

NEAR TERM IMPLEMENTATION – NEXT STEPS

While the earlier sections included a variety of improvements to be completed in the first five years of implementation, there are three functional areas of the transit system that should be the focus of the

first year to ensure the success of the vision plan. In the area of operations and maintenance, **on-time performance** should be the focus of the agency. Furthermore, an important linkage between opera-

tions and administration is **training**. Also, the vision identifies the roles and **responsibilities of the CCTA** as an emerging governing board.

ON-TIME PERFORMANCE

A measure that can improve both internal performance and the customer experience operating the buses according to their posted schedules. Especially relevant to a transit system that relies on timed transfers, having a predictable and easy-to-use transit system is critical to growing ridership in two ways – getting current riders to use the bus more often and attracting new riders to the system.

Strategies to Improve On-Time Performance

To be implemented simultaneously and collaboratively for the greatest benefit.

DATA COLLECTION AND MANAGEMENT

Kalamazoo Metro Transit has a wealth of technological applications that collect real-time operational data. These applications can “play back” times when there was a noted delay so that staff can research the causes and determine what action to take. Some issues may be chronic, and related to changes in workplace schedules, growing traffic congestion, etc. that may require changes to the

schedule running times. However, many on-time performance issues are intermittent (crash related congestion, construction detours, crowding, multiple wheelchair boardings, etc.) and will require action from road supervisors, dispatchers, and operators.

ROAD SUPERVISION/OPERATIONAL STAFF MANAGEMENT

When a bus is not running on schedule, especially when at risk of missing connections or causing delays by needing to hold other buses, there are several strategies available to transit staff to address this, many of which are already in place but not documented as formal procedures. The objective of each strategy is to make sure that, from the customer perspective, all buses run at posted scheduled times. Examples include:

■ Filling Routes

- When a bus falls critically behind schedule another bus can fill in at a later scheduled time point while the late bus makes up time. When this happens, the late bus will change to “drop off only” at the next time point and

not pick up any new passengers. Presumably the fill bus will have done that. From the customer perspective, buses run at posted times, and if the late bus makes up time, it reduces the amount of time that connecting buses would need to be held or the likelihood that passengers would miss a connection.

■ Mobile Dispatch

- Buses are sometimes late due to railroad delays, detours, malfunctioning traffic signals, emergency vehicles blocking routes, or other factors. When a bus misses its connections, passengers have long waits until the next bus arrives. The “mobile dispatcher” (staffed by a contracted driver or supervisor in a paratransit or support vehicle) will take people to locations within a 15 to 30 minute radius of the Kalamazoo Transportation Center and will be back for the next arrival cycle. While this will not accommodate all missed connections, it should accommodate many of the passengers who are inconvenienced.

■ Route Supervision

- On-time performance can be affected by the individual practices of each operator. When

a driver changes lanes, begins a turn, and dwells at stops can affect how well a bus can maintain a schedule. It is the role of operations management to document the turn-by-turn pattern of each bus route and document that for each driver. Subsequently, each driver should have a basic level of training on each route to make sure the routes are followed consistently and safely.

Finally, staff from each functional area should be a part of a process improvement workgroup to address on time performance.

TRAINING

Within the first year of plan implementation, new bus operators and supervisory staff will be hired. Before that time, work must be done on establishing a new training program for staff and making sure that the program is documented as part of a standard operating procedure. Training programs will incorporate participation in venues for peer sharing like state transit associations and the National Transit Institute. The executive director and CCTA may shift responsibilities within the agency to make sure that there is adequate leadership to bring new staff up to an excellent standard. Additionally, a project or administrative manager may need to be brought in to report to the executive director to help advance strategic initiatives and manage day-to-day operations. Staffing changes related to building institutional capacity will depend on the staff resources that are currently available and guidance from the CCTA board and executive director.

ROLE OF CCTA BOARD

The role of the CCTA board will be dynamic, as the system will grow and change in future years. The most important role is to insure **fiscal stability** of the system and the stewardship of public funds. The action steps are:

- Development of fiscally constrained budget with appropriate investments in new service
- Performance review of all services on a yearly basis
- Continued investment in capital infrastructure
- Allocation of appropriate levels of investment in training, safety, and employee development

Another important activity of the transit board is the establishment of **performance standards**. This includes route and system performance as well as service delivery quality. Typical standards are developed from a wide range of criteria. These include (but are not limited to):

- Minimum ridership standards for each route by period of day (AM peak, midday, PM peak, evening, Sat AM, Sat PM, Sunday)
- Maximum ridership standards where additional frequency is added to routes that exceed the maximum ridership performance standards
- Expanded service delivery criteria and standards beyond the current dashboard. This would include valid complaints, cleanliness standards, preventable accidents, etc.

- Service quality expectations (review mission and vision performance yearly, adjust as needed)

While the board helps to develop the performance criteria, the senior level staff at Kalamazoo Metro Transit are in charge of the day-to-day management of the system to comply with the standards.

Relationship development is another key duty of the transit board. This includes interaction with local government (elected and appointed) officials to address development issues and performance issues. Typically this would include:

- MPO transportation planning activities that support and enhance transit service
- Local roadway infrastructure development and redevelopment
- Local land use development
- Interaction with local private sector developers where transit can play an important role in housing/retail/commercial/industrial investments

External funding involvement is also important. The continuation of a robust Michigan DOT transit funding program is important to the fiscal stability of CCTA. Similarly, FTA funding and legislation should be a priority to restore bus replacement funding for small systems and guard against further transfers of FTA funding from bus to rail projects. Grass roots lobbying efforts at the state and federal levels are needed to continue the state and federal programs that are an important part of the transit funding mix in Kalamazoo.

MEDIUM-TERM RECOMMENDATIONS

Planning

TRANSIT PLANNING

Based on stakeholder input, numerous subjects have been identified for future study. These include the following:

- Feasibility of intercity transportation service:
 - Transit connections to rural counties, Grand Rapids, Battle Creek, Lansing etc. that may involve intercity bus, workplace shuttles, and connections to rail service.
- Continued market research to understand travel patterns and growing needs
- Further expansion of the fixed-route network

Part of the long term vision for the transit system includes the potential for enhanced bus service, or fixed guideway transit service that would operate on some of Kalamazoo's major transportation corridors. Enhanced bus service is local or limited-stop bus service that incorporates fare payment technology, signalization, and infrastructure that focuses on improving travel times and reliability (detailed in the Operations and Maintenance recommendations). Additionally, regionally oriented transit service to places like Van Buren County, Grand Rapids, and Lansing will be linked to Kalamazoo Metro Transit. This type of service requires additional investment, and will require further study. During this time frame the Comprehensive Operations Analysis of the

system will need to be updated, and should also be included in the program of projects related to planning.

TRAFFIC CONTROL/SIGNAL PRIORITY

Traffic control priorities for buses can be programmed when buses are behind schedule and software upgrades for the traffic control network can include these in future purchases. Typically, the earliest adopters of signal priority are emergency services and public safety. The transit agency should coordinate with local agencies if future traffic control initiatives could benefit transit service. This plan recommends that other local agencies take an initial lead in traffic control/signal priority and that Kalamazoo Metro Transit offer an advisory role.

An example of successfully implemented transit signal priority for local bus service can be found on the Washtenaw Avenue corridor in Ann Arbor, Michigan. There are national peer examples in Saint Cloud, Minnesota and numerous large urban areas (Seattle, San Diego, Minneapolis-Saint Paul, Los Angeles, and Baltimore) that use bus priorities in their signal timing. In many cases the early adopters of this technology were emergency services.

Additional Cost Summary: Medium-Term Planning Recommendations

Item	Cost
Intercity Transit Study	\$50,000-\$100,000
Comprehensive Operations Analysis/Transit Development Plan (may include intercity study/surveys/facility needs)	\$100,000 - \$250,000
Surveys and Market Research	\$35,000

Administration and Management

For the medium-term Kalamazoo Metro Transit should continue implementation of the short-term strategies.

Operations and Maintenance

FULLY DEVELOPED TRANSIT SYSTEM FRAMEWORK

In addition to the improvements that are implemented in the near-term recommendations, in the medium term is when a fully developed transit system can be realized that includes the development of a robust, high-frequency service network and a greater span of service.

A high frequency fixed route network is recommended serving those areas in the CCTA service area where high frequency, longer span of service, and Sunday service would be highly used. The recommendations are based on current usage, job density, and residential density.

It is proposed that a fully developed system will deploy nine routes that operate at 15 minute intervals in the busiest travel times on the busiest routes as recommended in the 2009 COA. Routes 1, 2, 7, 9, 11, 14, 15, and 16 would operate at 15 minute intervals from 7:00am to 9:00am and 2:00pm to 7:00pm; later on weekday evenings to 11:15pm and on Sunday at one hour intervals from approximately 11:00am to 6:00pm. Route 2 would also have the midday intervals improved to 30 minutes.

Route 21 would operate at 15 minute intervals for seven hours per day at slightly different times due to the different travel patterns on this route. The times would coordinate with class times and peak demands for class-residence travel. Evening service at 30 minute intervals would be operated Monday through Thursdays when classes are in session.

This level of investment will require an additional 40,300 revenue hours of service.

The advantage of a high-frequency network is that it serves the existing market of transit users very well, and will increase ridership by encouraging passengers to use transit more often. Also, with a higher frequency of service riding the bus takes a lesser degree of advanced planning, making the service more attractive to new riders. The network will also save current passengers significant amounts of time that they spend waiting for buses that are operating on 30 minute intervals for trips that have an unpredictable finish time, such as medical appointments or shopping trips. Current riders will be able to make more trips in less time and have a higher level of mobility.

ENHANCED BUS SERVICES

The 5-10 year time frame is also when the study and deployment of “enhanced bus” service should commence. Enhanced bus service is local bus service that experiences many of the outcomes of Bus Rapid Transit service, but with a lower per mile capital investment. It employs a variety of low cost, high benefit solutions that improve travel time and the customer experience. Enhanced bus strategies include:

- Transit stations with heated, sheltered waiting areas that provide real-time information
- Limited stop, or express service
- Pre-boarding fare payment to speed the process of boarding the bus
- High frequency service
- Branded vehicles and signage
- Transit signal priority

The Westnedge corridor has been identified as a likely candidate for enhanced bus service. Exclusive of transit signal priority improvements, the cost of an enhanced bus deployment is approximately \$750,000 per transit station. Assuming station spacing is about ½ mile, 8-10 stations could be constructed on the Westnedge corridor. However, further study of construction costs, right-of-way impacts, environmental impacts, and transit operations must be conducted prior to project deployment. There would be little effect on operating cost as these will be improvements to existing routes.

The table below shows a summary of what changes would be necessary to develop a high-frequency network.

Route	Existing					High Frequency Network				
	AM Frequency	Midday Frequency	PM Frequency	Evening Frequency	Passengers Per Hour	AM Frequency	Midday Frequency	PM Frequency	Evening Frequency	Sunday Frequency
1 – Westnedge	30	30	30	60	44.1	15	30	15	60	60
2 – Portage	60	60	60	60	36.8	15	30	15	60	60
3 – West Michigan	60	60	60	60	26.2	60	60	60	60	None
4 – Oakland	60	60	60	60	17.8	60	60	60	60	None
5 – East Main	30	30	30	60	25.4	30	30	30	60	None
6 – Parchment	60	60	60	None	20.3	60	60	60	60	None
7 – Alamo	30	30	30	60	25.0	15	30	15	60	60
8 – Egleston	60	60	60	60	24.0	60	60	60	60	None
9 – Gull Road	30	30	30	60	26.7	15	30	15	60	60
10 – Comstock	60	60	60	60	16.2	60	60	60	60	None
11 – Stadium	30	30	30	60	28.2	15	30	15	60	60
12 – Duke	60	None	60	None	10.2	60	None	60	None	None
13 – South Burdick	30	30	30	60	24.0	30	30	30	60	None
14 – West Main	30	30	30	60	29.0	15	30	15	60	60
15 – Paterson	30	30	30	60	37.5	15	30	15	60	60
16 – Lovell	30	30	30	60	44.6	15	30	15	60	60
21 – Solon Kendal Lafayette	30	30	30	30	61.2	15	30	15	30	60
26 – West Centre	60	60	60	60	8.5	60	60	60	60	None
27 – East Romence	60	60	60	60	5.7	60	60	60	60	None

Frequency investments should be prioritized based on route productivity. In this case those routes with the highest rate of passengers per in service hour should be targeted for higher frequencies.

Figure 31. Example of "Enhanced Bus" Station Elements (Source: Metro Transit, Minneapolis-Saint Paul, MN)

Station Platform Design

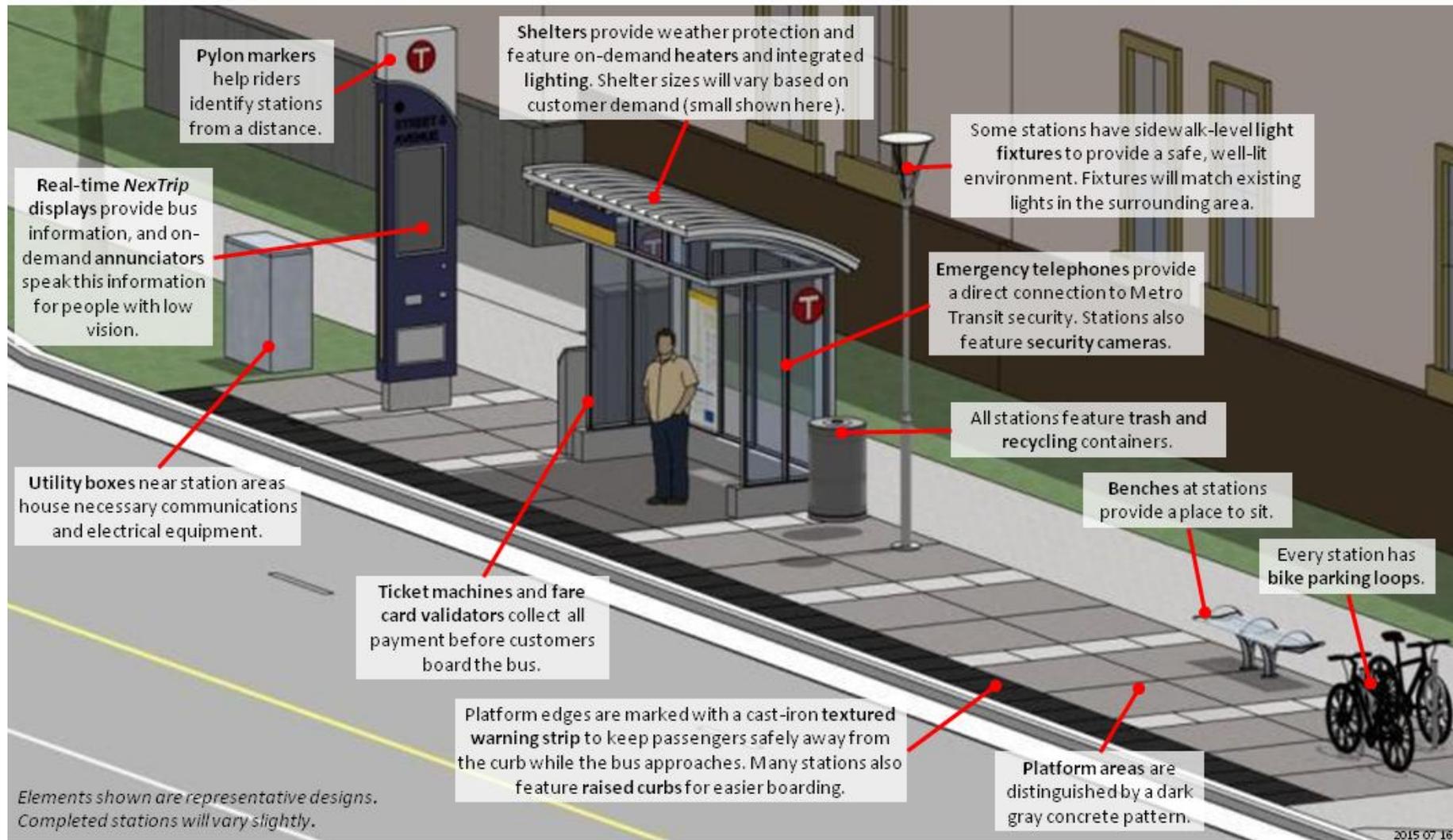


Figure 32. Transfer Point in Manitowoc, WI (Source: Maritime Metro Transit)



Figure 33. Transfer Facility with Park-and-Ride in Las Vegas, Nevada



Additional Cost Summary: Medium-Term Operations and Maintenance Recommendations

Item	Cost
Fully Developed High Frequency Network	\$3,870,000/year
Transit Corridor Pre-Project Development Analysis	\$250,000
Enhanced Bus Corridor Development	\$6,750,000

Infrastructure

VEHICLE FLEET MIX

As the transit system changes over time different types of vehicles may be added to the fleet beyond the standard heavy-duty transit bus. This may include medium-duty buses or articulated buses to operate on high capacity routes. The need for these vehicles is undetermined at the time of the plan draft, but should be a component of future transit plans and analyses.

SATELLITE TRANSFER POINT DESIGN AND CONSTRUCTION

If facility needs studies recommend the development of satellite transfer points they will be constructed during the medium-term time frame. The scale of these types of facilities varies widely. They can include staffed customer service areas, driver facilities, enclosed waiting areas, and electronic signage. However, they can also be more simple and utilitarian, featuring a shelter and bus bays. A satellite facility is estimated to have a construction cost in the range of \$500,000 – \$1,500,000. Examples are shown in Figures 32 and 33.

FAREBOX AND TECHNOLOGICAL UPGRADES

As equipment reaches the end of its useful life, and fare collection technology improves, the replacement of on vehicle and station equipment may need to occur in the 10-year time frame. Contactless fare media – smart cards – and smartphone payment systems are gradually becoming the industry standard for fare media. Depending on what equipment needs to be replaced and the technical capability of each system, the cost of farebox replacement ranges from \$2,200 - \$13,000 per vehicle, and can often be partially incorporated into vehicle specifications.

Additional Cost Summary: Medium-Term Infrastructure Recommendations

Item	Cost
Transfer Facility Final Design	\$75,000-\$250,000
Transfer Facility Construction	\$500,000 - \$1,500,000
Farebox Upgrade	\$2,200 - \$13,000 per vehicle

LONG-TERM RECOMMENDATIONS

In general, the long-term recommendations involve the continuation of policies and strategies that were established in earlier phases of the plan's implementation. Also, if resulting studies recommend the development of enhanced bus or fixed guideway transit

service in the Kalamazoo Region, this would be the time frame in which these parts of the system would be built out to complete the full development of the transit system. Performance monitoring, staff training and professional development, market research, and gradual service expansion are all incorporated into the realized vision. These are additional focus areas that may be addressed in the long term.

Planning

Long-term, Kalamazoo Metro Transit should continue to analyze the potential of connecting Kalamazoo to other cities in Southwest Michigan, and building partnerships with other transit agencies to connect people to jobs, education, and other activities. Additionally, express bus services that connect major employment centers with park-and-ride lots can broaden the reach of transit service. Park-and-rides can be shared facilities with shopping centers and churches, or constructed on excess right-of-way near major roadways.

Additionally, Kalamazoo Metro Transit can take a lead role in shaping development along major transit corridors. In many environments, the transit agency can act as a partner in real estate development and access FTA funding through Joint Development Programs and other types of public-private partnerships. This will likely require additional staffing and coordination with local planning agencies, and transit can be a catalyst for development on the northern edge of downtown Kalamazoo.

Administration and Management

Long-term, Kalamazoo Metro Transit will have a robust training program for new and existing staff, and manage route planning decisions based on tracking of performance measures. Senior level staff will be empowered to lead strategic initiatives, and carry forward the near/medium-term portions of the vision plan.

Operations and Maintenance

Future studies and plans such as operations analyses, transit development plans, feasibility studies, and corridor studies will inform future transit service decisions. Kalamazoo Metro Transit will continue to make progress on deploying a fully developed transit system with a network of high frequency routes and a span of service that meets a comprehensive set of needs. Additionally, enhanced bus services will be deployed strategically on some corridors, and the transit system will partner with local agencies on implementing traffic control/transit signal priority and new service projects.

Infrastructure

Capital investments will also reflect recommendations from future studies, and will include replacement and expansion vehicles, shelters, and facility upgrades. Additionally, enhanced bus features like signage, curb extensions, fare payment technology, roadway improvements, and signalization will be an important part of future infrastructure investments.

SUMMARY

The Kalamazoo Metro Transit Ten Year Vision Service Plan advance a set of guidelines for future investment and development of the transit system in Kalamazoo and its nearby communities. The recommendations serve to guide future investments in transit service and facilities, and promote organizational development of the agency. As part of the initial assessment of the transit system, the project team reviewed performance data, met with local stakeholders, and conducted field observations in partnership with Kalamazoo Metro Transit staff and management. Research indicated that the transit system performed well, but would benefit from investment in additional service hours, and strengthening of agency decision-making processes.

Many of the recommendations are strictly related to policies, and have little fiscal impact. These are associated with management related to performance measures, staff training and empowerment, and customer service. Recommendations related to

service, staff expansion, facilities, and the implementation of new outreach and marketing programs have a financial impact. The phases of the recommendations are divided in to four separate categories:

- Short-term fiscally constrained recommendations – Those recommendations that can be completed in the near-term with existing resources.
- Short-term recommendations – Recommendations reflecting the passage of the August 2015 transit millage district, and require little additional administrative capacity.
- Medium-term recommendations – Recommendations to be carried out in the 5-10 year time frame of plan implementation that require more administrative and financial coordination.

- Long-term recommendations – Recommendations to be carried out beyond 10 years that reflect the realized vision and a more fully developed transit system.

While this plan lays out recommendations in a logical order that takes into account current policies and operational development, circumstances related to funding or policy may change so that a longer-term recommendation may be ready in advance of its prescribed timeline. Agency management can always evaluate these items as appropriate. The following is a summary of financial impacts for items that are not cost-neutral. Table 4 (earlier in document) contains an exhaustive list of recommendations.

Recommendation	Operating and Maintenance Cost-Estimate (per year)	Planning/Capital Cost Estimate (one time)
Near-Term Recommendations		
Facility Feasibility Study		\$50,000 - \$150,000
Maintenance Assessment		\$25,000
Staffing	\$160,000	
Training Program	\$31,000	
Marketing	\$40,000	
Rebranding		\$50,000
Millage Plan Implementation	\$1,035,000	
Trippler Services	\$61,000	
Geographic Expansion	\$514,000	
Bus Stop Improvements		\$10,000-20,000
Used Buses		\$60,000 - \$120,000
Facility Needs Study		\$50,000 - \$100,000
NEAR-TERM TOTAL	\$1,841,000	\$245,000 - \$465,000
Medium-Term Recommendations		
Intercity Transit Study		\$50,000 - \$100,000
Comprehensive Operations Analysis		\$100,000 - \$250,000
Surveys and Market Research		\$35,000
Developed Route Network	\$3,870,000	
Transit Corridor Pre-Project Development		\$250,000
Enhanced Bus Corridor Development		\$6,750,000
Transfer Facility Final Design		\$75,000 - \$250,000
Transfer Facility Construction		\$500,000 - \$1,500,000
Farebox Upgrade		\$80,000 - \$475,000
MEDIUM-TERM TOTAL	\$3,870,000	\$7,840,000 - \$9,610,000

METRO **Ten Year Vision**
TRANSIT **Service Plan** 2015-2025

An illustration of a bus and a van. The bus is grey and the van is blue. Both are shown from a side profile, facing right. The bus is larger and has more windows, while the van is smaller and has fewer windows.

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