

**A RESOLUTION ADOPTING THE YEAR 2045
TRANSIT DEVELOPMENT ELEMENT- 2018
AMENDMENT of the METROPOLITAN
TRANSPORTATION PLAN FOR THE
GRAND FORKS - EAST GRAND FORKS
METROPOLITAN AREA**

WHEREAS, the U.S. Department of Transportation requires the development of a Metropolitan Transportation Plan by a Metropolitan Planning Organization for each urbanized area and area expected to have growth over a twenty year period; and

WHEREAS, the Grand Forks - East Grand Forks Metropolitan Planning Organization (MPO) has been designated as the policy body with responsibility for performing transportation planning in the Grand Forks - East Grand Forks Metropolitan Area; and

WHEREAS, the MPO is designated by the Governors of North Dakota and Minnesota as the body responsible for making transportation planning decisions in the Grand Forks - East Grand Forks Metropolitan Area; and

WHEREAS, the existing Metropolitan Transportation Plan was adopted in 2008 and, as in accordance with 23 U.S.C. 135 and 23 CFR 450.322, is being updated to remain current and maintain a twenty year horizon; and

WHEREAS, the Metropolitan Transportation Plan, in accordance with 23 CFR 450.322, is multimodal in scope and accounts for all travel modes in the four elements of the plan: Street & Highway, Transit, and Bike and Pedestrian; and

WHEREAS, the MPO adopted a 2045 Metropolitan Transportation Plan in June 2017, and the Metropolitan Transportation Plan Amendment being considered today is an amendment of the Transit sections of that plan; and

WHEREAS, the Metropolitan Transportation Plan, in accordance with 23 CFR 450.322, shall be financially constrained to demonstrate that proposed projects have existing and/or reasonably projected sources of funds; and

WHEREAS, the MPO followed its adopted Public Participation Plan to proactively involved the public early and often in the transportation planning process and requests the planning commissions and city councils from each community consider adoption of the Metropolitan Transportation Plan; and

WHEREAS, the By-Laws of the MPO allow the MPO Executive Board to take action upon adoption of the Metropolitan Transportation sixty (60) days after said plan had been submitted to the representative city and the 60 day period ended on September 28, 2018;and


WHEREAS, the Technical Advisory Committee of the MPO held public meetings on the proposed Metropolitan Transportation Plan; and


WHEREAS, the MPO submitted a request to each City to consider an amendment to its respective City Comprehensive Plan and both Cities indicated no need for an amendment; and

WHEREAS, the Executive Policy Board of the Grand Forks - East Grand Forks Metropolitan Planning Organization considered the actions taken by the above referenced local governmental agencies; and

NOW, THEREFORE, BE IT RESOLVED, that the Executive Policy Board of the Grand Forks - East Grand Forks Metropolitan Planning Organization hereby adopts the proposed Year 2045 Transit Development Element- 2018 Amendment to the Metropolitan Transportation Plan as presented with the following amendments: None.

November 21, 2018
Date


Ken Vein Chairman


Earl Haugen Ex. Director

9) TRANSIT ASSET MANAGEMENT

The mission statement of CAT is to “promote mobility by developing, providing, maintaining, and supporting the development and delivery of public transportation services. These services will be geared toward improving the quality of life for residents and increasing the economic vitality of Grand Forks and East Grand Forks.” Having a Transit Asset Management (TAM) plan which assesses current and future needs and prioritizes investments to resolve those needs is critical to meeting this mission statement.

OVERVIEW

To comply with FTA guidance, CAT must use inventory and condition data and well-defined objectives to provide a systematic process for improving resource allocation decision-making. This chapter will:

- » Assess the existing asset management practice at CAT
- » Present an asset management framework and business model that defines and communicates best practices of similar agencies around the country
- » Assist CAT in developing measurable goals and objectives for providing a systematic process for inventorying and assessing assets
- » Provide guidance for developing an FTA-compliant, high-level condition assessment for advancing asset management and guiding resource allocation decision-making within CAT

BEST PRACTICES IN ASSET MANAGEMENT

TRANSITION TO PREVENTATIVE MAINTENANCE

Traditionally, asset management was a reactive find-and-fix maintenance method. Improved transit asset management uses a predict-and-prevent approach to reduce cost and improve safety and reliability of the system. This new approach to asset management aligns with the guidance of the Federal Transit Administration (FTA), which requires that recipients of federal funding report on:

- » The condition of their system
- » Any change in condition since the last report
- » Targets set for the state-of-good-repair performance measures
- » Progress towards meeting those targets

CONDUCT REGULAR INSPECTIONS

In addition to reporting the data, inspections should be conducted on all assets. These inspections are critical to maintaining an accurate database that can help make investment decisions. Regular vehicle and equipment inspections should be conducted based upon vehicle type, mileage, road conditions and other policies.

- » Vehicle type: Due to deterioration from stop frequency and wear and tear from congestion and general use, revenue vehicles used for Fixed Route or Demand Response service require a more frequent and in-depth preventative maintenance inspection than other vehicles.
- » Mileage: Vehicles with the highest mileage should be inspected frequently.
- » Road conditions: Vehicles used in inclement weather or road conditions, such as ice, snow, or gravel, should be inspected more frequently than the manufacturer recommendation.

Inspections should occur on a regular schedule and be fully documented. Many agencies identify a specific staff person to manage this task.

REVIEW AND ADJUST

Finally, CAT staff should continually review these maintenance practices to identify improvements to the program. The current condition assessment portion of this chapter includes the first iteration of a FTA-compliant report on state of good repair (SOGR). Continually updating this section of the report with current numbers, budgets and the SOGR is the first recommended change.

EXISTING ASSET MANAGEMENT PRACTICES AT CAT

CAT currently has a robust and thorough vehicle maintenance program. Lead by the Transportation Supervisor, this program employs two full-time fleet maintenance mechanics who are responsible for the mechanical operation of the bus fleet. In addition to conducting daily repairs on the diesel engines and all related parts, they perform scheduled preventive maintenance according to a full-service checklist. To ensure safe, reliable operations, a vehicle inspection is performed every 4,000 miles on diesel and 3,000 miles on gas vehicles.

Any defect found during an inspection that would adversely affect the safe operation of the vehicle is to be repaired prior to release for service. Defects not affecting safe vehicle operation will normally be repaired prior to the vehicle being released for service. However, buses requiring parts not in stock, unavailable outside vendor services or excessive repair time, may be released at the discretion of the supervisor.

Bus operators are responsible for daily morning inspections of transit vehicles and operating a fixed route while providing excellent customer service. Operators also have a Driver's Check Sheet to make the inspection more consistent and routine.

INVESTMENT FRAMEWORK: GOALS AND OBJECTIVES

Achieving balance between maintaining current stock and replacing the oldest assets is a priority to CAT. Providing a safe and secure ride, operating a reliable transit system and making financial maintenance decisions at the most cost-effective time are also important to CAT. These goals will be balanced as financial operating and maintenance needs are suggested based on asset condition.

One initial desire of CAT is to remodel and expand the bus garage, originally built in 1984, for added garage and administrative space and become ADA compliant. In addition to this significant financial investment, maintaining an efficient, effective and high-quality transit coach fleet is also a top priority.

CURRENT CONDITION ASSESSMENT – GRAND FORKS

METHODOLOGY

The FTA Transit Economic Requirements Model (TERM) Lite tool estimates transit capital investment needs over an extended time horizon. It estimates asset condition based on age, useful life and asset decay curves. This tool was used to identify the current condition of the CAT transit system features and create recommendations for resource allocation to reach and maintain a SOGR for years to come. The assumptions used for the base model were:

- » 20-year horizon
- » All assets have the same priority
- » Expansion assets include five vehicles (two revenue vehicles and three non-revenue vehicles)

- » Agency soft costs are 10 percent across all asset types
- » Inflation is set at four percent
- » Agency capital budget is set at \$200,000 in 2017 and increases with inflation each year. This \$200,000 is for capital expenditures only; it is beyond the operation and maintenance budget of the agency.

Inputs

The inputs for this TERM Lite model are based on an inventory report from February 7, 2016. These inputs included 118 lines items, including fixed route and demand response rolling stock, associated ITS equipment, bus shelters, one bus garage, various office equipment and supplies and many maintenance and repair equipment pieces.

Useful lives were individualized for every asset. Revenue buses assumed useful lives between 10 and 12 years, other vehicles were closer to five years, maintenance equipment ranged from five to seven years.

ASSET INVENTORY REPLACEMENT VALUE

Figure 9-1 shows the existing replacement value of CAT's capital assets at \$22.7 million. Facilities, which include the existing bus garage, make up the largest single asset type at nearly \$10 million. Vehicles and bus shelters each make up around one-quarter of the value of CAT's assets.

ASSET CONDITIONS

An asset is in a SOGR if it has not reached the end of its useful life. The SOGR backlog represents the value of all assets in the transit system that are beyond their useful life and should be replaced. Based on the provided inventory, 68 percent of the total value of CAT's transit system is in backlog (Figure 9-2). This backlog is largely due to the bus garage being beyond its 30-year design life, many bus stops and shelters surpassing their design life, and the GFI fareboxes nearing the end of their useful life. If the bus garage is excluded from the analysis, 50 percent of the total value of CAT's transit system is in backlog.

Figure 9-1: Value of CAT Grand Forks Capital Assets by Category (2016 \$)

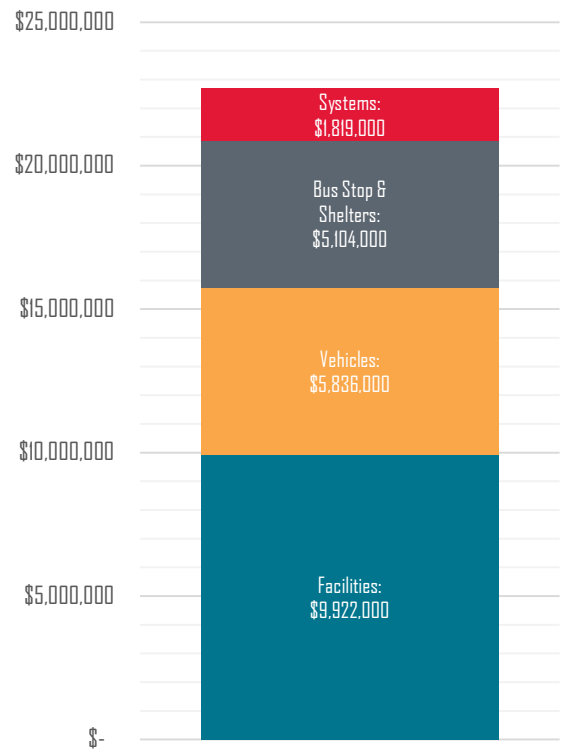


Figure 9-2: CAT Assets in State of Good Repair Backlog

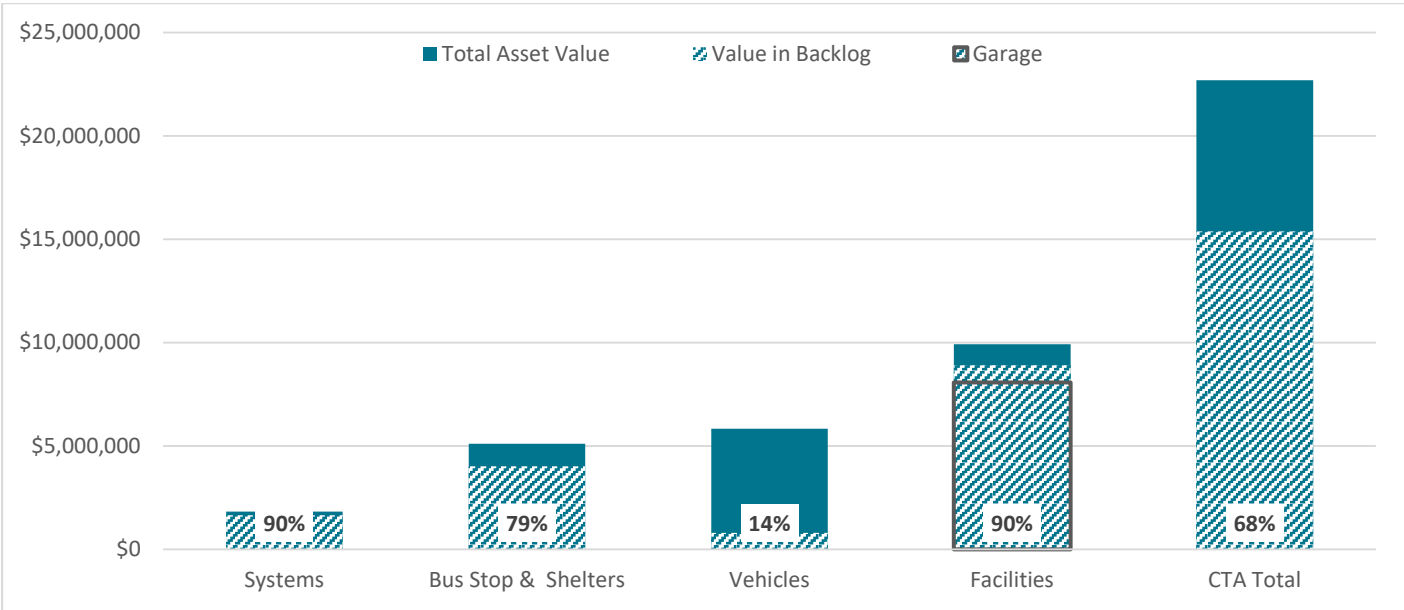


Table 9-1 shows how each FTA Category, Sub-Category and Element fits into the five FTA defined asset-condition categories based on how soon it will reach its useful life. For example, the CAT Maintenance Garage (Facilities, Buildings, Maintenance) is beyond its useful/functional life, thus it is classified as poor whereas the Fixed Route buses category (Vehicles, Revenue Vehicles, Bus) shows 24 percent of assets in excellent condition, 63 percent in marginal condition and 13 percent in poor condition. Even though CAT has applied for and received incremental funding for small-scale improvements at its Storage and Maintenance Facility, the facility itself is not likely in a SOGR. However, a detailed facility assessment was not within the scope of the TDP, and should be conducted to assist with prioritizing future investments. Based on input from CAT and the MPO, the overall capital need is for a full-scale upgrade and expansion of this CAT facility (as discussed in previous sections of this report).

Table 9-1: Asset Condition by Category and Type (Grand Forks)

Category	Sub-Category	Element	Useful Life	Replacement Value (2016 \$)	Excellent	Good	Adequate	Marginal	Poor*
Facilities	Buildings	Maintenance	30	\$8,081,000					100%
Facilities	Equipment	-	5 to 10	\$198,000	3%		5%	77%	15%
Facilities	Equipment	Maintenance	5 to 7	\$804,000		18%	3%	30%	49%
Facilities	Equipment	MIS/IT/Network Systems	3 to 7	\$839,000			21%	77%	3%
Vehicles	Revenue Vehicles	Bus	10 to 12	\$4,005,000	24%			63%	13%
Vehicles	Revenue Vehicles	Vans, Cutaways, and Autos	4 to 7	\$1,488,500	69%	22%	3%	3%	3%
Vehicles	Non-Revenue Vehicles	-	6	\$343,000	25%		14%	5%	56%
Stations	Bus Stop & Shelters	Bus Stops	20	\$1,091,000			100%		
Stations	Bus Stop & Shelters	Bus Stop Shelters	7	\$4,013,000					100%
Systems	Communications	Phone System	5	\$38,000		100%			
Systems	Communications	Radio	7	\$52,000					100%
Systems	Communications	Safety and Security	5 to 7	\$214,000		24%	15%	38%	23%
Systems	ITS	-	5 to 7	\$52,000			100%		
Systems	Revenue Collection	-	7	\$1,462,395				100%	

*Poor condition indicates the asset has reached the end of its useful life and is not in a state of good repair

CURRENT ASSET CONDITION – EAST GRAND FORKS

To reflect that East Grand Forks owns a limited amount of its own capital, a smaller analysis looked exclusively at the East Grand Forks capital inventory. Currently East Grand Forks owns a total inventory of four bus shelters and two revenue vehicles. Those assets were evaluated to determine the current assets by category as well as the current State of Good Repair Backlog. Table 9-2 demonstrates the current asset condition by category and type for East Grand Forks.

Table 9-2: Asset Condition by Category (East Grand Forks)

Category	Sub-Category	Element	Useful Life	Replacement Value (2016 \$)	Excellent	Good	Adequate	Marginal	Poor
Vehicles	Revenue Vehicles	Bus	7	\$273,000	50%	50%			
Facilities	Bus Stop & Shelters	Bus Stop Shelters	4 to 7	\$38,800			100%		

The East Grand Forks' revenue vehicles are currently in either Good or Excellent condition, and they currently have zero percent of their vehicle inventory in backlog. Given historic and projected programming through the MPO TIP and MnDOT, no replacement backlog for East Grand Forks over the planning horizon of this TDP is anticipated.

The entire current inventory of shelter assets owned by East Grand Forks is in adequate condition. Investments are needed in the long term to maintain a state of good of repair. However, East Grand Forks has no state of good repair backlog for shelters.

RECOMMENDATIONS FOR GUIDING RESOURCES

CURRENT FUNDING SCENARIO

If CAT had unlimited funding, assets would be replaced as soon as they reach the end of their useful life. However, with funding remaining constant at its current \$200,000 value for 20 years (adjusted for inflation), capital improvement decisions need to be made with limited funding. Figure 9-4 shows the investment schedule if funding stays constant. The bus garage expansion, valued at over \$8 million, is removed from this investment schedule analysis as it is assumed that this one-time renovation would

Figure 9-3: Value of CAT East Grand Forks Capital Assets by Category (2016 \$)

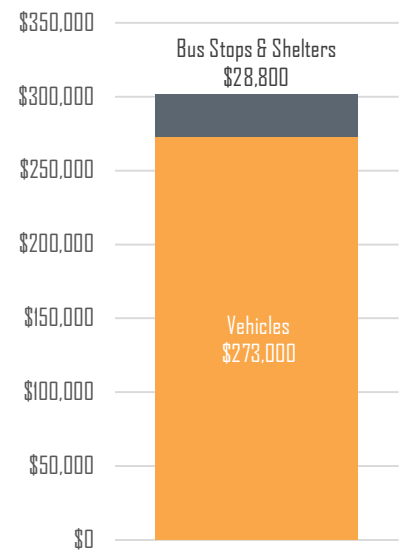
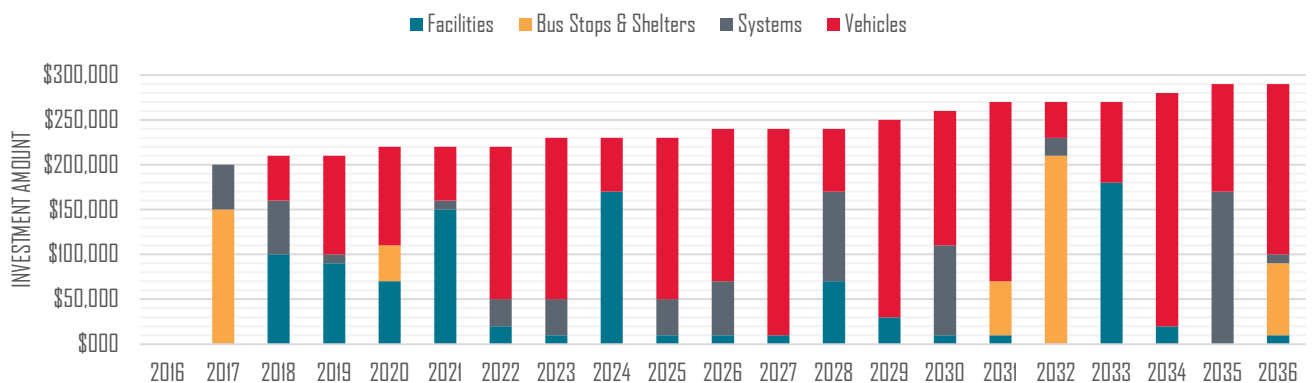


Figure 9-4: Proposed Investment Schedule Assuming \$200,000 Annual Capital Investment Budget



come from other funding sources beyond the \$200,000 per year budget.

The capital funding schedule under this scenario assumes over \$7 million is total investments over the next 20 years with Investments ranging from \$250,708 to \$499,579 per year. This funding scenario does not resolve the SOGR backlog. As expected, the backlog grows significantly over time when funding levels only increase with inflation (Figure 9-5).

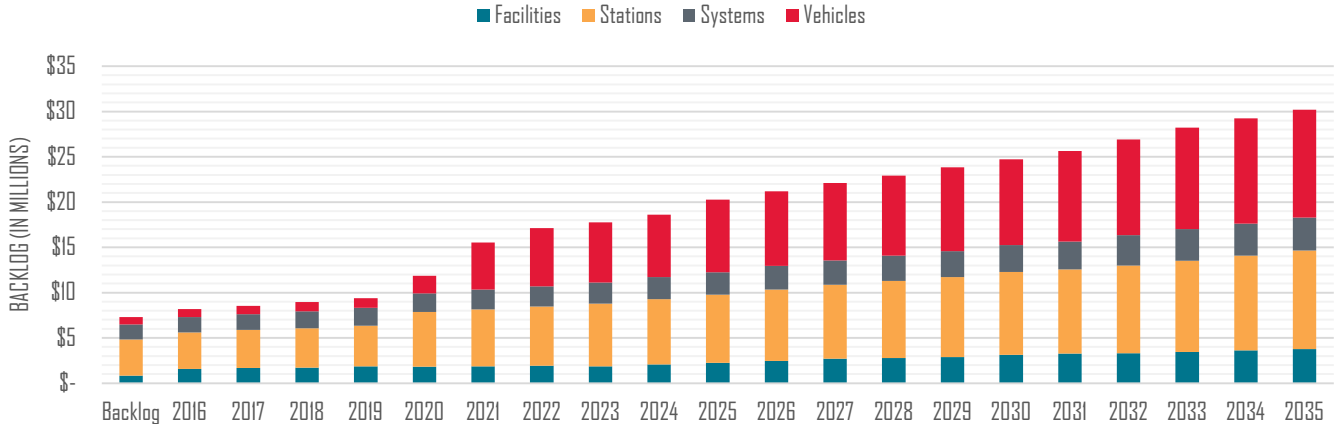
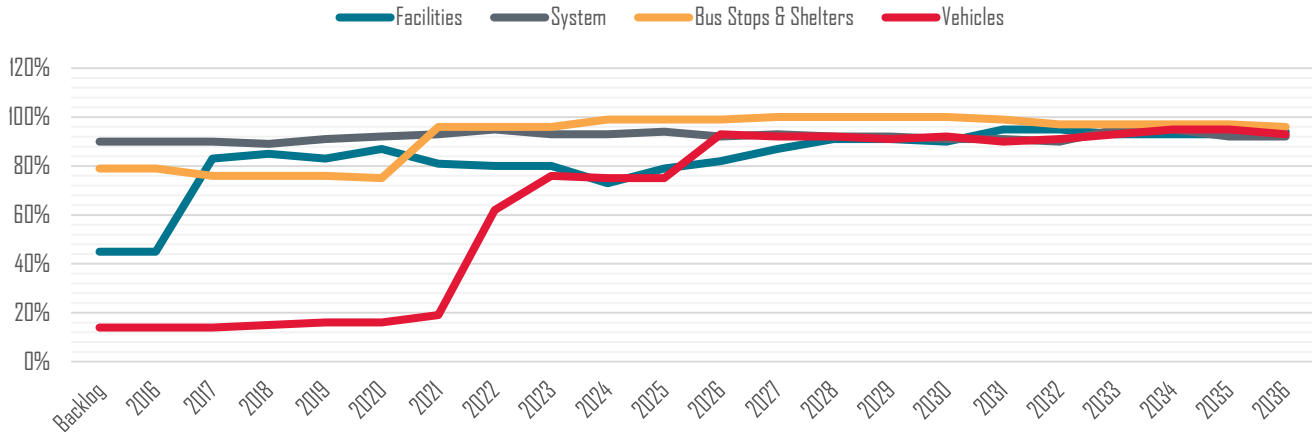


Figure 9-5: State of Good Repair Backlog with Current Annual Funding

Not all assets are in a consistent backlog given this funding scenario. Vehicles continue to rise from 20 percent in backlog in 2021 to over 90 percent beyond 2026 (Figure 9-6).

Figure 9-6: Percent of Replaceable Assets That Exceed Their Useful Life by Category in Current Funding Conditions



BACKLOG MANAGEMENT SCENARIOS

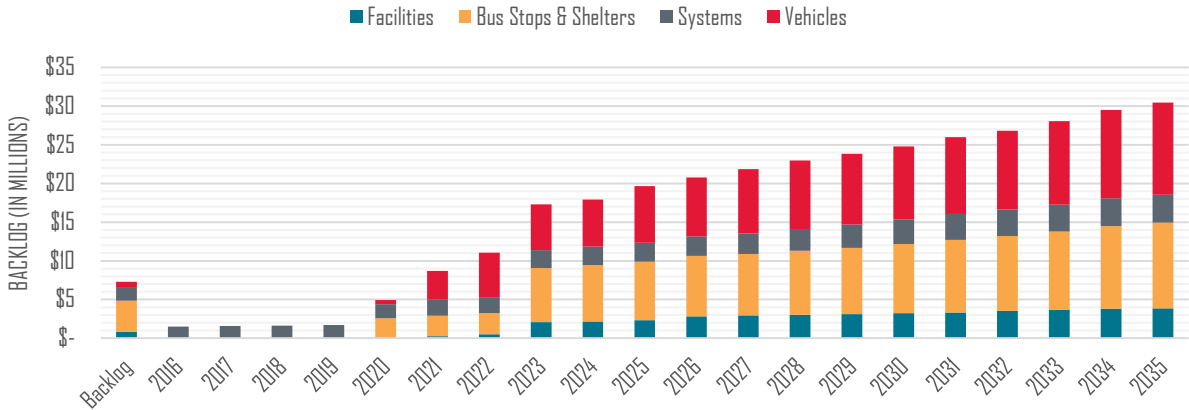
Three scenarios demonstrate how different funding levels and investment patterns could affect the SOGR at CAT.

Scenario 1: Eliminate Backlog with Immediate Cash Infusion

Without the bus garage expansion, the entire existing backlog is \$7.3 million (50 percent of the value). The first funding scenario presented eliminates this backlog with an immediate cash infusion. It is assumed that annual spending on capital improvement following this one-time correction remains steady at \$200,000 adjusted for

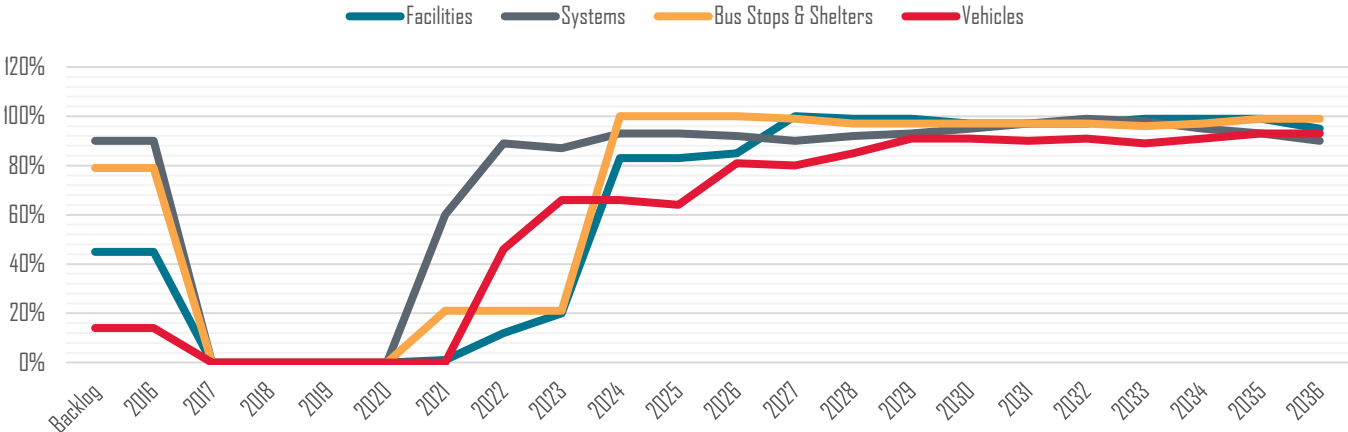
inflation. This cash infusion eliminates the backlog for four years, but without increased capital spending, the backlog returns to over \$7 million by 2021 (Figure 9-7).

Figure 9-7: State of Good Repair for Scenario 1: Backlog Assuming Immediate Cash Infusion



Vehicles are the first replaceable asset type to return to a backlog greater than 50 percent (Figure 9-8).

Figure 9-8: Percent of Replaceable Assets That Exceed Their Useful Life by Category Assuming Immediate Cash Infusion

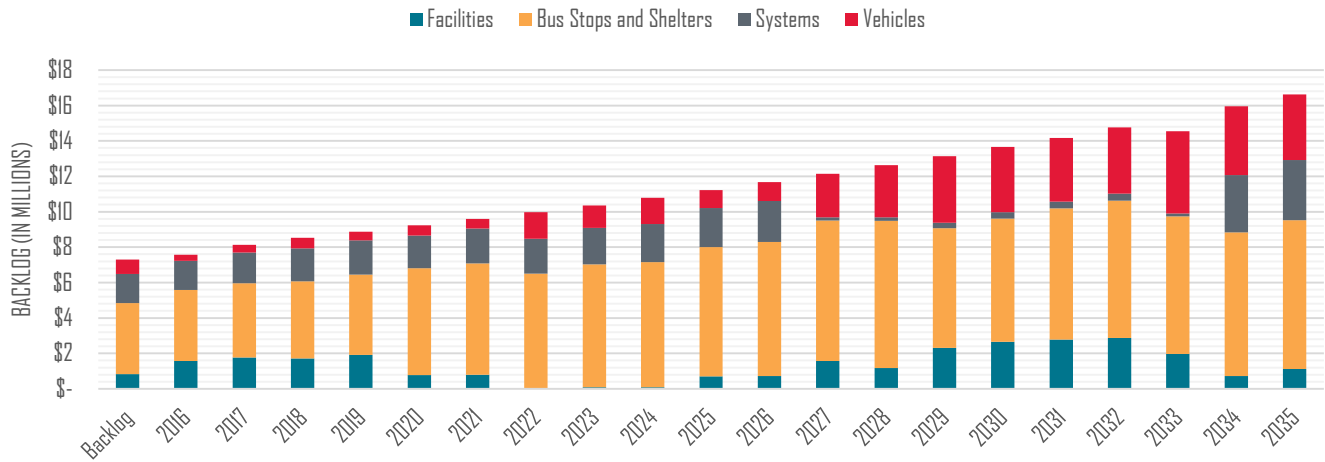


Although this immediate cash infusion scenario resolves the existing backlog today, it is not a realistic or effective capital funding solution for the agency in the long term.

SCENARIO 2: MAINTAIN BACKLOG FOR FIFTEEN YEARS

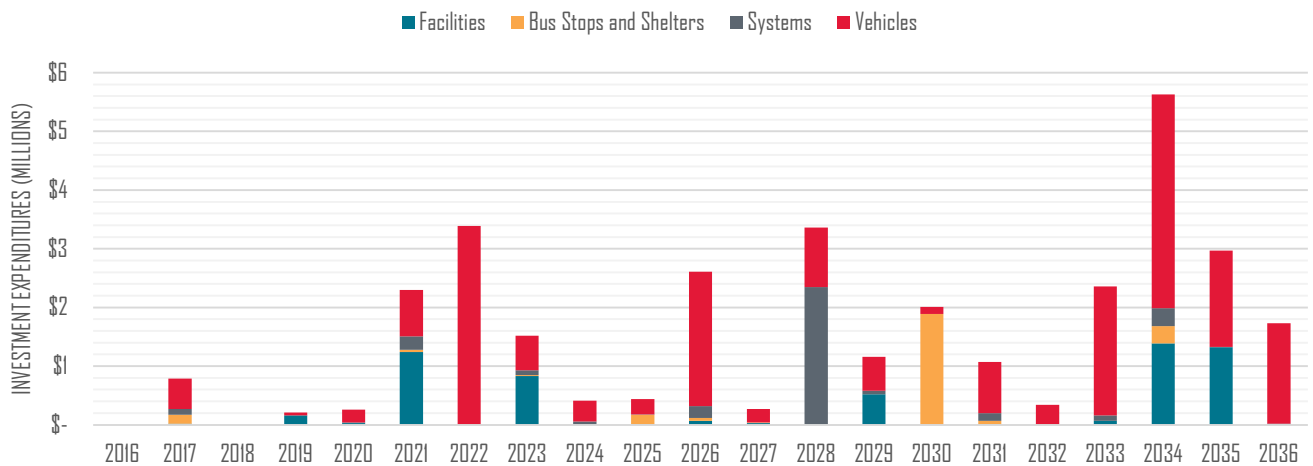
The goal of the second funding scenario is to maintain the current 50 percent backlog for 15 years (Figure 9-9). Although the dollar value of the backlog rises over time, this value, given inflation, remains at nearly 50 percent of the asset’s total value.

Figure 9-9: State of Good Repair for Scenario 2: Maintain Backlog at 50 percent



To achieve this consistent backlog of 50 percent, investments per year will vary significantly. While some years need little or no capital expenditures, other years will require large investments to maintain more expensive assets. For instance, while 2018 needs no capital investments, 2021 is slated for vehicle maintenance, fuel tank replacements and communication system upgrades that total \$2.3 million (Figure 9-10). The average annual investment over the 15 years that the 50 percent backlog is being maintained in this scenario is \$1.24 million.

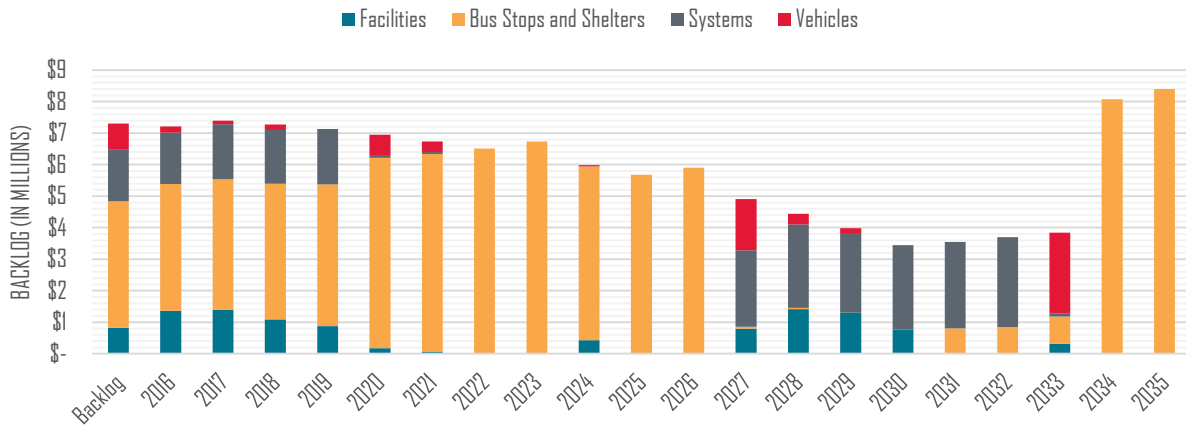
Figure 9-10: Investment Schedule to Maintain 50 Percent Backlog for 15 Years



SCENARIO 3: REDUCE BACKLOG INCREMENTALLY

The goal of the last scenario is to reduce the backlog over 15 years to 25 percent of its current value (Figure 9-11).

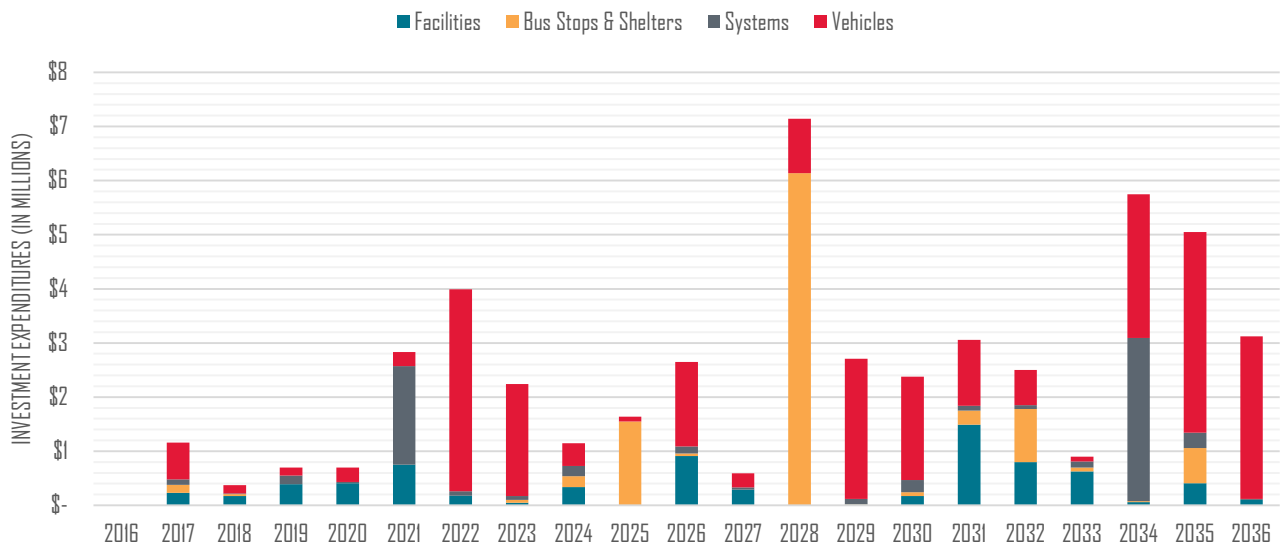
Figure 9-11: Backlog in the Incremental Reduction Scenario



To achieve this incremental backlog reduction, investments per year need to increase over time. While the first four years would require around one million in capital expenditures per year, following years need consistently more than \$2 million in expenditures per year (Figure 9-12). The average annual investment over the 15 years that the backlog is being incrementally reduced in this scenario is \$2.08 million.

2028 is a unique year in the scenario, where \$6.4 million is spent replacing 17 bus shelters. Although the model replaces all the shelters in one year, it is likely that the bus shelters would be incrementally replaced so that those costs could be spread over many years and be less of a burden on the transit agency's annual budget.

Figure 9-12: Investment Schedule to Reduce Backlog Incrementally for 15 Years



SUMMARY OF TRANSIT ASSET MANAGEMENT AND STATE OF GOOD REPAIR

Several themes emerge from the analysis:

- » The current assumed level of capital investments (\$200,000 per year) will not improve the SOGR. Without increasing funding levels, the backlog could increase dramatically over twenty years.
- » Investments will need to be made strategically. A single investment level is not practical. Targeting specific, costlier improvements in a certain year, such as vehicle replacements or bus shelter upgrades, will be more effective at reducing the backlog over time.
- » Targeting a specific backlog reduction—such as one percent per year—can help drive investment decisions.

Annual investments between \$1 and \$2 million per year will reduce the backlog in CAT's inventory. Focusing investments in opportune years will help bring the agency's assets into a SOGR.

CAT Bus Garage

CAT has received the expert opinion from a local engineering and architectural firm as well as an energy use evaluation consultant; the facility itself is not in a state of good repair. Based on these expert opinions, the overall capital need is for a full-scale upgrade and expansion of the CAT storage and maintenance facility (as discussed in previous sections of this report). CAT has applied for many separate grant opportunities to accomplish the full scale project; none have been awarded funds. Facing inability to find full funding, CAT has recently focused on addressing the most critical conditions. CAT has applied for and received incremental funding for small scale improvements at its Storage and Maintenance Facility, recent short term investments are targeted at addressing high priority health and safety issues which have been identified as needs for the CAT Garage. CAT is approaching these incremental improvements as capable of being reuse if a full remodel and expansion of the facility is done.

2018 Update: Performance Base Planning and Programming and MTP

TRANSIT ASSET MANAGEMENT

MAP-21 and FAST ACT requires incorporation of performance based planning and programming in the development of the Grand Forks – East Grand Forks Metropolitan Planning Organization's (Forks MPO) Metropolitan Transportation Plan (MTP). The requirement in these US Laws defined that the MTP shall include, to the maximum extent practicable, a description of the anticipated effect of the MTP toward achieving the performance measures by linking them with the investment priorities. The Forks MPO is a bi-state MPO with area included in parts of Minnesota and North Dakota included within its study area.

Performance based planning and programming is fairly new to the Forks MPO. Although the current 2040 Metropolitan Transportation Plan (MTP) introduced performance measures and targets, the federally required measures were not yet fully available. As the federal requirements were being promulgated, MPO staff kept abreast of their development via webinars, workshops and trainings. The Forks MPO is developing and defining the organizational framework and roles in meeting the performance requirements. One example has been the adoption of a MOA with each state dot and each local transit operator that identifies the roles and responsibilities of each in achieving the necessary requirements. Performance based planning and

programming is varied between the two state dots. Minnesota has used its version of performance measures and target setting for a decade or more. Whereas, North Dakota has just started emerging with its performance based planning and programming. The Minnesota side MOA includes more of the measures that are federally required and identifies more roles and responsibilities. The North Dakota side MOA will be expanded as additional measures are cooperatively developed.

Another example of the efforts of the Forks MPO in meeting the federal performance requirements is the current updating of the MTP. The 2045 MTP will be developed and adopted in time to meet the timelines for all federally required performance measures and target setting. This effort will continue to expand the Forks MPO abilities in furthering the use of performance in our decision making.

There is allowed a phase in period for the required performance base measures and targets. As of October, 2018, the only required transit performance measures (PM) to have the description of anticipated effect are those related to the Transit Asset Management (TAM). The performance goal, as stated from a national perspective, is to achieve a state of good repair of the transit assets. Therefore, this section of the MTP – TDP Element will address them. The FTA 5307 and 5339 Programs are the core Federal-aid programs with the purpose to achieve a state of good repair. The TAM PM Final Rule supports the data-driven performance focus on the state of good repair. The TAM PM Final Rule establishes four performance measures, of which only three apply to the Forks MPO area.

In regards to the TAM PM, there are three specific measures that must be considered to carry out the TAM.

1. Condition of Rolling Stock
2. Condition of Equipment
3. Condition of Facilities

The initial targets were to be set by January 1, 2017. None were submitted to the MPO. At that time, the development of the 2045 TDP was coming to conclusion. Within the TDP, the transit operators and MPO were developing components of the TAM and did identify targets.

In June 2017, after close coordination with both states and including several discussions occurring at numerous MPO Technical Advisory Committees (TAC) and Executive Board meetings, the Forks MPO adopted TAM targets specific to the MPO study area (see Table 1). The general purpose of the Forks MPO is to establish a uniform transportation plan and program for planning investments in the transportation system. Further, one overall transportation plan covering the entire metropolitan area, including area for future growth, establishes the goals, objectives, and standards to achieve the plan.

TABLE 1

<u>Performance Measure</u>	<u>Target</u>
Condition of Rolling Stock	50% of Useful Life Benchmark
Condition of Equipment	80% of Useful Life Benchmark
Condition of Facilities	50% of facilities rated at 3 or better

The two transit operators have been working on TAM documents. A deadline of October 1, 2018, existed for transit operators to submit a TAM. An option for the transit operators was to join a state sponsored TAM (Tier II Group TAM). During the month of September, a decision was made to join the ND TAM. Despite East Grand Forks being in Minnesota and that there exists a MN TAM, the decision was to have it participate in the ND TAM. The lead agency is Grand Forks as East Grand Forks purchases transit services from them. This decision came too late to process respective approvals to meet the October 1st deadline. Each transit operator has requested a one month extension to submit a TAM. Once the Forks MPO receives the TAM, it will work with its partners to determine whether an adjustment is needed to the TDP targets. One distinguishing factor is that the transit operator TAM targets are an annual target whereas the MPO targets are considered five year targets.

As the TAM PM is an annual target setting requirement, the States, transit operators, and Forks MPO have identified methods to assist in achieving target setting. Annually, assessment of each asset condition is to be documented. This work is reported to the National Transit Database. This annual report will provide the basis for the annual target setting and the reporting of progress towards achieving the state of good repair.

The current metropolitan Transit Development Plan is the 2045 Plan. It was developed and adopted under the guidance available for the MAP-21 and FAST ACTs. The established measures specific to TAM were not finalized until after the 2045 Plan was adopted. In that Plan, the Forks MPO did establish performance targets regarding TAM. State of Good Repair is one of the explicit goals of the 2045 Plan. Many objectives were adopted to support this goal. In addition, standards were approved that assist in reaching the objectives and overall goal.

These measures and targets were developed prior to the final federal required measures and target setting process. Therefore, an exact comparison cannot be made. The Forks MPO is currently updating the 2045 Plan. Under this process, the new Plan will implement the now promulgated required national performance measures. Particular attention is being done to integrate the various TAM plans being promulgated by respective agencies.

As stated previously, the national TAM performance effort is to achieve a state of good repair. The predominant program that Congress has created to achieve this is the FTA 5339 Program. Most notably, each state has an adopted TAM Plan. As noted above, the North Dakota TAM Plan has been adopted by our two transit operators even though one is located in Minnesota. State of good repair targets are identified within each and specific strategies are adopted.

The Forks MPO MTP – TDP Element has been recently amended to update the potential capital projects to maintain a state of good repair for transit assets. This list will be the primary candidate projects for the annual solicitation of federal and state capital funds. Periodically, new, unanticipated funding solicitations are made and this list will be reviewed and adjusted if appropriate.

The Forks MPO has a project selection process adopted to assist it in planning and programming projects. Each possible project is reviewed through several criteria pertinent for the projects likely funding source. State of good repair is one of the primary considered criteria for transit capital requests. The application form requests the project sponsor to indicate whether the proposed projects are furthering the respective TAM plans that exists.

In the current TIP, the FTA 5339 program has many projects programmed towards state of good repair for transit assets. Several vehicle replacements are on schedule to keep the fleet up-to-date. Equipment is

programmed as well as components of facilities. A recent award will bring the main Public Transportation Facility into a state of good repair. Significant investment is being made to modernize, renovate and expand the facility. Candidate projects are currently being vetted through the TIP process for bus shelters, equipment and other items to bring additional assets into a state of good repair.

Besides the FTA programs, the state Of Minnesota provides state funds to assist the East Grand Forks transit operator to maintain state of good repair. Minnesota funds have been used and are programmed to be used to purchase replacement vehicles and replacement fare machines.

In conclusion, the Forks MPO understands that they are in the early stages of developing a fully compliant performance based MTP and TIP. This amendment to the MTP – TDP Element serves to codify existing baseline TAM PMs in the MTP – TDP Element, as cooperatively developed with NDDOT, MnDOT, and local transit operators. Through the current MTP update process, the Forks MPO will fully integrate TAM PM into their prioritization methodology for projects based on the performance measures and targets.

As multiple years of data is collected for the performance measures and their targets, the Forks MPO will be able to see if the performance of their transportation system is moving in the right direction to meet the desired targets. Adjustments can be made to the strategies to meet the performance targets if the desired results are not being met.

10) FINANCIAL PLAN

INTRODUCTION

This section provides an overview and summary of the five-year (2018-2022) financial analysis related to implementation of the recommended operational strategy for CAT. The fiscally constrained implementation of the TDP would result in the implementation of the Cost Constrained Scenario for Grand Forks and East Grand Forks.

This plan provides guidance to move towards implementing the Cost Constrained Scenario by the 2nd Quarter of 2018. The system restructure proposed by the TDP allows for a new route structure to be implemented, with varying levels of new revenue investment by each major CAT funding partner. However, based on existing funding projected to be available, it is recommended that the Cost Constrained Scenario be implemented as outlined in Alternatives Analysis element of the TDP.

ASSUMPTIONS

Assumptions used in the development of this element of the TDP are as follows.

- » Implementation of the TDP starts April 1, 2018, and therefore cost for calendar year 2018 are assumed at ¾ of those shown in the Operational Analysis in the Alternatives Analysis chapter above. Operations costs were initially inflated in the Operational Analysis, so for this element of the TDP, they again grown four percent annually from 2019 on. Revenue projections match those discussed below.
- » The selection of April 1, 2018 as the implementation window was developed to match recent funding provided by MnDOT to support CAT service improvements in East Grand Forks.
- » Revenue assumptions were based on the current approved 2017-2020 Grand Forks – East Grand Forks Transportation Improvement Program (TIP). These revenue assumptions were augmented to account for recent 100 percent State funding provided to the East Grand Forks by MnDOT. Revenue projections for East Grand Forks also assume slightly elevated annual revenue as reported by MnDOT for the years 2020 and 2021 (and extrapolated to 2022) to support with TIP and STIP development.
- » The tripper service should be discontinued and reevaluated in coordination with area agencies and human service stakeholders.

OPERATIONS

Operational costs are broken out by system. Based on MnDOT funding provided to East Grand Forks, the Cost Constrained Scenario is fully fundable through the year 2019 in East Grand Forks. Implementation of the Cost Constrained Scenario for Grand Forks is essentially cost neutral through the five-year planning horizon.

Grand Forks

Table 10-1 shows the overall operation analysis for the Grand Forks portion of the TDP for the years 2017 to 2022. No new funds are needed for the Grand Forks portion of the CAT system to implement the Cost Constrained Scenario over the life of the TDP. If Grand Forks were wishing to reach the Cost + Scenario, total new Grand Forks revenue to support implementation of the Cost + Scenario is projected to be between \$225,000 and \$330,000 annually over the five-year life of the TDP. Not moving forward with the Cost + Evening Service implementation would reduce this by between \$97,000 and \$150,000 annually over the life of the TDP.

2018 Update

Table 10-1 has been updated to reflect the most current cost of service and estimated incoming revenue. Grand Forks has implemented the Cost+ Scenario of the proposed new route alternatives. The City was also to find some cost savings when implementing this new route structure. The final routes look different from the ones proposed in this plan due to test runs

and on the ground verification of current ridership. The riders had a month and multiple meeting opportunities to provide input. This input also change routing and time tables that are part of the final route structure.

Table 10-1: Grand Forks Financial Analysis

	2017	2018	2019	2020	2021	2022
Other	\$338.4	\$345.20	\$352.10	\$359.14	\$366.33	\$373.65
Local	\$1,765.1	\$1,800.37	\$1,836.38	\$1,873.11	\$1,910.57	\$1,948.78
State	\$253.1	\$258.18	\$263.35	\$268.61	\$273.99	\$279.46
Federal	\$1,112.0	\$1,134.21	\$1,156.89	\$1,180.03	\$1,203.63	\$1,227.70
Total Revenue	\$3,468.6	\$3,538.0	\$3,608.7	\$3,680.9	\$3,754.5	\$3,829.6
Existing Service						
Existing Cost	\$3,468.6	\$3,538.0	\$3,608.7	\$3,680.9	\$3,754.5	\$3,829.6
New Service						
Cost Constrained (Day)	\$0.0	-\$18.0	-\$24.0	-\$25.0	-\$26.0	-\$27.0
Cost Constrained (Night)	\$0.0	\$9.0	\$12.0	\$12.5	\$13.0	\$13.5
Total Cost	\$3,468.6	\$3,529.0	\$3,596.7	\$3,668.4	\$3,741.5	\$3,816.1
Total Shortfall/Surplus	\$0.0	\$9.0	\$12.0	\$12.5	\$13.0	\$13.5

*All values shown as \$1,000s

2018 Operational Costs Table- Grand Forks

	2017	2018	2019	2020	2021	2022
Other	\$338.4	\$345.20	\$372.20	\$379.64	\$387.24	\$394.98
Local	\$1,765.1	\$1,703.57	\$1,615.3	\$1,669.7	\$1,725.6	\$1,783.1
State	\$250.0	\$210.0	\$255.0	\$255.0	\$255.0	\$255.0
Federal	\$1,112.0	\$1,134.2	\$1,155.5	\$1,178.6	\$1,202.2	\$1,226.2
Total Revenue	\$3,465.5	\$3,393.0	\$3,398.0	\$3,483.0	\$3,570.0	\$3,659.3
Cost of Service	\$3,468.6	\$3,393.0	\$3,398.0	\$3,483.0	\$3,570.0	\$3,659.3
Total Shortfall/Surplus	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0

*All Values Shown as \$1,000s

East Grand Forks

Table 10-2 shows the overall operational analysis for the East Grand Forks portion of the TDP for the years 2017 to 2022. For years 2018 and 2019, East Grand Forks can meet anticipated revenue needs to support the Cost Constrained Scenario. Even with the assumption in increased revenues from MnDOT over life the planning horizon, East Grand Forks will run between \$135,000 and \$150,000 deficit following loss of the one-time MnDOT money. Therefore, Table 10-2 shows the investment in new services ending at the end of 2019. New funds would be needed to operate the Cost Constrained Scenario following the end of the two year MnDOT funding.

2018 Update

Table 10-2 has been updated to reflect the most current cost of service and estimated incoming revenue. MnDOT has committed to increasing the funding to East Grand Forks from MnDOT. Initially, MnDOT was only going to fund the additional service for a two year period. MnDOT is now indicating they will fund the added service for the remaining years as well. With the implementation of the new routes, a new cost allocation model was produced. This allowed for an easier understanding of the division of the cost and fare box revenue.

Table 10-2: East Grand Forks Financial Analysis

	2017	2018	2019	2020	2021	2022
Local	\$99.3	\$101.3	\$103.3	\$98.5	\$106.0	\$108.1
State	\$226.5	\$288.0	\$523.8	\$234.8	\$263.0	\$268.3
Federal	\$80.6	\$82.2	\$83.9	\$186.7	\$191.0	\$194.8
Total Revenue	\$406.4	\$471.6	\$711.0	\$520.0	\$560.0	\$571.2
Existing Service						
Existing Cost	\$406.4	\$414.6	\$422.8	\$431.0	\$439.7	\$448.4
New Service						
Cost Constrained (Day)	\$0.0	\$28.5	\$114.0	\$0.0	\$0.0	\$0.0
Cost Constrained (Night)	\$0	\$28.5	\$116.0	\$0.0	\$0.0	\$0.0
Total Cost	\$406.4	\$471.6	\$652.8	\$431.0	\$439.7	\$448.4
Total Shortfall/Surplus	\$0.0	\$0.0	\$58.2	\$89.0	\$120.3	\$122.8

*All values shown as \$1,000s

2018 Operational Costs Table- East Grand Forks

	2017	2018	2019	2020	2021	2022
Local	\$99.3	\$105.6	\$101.2	\$103.2	\$105.3	\$107.5
State	\$226.5	\$294.0	\$448.8	\$457.8	\$466.9	\$476.3
Federal	\$80.6	\$85.0	\$85.0	\$86.7	\$88.4	\$90.2
Total Revenue	\$406.4	\$484.6	\$635.0	\$647.7	\$660.7	\$674.0
Cost of Service	\$406.4	\$414.6	\$550.0	\$563.8	\$577.8	\$592.3
Total Shortfall/Surplus	\$0.0	\$70.0	\$85.0	\$84.0	\$82.8	\$81.7

*All Values Shown as \$1,000s

CAPITAL

Grand Forks

Table 10-3 shows the current projected capital expenditures needed to support the Grand Forks side of the CAT System over the life of this TDP through year 2022.

SHORT-TERM NEEDS

Over the life of the TDP Grand Forks will face an estimated need for \$4.0 million in capital funding to meet short-term capital needs. Nearly \$1.4 million of these funds are currently programmed, with another \$700,000 currently submitted for 2018 Federal funding through NDDOT. The largest chunk of this unfunded need will be four large vehicle replacements in 2022.

LONG-TERM NEEDS

The Grand Forks capital analysis is not inclusive of needed ongoing upgrades and expansion to the CAT Bus Garage. The full expansion and upgrade of the CAT Bus Garage is estimated at \$8.0 million. A multi-year funding strategy for this facility is needed, and should consider the potential for a MnDOT share in the eligible portions of the facility.

Based on the Asset Management analysis developed as part of the TDP, it is suggested that an additional \$1.25 million in new capital revenues are needed per year to maintain a backlog of roughly 50 percent for the next 15 years. Some of this backlog may already be addressed through capital replacements included in Table 10-3. Given the current split in overall service and revenue miles of the CAT System, approximately 85 percent of this backlog, or \$1.062 million would be Grand Forks' burden.

2018 Update

Table 10-3 has been updated to reflect the most current capital investment schedule. In 2018 Grand Forks was awarded 5339 competitive grant funding for the expansion and remodel of the Transit Administration and Maintenance facility for a total cost \$4.87 million. This is a one-time funding for a project that this plan could not see being done with current traditional funding sources. CAT had the floor plans redone so that the new cost of the expansion/renovation will be covered by the awarded grant amount. There have been additional 5339 formula funds being solicited for projects. CAT has a list of projects that will start working on the Transit Assets that are need of being brought back into a state of good repair. CAT will use this list to apply for future 5339 formula funds.

Table 10-3: Grand Forks Capital Investment Schedule

Grand Forks							
Item	Status	2017	2018	2019	2020	2021	2022
Replace Fixed Route (976)	Programmed	\$368.0					
Replace 2 Fixed Route (Replace 31 & 91)	Programmed	\$416.0					
Replace 2 DAR Vehicles (Replace 109 & 121)	Candidate - 5310		\$107.0				
Replace 3 DAR Vehicles (153-154)	Illustrative				\$120.0		
Replace Fixed Route (Replace 42 & 112)	Programmed		\$480.0				
Replace 1 Fixed Route (161)	Illustrative					\$68.0	
Replace 4 Fixed Route (103-106)	Illustrative						\$1,600.0
Misc. Capital + Safety	Programmed - 5307	\$35.0	\$15.0	\$15.0	\$15.0	\$15.0	
Fixed Route Video System	Candidate - 5339		\$60.0				
GFI Ticket Vending Machines	Candidate - 5339		\$38.0				
Shop Maintenance Software	Candidate - 5339		\$100.0				
Ticket Vending Machine	Illustrative			\$98.0			
Transit Garage Upgrades	Candidate - 5339		\$387.0				
Replace Shop Vehicles (2)	Illustrative			\$64.7			
Grand Cities Mall Shelter Improvements	Illustrative			\$100.0			
Programmed		\$819.0	\$495.0	\$15.0	\$15.0	\$15.0	\$0.0
Illustrative/Candidate		\$0.0	\$692.0	\$262.7	\$120.0	\$68.0	\$1,600.0
Total - Grand Forks		\$819.0	\$1,187.0	\$277.7	\$135.0	\$83.0	\$1,600.0

*All values shown as \$1,000s

2018 Capital Investment Schedule- Grand Forks

Grand Forks							
Item	Status	2017	2018	2019	2020	2021	2022
Fixed Route Vehicles	Programmed	\$784.0	\$480.0	\$490.0			
Paratransit Vehicles	Programmed		\$107.0	\$110.0			
Safety & Security	Programmed - 5307	\$35.0	\$15.0	\$15.0	\$15.0	\$15.0	\$15.0
Fixed Route Video System	Programmed		\$60.0				
Shop Mtce. Software	Programmed		\$100.0				
Shop Tools/Equipment	Programmed			\$16.0			
Digital Way Signs	Programmed			\$25.0			
Destination Signs	Programmed			\$20.0			
Transit Admin/Garage Upgrades	Programmed		\$387.0	\$4,784.4			
Bus Stops/Buildings Improvements/Maintenance	Programmed			\$10.0			
Paratransit Vehicles	Candidate - 5310/Illustrative				\$160.0		\$80.0
Fixed Route Vehicles- Replacement	Candidate - 5339/Illustrative					\$1,060.0	\$1,250.0
Fixed Route Vehicles- Expansion	Candidate- 5339/Illustrative			\$1,521.0			

Non-Revenue Vehicles	Candidate - 5339/Illustrative			\$63.0		\$30.0	
Capitalized Vehicle Maintenance	Candidate - 5339/Illustrative				\$80.0		
Shop Tools/Equipment	Candidate - 5339/Illustrative			\$20.0		\$80.0	
Bus Fare Boxes	Candidate - 5339/Illustrative			\$200.0			
Fare Collection Vault/Software & Servers	Candidate - 5339/Illustrative			\$106.3			
Transit Admin/Garage Upgrades	Candidate - 5339/Illustrative			\$150.0			
Bus Stops/Buildings Improvements/Maintenance	Candidate - 5339/Illustrative			\$186.0	\$20.0	\$45.0	\$20.0
<i>Programmed</i>		\$819.0	\$1,149.0	\$5,470.4	\$15.0	\$15.0	\$15.0
<i>Candidate/Illustrative</i>		\$0.0	\$0.0	\$2,246.3	\$260.0	\$1,215.0	\$1,350.0
Total - Grand Forks		\$819.0	\$1,149.0	\$7,716.7	\$275.0	\$1,230.0	\$1,365.0

*All Values Shown as \$1,000s

East Grand Forks

Table 10-4 shows the current projected capital expenditures needed to support the East Grand Forks side of the CAT System over the life of this TDP through year 2022.

SHORT-TERM NEEDS

Over the life of the current TDP, East Grand Forks has a total capital need of \$1.23 million. Of this amount, \$610,000 is currently programmed. The unfunded elements of the East Grand Forks capital analysis relate to vehicle needs in 2021 for replacement of vehicles 142 and 162.

LONG TERM NEEDS

The East Grand Forks capital analysis is not inclusive of needed ongoing upgrades and expansion to the CAT Bus Garage. Based on current services provided by CAT, MnDOT may potentially consider funding some portion of this facility. These discussions should be included in future investment planning for upgrade and expansion of the CAT Bus Garage.

The East Grand Forks capital analysis is not reflective of the needed additional investments to maintain a state of good repair. Based on the earlier discussion of the Asset Management analysis for CAT, an additional \$187,000 in revenue is needed from East Grand Forks to maintain their proportional share (based on percent of system revenue miles) of the current CAT capital infrastructure.

2018 Update

Table 10-3 has been updated to reflect the most current capital investment schedule. This reflects the change in year when a bus replacement will happen. There has been added card/ticket vending machines to help the system improve the ability for customers to access new fare cards or reload current ones.

Table 10-4: East Grand Forks Capital Investment Schedule

East Grand Forks							
Item	Status	2017	2018	2019	2020	2021	2022
Replace DAR Vehicle (Replace 141 w/cutaway)	Programmed		\$150.0				
Replace DAR Vehicle (142)	Illustrative					\$220.0	
Replace 1 Fixed Route (162)	Illustrative					\$400.0	
Expansion Fixed Route (MnDOT 100% \$)	Programmed		\$460.0				
Programmed	-	\$0.0	\$610.0	\$0.0	\$0.0	\$0.0	\$0.0
Illustrative/Candidate	-	\$0.0	\$0.0	\$0.0	\$0.0	\$620.0	\$0.0
Subtotal - East Grand Forks	-	\$0.0	\$610.0	\$0.0	\$0.0	\$620.0	\$0.0

*All values shown as \$1,000s

2018 Capital Cost Investment Schedule- East Grand Forks

East Grand Forks							
Item	Status	2017	2018	2019	2020	2021	2022
Paratransit Vehicle	Programmed		\$150.0				\$170.0
Fixed Route Vehicles	Programmed					\$170.0	
Safety & Security	Programmed		\$3.8				
Ticket Vending Equipment	Programmed			\$220.0			
Bus Stops/Buildings Improvements/Maintenance	Programmed				\$200.0		
Card Vending Equipment	Programmed						\$250.0
Expansion Fixed Route (MnDOT 100% \$)	Programmed		\$460.0				
Programmed		\$0.0	\$613.8	\$220.0	\$200.0	\$170.0	\$420.0
Illustrative/Candidate		\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Subtotal - East Grand Forks		\$0.0	\$613.8	\$220.0	\$200.0	\$170.0	\$420.0

**All Values Shown as \$1,000s*