129	Facilities & Equipment	YI-07	Roof Replace-Signal Wiring Shop	2.3	0.0	5.0	2.5	25.0	10.0	0.0	0.0	0.0	1.3	**46.1**
130	Stations & Parking	5781	Station ADA Improvements	2.0	3.0	3.8	4.0	22.0	10.0	0.0	0.6	0.6	0.0	**45.9**
131	Facilities & Equipment	BI-243	Crew Facilities-CUS	3.9	0.0	5.0	3.0	19.0	10.0	0.0	0.0	3.0	2.0	**45.9**
132	Facilities & Equipment	5963	Building Imp-47th St Yard-Exhaust	3.9	0.0	5.0	3.0	19.0	10.0	0.0	0.0	3.0	2.0	**45.9**
133	Facilities & Equipment	BI-04	Building Imp-Front Ave Substation	3.9	0.0	5.0	3.0	19.0	10.0	0.0	0.0	3.0	2.0	**45.9**
134	Facilities & Equipment	5956	Yard Improvements-MED	1.3	0.0	7.5	5.0	22.0	10.0	0.0	0.0	0.0	0.0	**45.8**
135	Signals, Electrical & Comms	5755	Vollmer Substation	4.7	0.5	5.0	6.3	25.0	0.0	0.0	0.0	1.4	2.8	**45.5**
136	Bridges, Track & Structure	5445	CREATE EW-2 Bridge Lift	3.3	0.5	3.8	4.5	15.0	10.0	2.6	0.1	4.5	1.0	**45.3**
137	Bridges, Track & Structure	5330	CREATE - 75th St CIP	1.3	3.3	6.3	3.8	22.0	0.0	2.6	0.0	3.2	2.5	**45.0**
138	Rolling Stock	5306	F59 Locomotive Engine Upgrade	3.2	1.1	8.8	9.5	19.0	0.0	0.0	0.0	0.6	2.8	**44.9**
139	Facilities & Equipment	5959	Yard Improvements-UPR	1.3	0.0	5.0	5.0	20.0	10.0	2.3	0.0	0.6	0.5	**44.7**
140	Facilities & Equipment	5774	Engineering Cyber Security Systems	4.2	0.5	5.0	5.8	19.0	10.0	0.0	0.1	0.0	0.0	**44.6**
141	Signals, Electrical & Comms	5753	Harvey Substation	4.7	0.5	5.0	3.0	25.0	0.0	1.9	0.0	1.4	2.8	**44.1**
142	Facilities & Equipment	5955	Yard Improvements-BNS	1.3	0.0	5.0	5.6	22.0	10.0	0.0	0.0	0.0	0.0	**44.0**
143	Stations & Parking	5787	Chicago Union Station	4.6	10.0	3.8	4.0	13.0	0.0	0.0	1.0	6.0	1.5	**43.9**
144	Rolling Stock	5309	Battery Powered Locomotives	2.0	1.1	8.8	9.5	19.0	0.0	0.0	0.0	0.6	2.8	**43.7**
145	Stations & Parking	5478	Elevator Replacement	4.0	2.1	3.8	3.0	20.0	10.0	0.0	0.3	0.6	0.0	**43.7**
146	Bridges, Track & Structure	5842	Bridge Replacement Program	2.7	1.1	2.5	1.5	25.0	10.0	0.0	0.0	0.0	0.8	**43.5**
147	Bridges, Track & Structure	5920	Rail Renewal-BNSF	0.0	0.0	2.5	8.3	22.0	10.0	0.0	0.0	0.6	0.0	**43.4**

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				1.A. SAFETY AND SECURITY	1.B. CUSTOMER SERVICE	1.C. COST	2. PROJECT READINESS	3. IMPROVES THE SOGR	4. MEETS A MANDATE	5.A. IMPROVES EQUITY	5.B. ACHIEVES ACCESSIBILITY	5.C. ACCESS TO JOBS	6. EMISSIONS	
148	Rolling Stock	5809	Car Rehab (Nippon Sharyo HL2)	5.9	3.5	5.0	3.5	11.0	10.0	0.0	0.7	1.2	2.3	**43.1**
149	Facilities & Equipment	5868	Right of Way Equipment	1.9	0.0	5.0	5.0	17.0	10.0	0.0	0.0	0.0	1.5	**40.4**
150	Facilities & Equipment	5573	IT Components & Services	0.6	0.5	5.0	5.0	29.0	0.0	0.0	0.1	0.0	0.0	**40.2**
151	Facilities & Equipment	5866	Crew Facilities-14th Street Yard	1.9	0.0	5.0	3.8	16.0	10.0	0.0	0.0	0.6	2.0	**39.3**
152	Signals, Electrical & Comms	5151	Fiber Optic Cable-MED	6.4	4.6	3.8	4.0	10.0	10.0	0.0	0.4	0.0	0.0	**39.2**
153	Signals, Electrical & Comms	5153	Fiber Optic Cable-RID	6.4	4.6	3.8	4.0	10.0	10.0	0.0	0.4	0.0	0.0	**39.2**
154	Facilities & Equipment	5969	Ballast Rail Car Upgrades	1.9	0.0	6.3	5.0	25.0	0.0	0.0	0.0	0.0	0.8	**38.9**
155	Facilities & Equipment	4992	Hybrids & Alternative Fuel Vehicles	1.9	0.0	6.3	5.0	25.0	0.0	0.0	0.0	0.0	0.8	**38.9**
156	Facilities & Equipment	5869	Vehicles & Equipment	1.9	0.0	6.3	5.0	25.0	0.0	0.0	0.0	0.0	0.8	**38.9**
157	Signals, Electrical & Comms	5152	Fiber Optic Cable-MWD	6.4	4.6	3.8	3.5	10.0	10.0	0.0	0.4	0.0	0.0	**38.7**
158	Facilities & Equipment	5765	BNSF Yard Power Transformers	1.3	0.0	6.3	5.3	25.0	0.0	0.0	0.0	0.0	0.0	**37.8**
159	Bridges, Track & Structure	5629	Rock Island Intercity Improvements (RI3)	5.9	3.3	3.8	5.5	12.0	0.0	1.1	0.0	3.0	3.0	**37.6**
160	Facilities & Equipment	YI-10	Capital Delivery Yard Program	3.3	0.0	3.8	2.5	13.0	10.0	0.0	0.0	1.2	2.5	**36.3**
161	Stations & Parking	5886	O'Hare Station-Ped Improvements [Study]	4.5	3.7	5.0	2.5	9.0	0.0	0.0	0.3	5.8	4.5	**35.3**
162	Facilities & Equipment	5865	Crew Facilities-LaSalle Street	1.9	0.0	5.0	3.0	11.0	10.0	0.0	0.0	1.7	2.0	**34.6**
163	Facilities & Equipment	BI-02	Crew Facilities-New Blue Island Yard Bldg	3.2	0.0	5.0	2.0	20.0	0.0	0.0	0.0	2.3	2.0	**34.5**
164	Facilities & Equipment	5960	Crew Facilities-New 14th St Yard Bldg	3.2	0.0	5.0	2.0	20.0	0.0	0.0	0.0	2.3	2.0	**34.5**
165	Signals, Electrical & Comms	ES-7	Operational Tech Systems-Modernization	1.9	0.0	5.0	8.8	16.0	0.0	0.0	0.0	0.0	0.0	**31.6**
166	Signals, Electrical & Comms	ES-6	Operational Tech Systems-Access Security	1.9	0.0	5.0	8.8	16.0	0.0	0.0	0.0	0.0	0.0	**31.6**
167	Signals, Electrical & Comms	5950	Operational Tech Systems-Design Standards	1.9	0.0	5.0	8.8	16.0	0.0	0.0	0.0	0.0	0.0	**31.6**
168	Facilities & Equipment	5274	Cybersecurity Systems	1.9	0.0	5.0	8.8	16.0	0.0	0.0	0.0	0.0	0.0	**31.6**
169	Stations & Parking	5987	LaSalle Street Station [Study]	0.0	3.7	5.0	2.5	9.0	0.0	0.0	0.3	5.8	4.5	**30.8**
170	Facilities & Equipment	5452	M19A Yard Heating System	1.3	0.0	3.8	4.0	17.0	0.0	1.9	0.0	0.6	2.0	**30.6**
171	Bridges, Track & Structure	5928	Crossings (Road & Track)-UPR	1.3	0.0	3.8	8.3	17.0	0.0	0.0	0.0	0.0	0.0	**30.3**
172	Rolling Stock	5902	Locomotive and Car Improvements	5.3	1.1	3.8	5.0	13.0	0.0	0.0	0.0	1.8	0.0	**30.0**
173	Signals, Electrical & Comms	ES-8	Kedzie Signal System	4.0	0.0	5.0	3.5	3.0	10.0	2.3	0.0	0.6	0.5	**28.9**
174	Facilities & Equipment	5970	Office Equipment	0.0	0.0	3.8	5.0	20.0	0.0	0.0	0.0	0.0	0.0	**28.8**
175	Bridges, Track & Structure	5841	Bridge Rehabilitation Program	2.7	1.1	2.5	1.5	10.0	10.0	0.0	0.0	0.0	0.8	**28.5**
176	Support Activities	5891-5	CDSC [Material Evaluation Services]	1.3	0.0	5.0	7.5	3.0	10.0	0.0	0.0	0.0	0.0	**26.8**
177	Support Activities	5891-4	CDSC [Survey and Data Evaluation Services]	1.3	0.0	5.0	7.5	3.0	10.0	0.0	0.0	0.0	0.0	**26.8**
178	Support Activities	5891-3	CDSC [Subsurface Utility Engineering Support]	1.3	0.0	5.0	7.5	3.0	10.0	0.0	0.0	0.0	0.0	**26.8**
179	Support Activities	5891-2	CDSC [Permit Quality Support]	1.3	0.0	5.0	7.5	3.0	10.0	0.0	0.0	0.0	0.0	**26.8**
180	Support Activities	5891-1	CDSC [Constructability]	1.3	0.0	5.0	7.5	3.0	10.0	0.0	0.0	0.0	0.0	**26.8**
181	Support Activities	5890	Capital Delivery Support Contracts	1.3	0.0	5.0	7.5	3.0	10.0	0.0	0.0	0.0	0.0	**26.8**
182	Facilities & Equipment	5672	Asset Management	1.3	1.1	2.5	8.5	3.0	10.0	0.0	0.0	0.0	0.0	**26.4**
183	Signals, Electrical & Comms	5352	Signal Standards	4.7	0.0	5.0	5.0	1.0	10.0	0.0	0.0	0.0	0.8	**26.4**
184	Rolling Stock	5010	Car And Locomotive Cameras	5.1	1.1	3.8	5.0	1.0	10.0	0.0	0.0	0.0	0.0	**25.9**
185	Facilities & Equipment	5967	HazMat Storage Systems	4.3	0.0	3.8	5.0	1.0	10.0	0.0	0.0	0.0	1.8	**25.8**

SCORE RANK	PROJECT ASSET CATEGORY	PROJECT NUMBER (PE#)	PROJECT NAME	INVESTMENT PRIORITIZATION CRITERIA AND SUB-CRITERIA										2023 PRIORITY SCORE
				1.A. SAFETY AND SECURITY	1.B. CUSTOMER SERVICE	1.C. COST	2. PROJECT READINESS	3. IMPROVES THE SOGR	4. MEETS A MANDATE	5.A. IMPROVES EQUITY	5.B. ACHIEVES ACCESSIBILITY	5.C. ACCESS TO JOBS	6. EMISSIONS	
186	Rolling Stock	5903	Wheel Replacement	2.0	1.1	5.0	5.0	12.0	0.0	0.0	0.0	0.4	0.0	**25.5**
187	Facilities & Equipment	YI-08	Manhattan Yard Wayside Power	3.3	0.0	5.0	6.3	3.0	0.0	4.5	0.0	0.0	2.8	**24.8**
188	Rolling Stock	5801	Traction Motors	2.0	0.0	3.8	5.0	13.0	0.0	0.0	0.0	0.6	0.0	**24.4**
189	Facilities & Equipment	5968	Fall Protection Systems	4.3	0.0	3.8	5.0	1.0	10.0	0.0	0.0	0.0	0.0	**24.0**
190	Bridges, Track & Structure	BR-2	Low Clearance Warning Devices	2.7	1.1	2.5	4.5	12.0	0.0	0.0	0.0	0.0	0.8	**23.5**
191	Support Activities	5898	Project Administration	0.0	0.0	5.0	5.0	3.0	10.0	0.0	0.0	0.0	0.0	**23.0**
192	Support Activities	5894	Infrastructure Engineering	0.7	0.0	3.8	4.5	3.0	10.0	0.0	0.0	0.0	0.0	**21.9**
193	Signals, Electrical & Comms	5949	Battery Electric Train Infrastructure	0.0	2.7	2.5	8.0	3.0	0.0	0.0	0.1	1.8	2.8	**20.9**
194	Stations & Parking	5479	Shelters	2.6	2.2	3.8	7.8	1.0	0.0	0.0	0.0	0.6	2.8	**20.7**
195	Facilities & Equipment	5771	Protective Asset Acquisition	0.0	0.0	1.3	6.0	13.0	0.0	0.0	0.0	0.0	0.0	**20.3**
196	Facilities & Equipment	5062	Automatic Passenger Counters	1.6	2.5	6.3	6.8	1.0	0.0	0.0	0.4	1.2	0.0	**19.8**
197	Facilities & Equipment	5965	Wheel Truing Machines	0.0	0.0	3.8	5.0	1.0	10.0	0.0	0.0	0.0	0.0	**19.8**
198	Signals, Electrical & Comms	5876	Automatic Equipment ID Readers	0.6	0.0	2.5	2.5	1.0	10.0	1.5	0.0	0.0	1.3	**19.4**
199	Bridges, Track & Structure	RA-11	Elmwood Park Grade Separation	2.3	1.6	7.5	3.0	1.0	0.0	1.1	0.1	0.0	0.5	**17.2**
200	Signals, Electrical & Comms	5559	Systemwide Cameras	2.5	2.2	2.5	5.0	3.0	0.0	0.0	0.0	0.0	0.0	**15.2**
201	Support Activities	5488	Project Development	0.0	0.0	5.0	5.0	3.0	0.0	0.0	0.0	0.0	0.0	**13.0**
202	Facilities & Equipment	5667	Woodstock Yard	0.0	0.0	5.0	4.3	1.0	0.0	0.0	0.0	1.3	0.0	**11.5**
203	Support Activities	5489	Program Management	0.0	0.0	2.5	5.0	3.0	0.0	0.0	0.0	0.0	0.0	**10.5**
204	Support Activities	5899	Contingencies	0.0	0.0	3.8	3.5	1.0	0.0	0.0	0.0	0.0	0.0	**8.3**