Wisconsin Department of Transportation

Transit System Management Performance Audit

of the

Madison Metro Transit System

FINAL REPORT:
EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

        The Wisconsin Department of Transportation (WisDOT) is required by Wisconsin Statutes to conduct a management performance audit of all urban transit systems receiving state aid at least once every five years. This report addresses the Management Performance Audit of the City of Madison Metro Transit.

        This is the fifth management performance audit of Metro Transit. Previous audits were conducted in 1987, 1993, 1999, and 2003.

        The Wisconsin Statutes indicate that the scope of the audit shall be determined by WisDOT in cooperation with the management of the transit system subject to the audit. The established scope for these audits consists of three major elements. The first element is the conduct of a peer group and trend analysis to determine the overall system effectiveness and operating efficiency. Second, the scope includes a review of the policy and decision-making process of the system in terms of its impact on system effectiveness and operating efficiency. The third element is a detailed review of each functional area involved in operating and administering a transit system.

        This report summarizes the results of each of these elements and highlights overall findings and recommendations.

Peer Group and Trend Analysis

        The initial analysis task in this management performance audit is a comprehensive review of the operating efficiency and effectiveness of Metro Transit through the use of selected performance indicators. Three techniques were employed for this purpose, as follows:

- **Peer Group Analysis** - Compared the performance of Metro Transit with a group of transit systems of similar size and service characteristics from locations throughout the country.

- **Trend Line Analysis** - Defines Metro Transit's performance over a five-year period beginning with the previous review in 2003.

- **Combination Analysis** – Provides a synthesis of the two techniques.

        The peer group analysis conducted for this audit followed the same methodology of that used for the 2003 report. That is, two separate peer groups were used to analyze Metro Transit's performance in different measures. The two peer groups are comprised of the same transit systems used in the 2003 audit.

The first group included 11 systems with similar service level characteristics (i.e., hours and miles of service, and peak vehicles). The 11 systems that were selected are listed below. These systems also had overall expenses, passenger revenue and unlinked passenger trips levels similar to Metro Transit. However, among transit systems of this size, it was not possible to replicate the population and density characteristics of Metro Transit. This is due to the fact that Metro Transit provides a much higher level of service relative to the population that it serves than any of its peers.

To analyze the overall level of service provided by Metro Transit, eight transit systems were selected with service area populations similar to Metro Transit regardless of the size of the transit system (i.e., hours and miles of service, and peak vehicles). This group has been termed the Population Peer Group. The group with similar service levels has been termed the Service Level Peer Group. The Service Level Peer Group was the primary peer group used to review Metro Transit's performance.

- **Service Level Peer Group -** The 11 systems that comprised the Service Level Peer Group are listed below. This group was the primary group used to review Metro Transit's performance.

  - Capital District Transit Authority (CDTA) in Albany
  - Miami Valley Regional Transit Authority (RTA) in Dayton
  - Connecticut Transit (CT Transit) in Hartford
  - Indianapolis Public Transportation Corporation in Indianapolis
  - Metro Area Transit in Omaha
  - Rhode Island Public Transit Authority (RIPTA) in Providence
  - Rochester-Genesee Regional Transportation Authority (RTA) in Rochester
  - Spokane Transit Authority (STA) in Spokane
  - Central New York Regional Transportation Authority (Centro) in Syracuse
  - Pierce County Public Transportation Benefit Area (Pierce Transit) in Tacoma
  - Toledo Area Regional Transit Authority (TARTA) in Toledo

- **Population Peer Group -** The selected group of eight systems with service area populations similar to Metro Transit are listed below. This Population Peer Group was only used to evaluate Metro Transit' s performance for per capita measures.

  - Ann Arbor Transportation Authority in Ann Arbor
  - Berks Area Reading Transportation Authority in Reading
  - Cumberland-Dauphin-Harrisburg in Harrisburg
  - Erie Metropolitan Transit Authority in Erie
  - Fort Wayne Public Transportation Corporation in Fort Wayne
  - Knoxville Transportation Authority in Knoxville
  - StarTran in Lincoln
  - Transit Authority Lexington-Fayette Urban County Government in Lexington

Population Peer Group Results - Using the Population Peer Group that is similar to the population size served by Metro Transit, it was determined that Metro Transit provides a much higher level of service on a per capita basis compared to transit systems with similar service area populations. Highlights of the comparison include:

- The level of service provided by Metro Transit in terms of revenue miles and revenue hours provided on a per capita basis is approximately one and a half times higher than the peer average, while the number of peak vehicles operated by Metro Transit per 100,000 people is over two times higher than the peer average.

- Since Metro Transit provides a much higher level of service than the peer group, it is not surprising that Metro Transit exhibits the highest operating expenditures per capita compared to the peer group ($148.02 for Madison vs. $47.45 for the peer average). In response to this higher level of service, Metro Transit attains much higher utilization rates than its population peers. In fact, Metro Transit carries almost three times as many passengers per capita as the peer average.

In summary, Metro Transit provides a much higher level of service compared to the Population Peer Group. This higher level of service is attributed to the fact that Madison is home to the main campus of the University of Wisconsin, which has an enrollment of approximately 42,000 students, and is also the state capital of Wisconsin. The University of Wisconsin and the state offices located in the city, represent major transit generators. As a result, the residents of Madison expect a high level of service from Metro Transit and in turn, utilize the service at a much higher level than the peer group systems. This high ridership level on a per capita basis is indicative of a transit riding habit in the City of Madison.

Service Level Peer Group Analysis - Key findings from the peer group comparisons using the Service Level Peer Group are summarized below by the categories that were reviewed.

- **Transit Revenue Sources** - The most significant conclusion from the information included in the analysis is that Metro Transit relies more heavily than its peers on local and state, general revenue sources for its operating funding. Metro ranks 1 of 12 among the peers in terms of the percent of operating funding coming from local government general revenue funding. Metro Transit does not receive any funding from dedicated sources at the directly generated, local, or state level.

- **Financial and General & Administrative (G&A) Measures** - Metro Transit's performance in the financial and G&A areas is favorable. Metro Transit's costs on a per revenue mile and per revenue hour basis are similar to its peers, but the agency has a lower cost per passenger, a higher farebox recovery ratio, and exhibits lower G&A costs, and a lower number of G&A employees. Metro Transit's revenue per passenger in FY 2006 was $0.66 which was the lowest figure of the peer group and was 22.4 percent lower than the peer average of $0.85. Metro Transit's lower

revenue per passenger is attributed to the fact that the system offers Unlimited Ride Pass Agreements with several local institutions and major employers.

- **Transportation Performance** - Metro Transit spends a considerably higher share of its expenses compared with its peers on operations, and indicates that the agency is focused on providing the greatest amount of bus service possible. However, the provision of service might not be as efficient as the peer group based on the fact that Metro Transit has a below average vehicle hours per operating employee ratio.

- **Maintenance Performance** - Metro Transit's vehicle maintenance performance is generally favorable. The agency performed better than the peer average in the areas of spares ratio, fuel efficiency, and maintenance costs, and is comparable with the peer group in terms of maintenance workforce efficiency. Although Metro Transit's road call performance was similar to the peer average, this performance exhibited a significant decline from the 2003 performance review.

Service Level Peer Trend Analysis - The second analysis technique reviews Metro Transit's performance over time rather than a single "snapshot" as in the preceding peer group analysis. Many of the same indicators were used as those used in the peer group analysis.

- **Overall Trend** - Metro Transit provided about the same level of service in 2006 as it provided in 2002 in terms of revenue hours and peak vehicles. For revenue miles, the amount of service declined between 2002 and 2006. This period was used since 2006 was the most recent full year of data available for all of the peer systems at the time the peer group analysis was prepared. The peer group exhibited a slightly higher increase in service during the review period, with its operating costs increasing at higher rate compared to Metro Transit accordingly. Although Metro Transit's level of service stayed about the same during the review period, ridership on the transit system increased by 10.5 percent. The increase in ridership and average fare at Metro Transit resulted in a significant increase in revenue.

- **Financial and G&A Trends** - Metro Transit's performance in these measures is generally favorable. Cost per passenger and cost per peak vehicle were below the peer average, while an increase in passenger revenue at the agency resulted in a higher revenue per passenger figure and a better farebox recovery compared with the peer group. Although the peer group lowered administrative costs and reduced the administrative workforce as a percent of total costs and employees at a rate higher than Metro Transit during the review period, Metro Transit's G&A measures were still lower than the peer average at the end of 2006.

- **Transportation Performance Trends** - In terms of transportation efficiency, operations cost as a percent of total costs at Metro Transit increased by approximately six percent, while the peer average exhibited a very modest increase of 0.3 percent. Metro Transit continues to spend a larger portion of its total costs on placing service

on the street which has resulted in a positive trend in ridership and effectiveness during the review period.

- **Maintenance Performance Trends** - The maintenance trend performance at Metro Transit is generally favorable. Metro Transit exhibited an improving trend in the areas of maintenance staff productivity and maintenance costs, and was very similar to the peer average in terms of the spares ratio. Although the fuel efficiency of the Metro Transit bus fleet declined relative to the peer average, Metro Transit buses still attained better mileage in 2006 compared to the peer group. The one area where Metro Transit was clearly outperformed by the peer group was in the area of road call performance. The detailed review of Metro Transit's maintenance function conducted by study team as part of this audit found that this is most likely due to the fact that Metro Transit has numerous buses which have exceeded their economic useful life.

Service Level Peer Combination Analysis - This final technique combines the results of the peer group analysis and the trend analysis. The results of this combination approach are summarized below.

- **Financial and G&A Measures** - Metro Transit exhibited improving performance relative to the peer average in five of the eight measures. Metro Transit exhibited declining trends in both G&A measures and cost per revenue mile. However, Metro Transit's G&A measures still outperformed the peer group in 2006.

- **Transportation Performance Measures** - Metro Transit was above the peer average and improving relative to the peer group average in three of the four measures including passengers per revenue mile, passengers per revenue hour, and passengers per peak vehicle, and was above the peer average but declining in the area of passengers per total employee. However, Metro Transit still carried more passengers per employee compared to the peer average in 2006.

- **Maintenance Performance Measures** - Overall, Metro Transit was below or worse than the peer average in five of the seven maintenance measures, with three of these measures also exhibiting a declining trend relative to the peer group average. Only one measure (i.e., buses per maintenance employee) was above the peer average and showing an improving trend.

The results of the combination analysis indicate a mostly favorable performance by Metro Transit. Metro Transit exhibited above average and improving performance in 44 percent of the review areas, and was above the peer average in 16 of the 25 categories, or 64 percent. Of the nine areas with below average performance, five were in maintenance, three were in financial and G&A, and one was in transportation. Four categories, or 16 percent, were below the peer average and declining.

The Wisconsin Department of Transportation has six measures that it uses to evaluate the overall performance of its transit systems. These measures include farebox recovery, expense per passenger, expense per revenue hour, revenue hours per capita, passengers per capita, and passengers per revenue hour. As seen in Table 1, the performance of Metro Transit is very good compared with its peers in these six measures. The system outperforms the peer average in most measures and ranks as the best performing system in four of the six measures.

Table 1
Metro Transit Performance Relative to State Measures

Performance Measures	Ranking	Performance Relative To Peer Average
Farebox Recovery	7 of 12	1.7%
Expense per Passenger	1 of 12	-26.4%
Expense per Revenue Hour	7 of 12	2.0%
Revenue Hours per Capita	1 of 9	151.3%
Passengers per Capita	1 of 9	280.3%
Passengers per Revenue Hour	1 of 9	36.1%

Policy and Decision Making Process

Metro Transit is a division of the City of Madison, part of the Department of Transportation of the City of Madison created under Section 3.51 of the City of Madison Ordinances. Under the City Ordinance, the transit division is responsible for planning, developing, operating, maintaining, and coordinating the transit system and facilities of the City of Madison. The Transit Division is headed by Transit General Manager.

The overall policy direction for Metro Transit comes from two sources. In the Madison executive-legislative government relationship, the Common Council sets the policy while the Mayor has veto power that can be utilized to change or influence a policy decision.

The city also has a Transit and Parking Commission (TPC) which is the official public body to fulfill the function of transit commission per Section 66.943 of Wisconsin Statutes. The role of the Commission is to establish certain policies and make recommendations to the Common Council regarding policies on all transit and parking matters. Similar to other municipal utility commissions, the TPC has jurisdiction over the pricing and level of service of the utilities for which it is charged. Therefore, the TPC is responsible for establishing the fare structure and the level of service provided by Metro Transit.

The other participating body in the policy and decision making process for Metro Transit is the City of Madison Board of Estimates.

The city's policy and decision making process regarding Metro Transit is similar to other city functions. The Transit General Manager reports directly to the Mayor. The City has purchased the capital facilities, revenue equipment, office furniture and machinery, and other

major items used by Metro Transit through federal and state transit capital grants, with the local share provided by the city. The city also provides the necessary working capital for the operation of the system. Operating funds for Metro Transit come from a variety of sources including the City of Madison, City of Middleton, City of Fitchburg, Town of Madison, Village of Shorewood Hills, Dane County, the University of Wisconsin-Madison, Madison Area Technical College, Edgewood College, and the Madison Metropolitan School District, as well as from state and federal funding sources.

Overall, the various parties involved in the policy and decision making process perform the following roles:

- **Mayor:**

  - establishes overall administrative policy;
  - hires the Transit General Manager with approval of Common Council;
  - provides direction to the Transit General Manager;
  - directs the development of Metro Transit's annual operating budget;
  - reviews, through the office of the Comptroller, operating and capital budgets submitted by Metro Transit, and submits an Executive Budget for transit to Common Council for consideration; and
  - appoints members to the Transit and Parking Commission, subject to Common Council approval.

- **Common Council:**

  - reviews, amends, and approves annual budgets; and
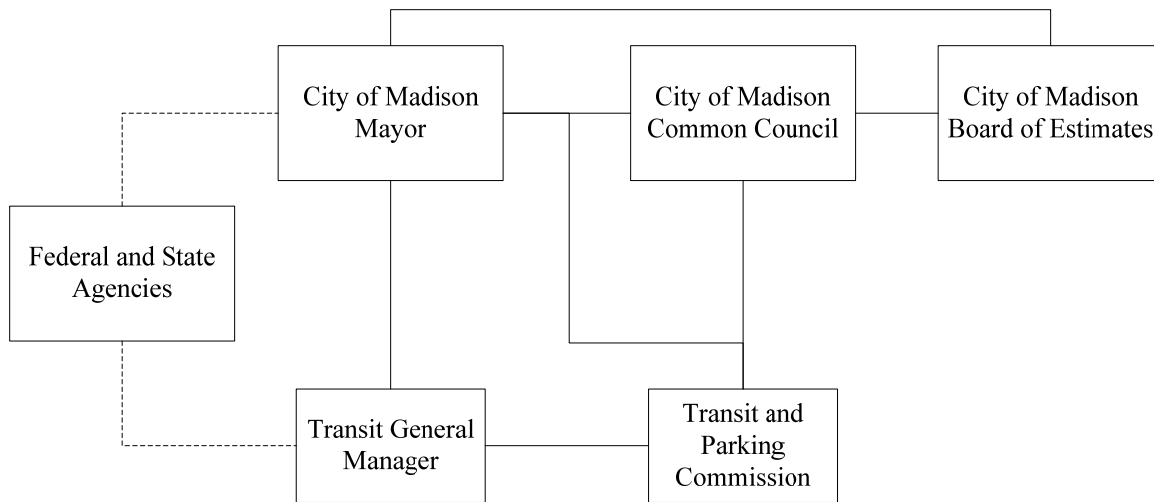 - reviews and acts on resolutions forwarded from the TPC.

- **Transit and Parking Commission:**

  - establishes fare and service level policy;
  - reviews and approves route and schedule changes;
  - considers policy matters including but not limited to service standards, performance plans, route and schedule changes, fare structure, capital acquisition and capital maintenance plans, marketing plans, and insurance programs; and
  - forwards Common Council resolutions, as appropriate, with recommendations for action.

- **City Board of Estimates:**

  - reviews and acts on resolutions having a bearing on transit operating or capital budgets, usually in advance of TPC review. Board of Estimates action and comments are attached to resolutions sent to Common Council; and

- reviews the Executive capital and operating budgets for transit, conducts hearings and makes recommendations to the full Common Council.

The overall arrangement in the City of Madison to direct and control Metro Transit is illustrated in Figure 1.

Figure 1
Metro Transit Policy Making Organization

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          ┌──────────────────┐   ┌──────────────────┐   ┌──────────────────┐
          │ City of Madison  │   │ City of Madison  │   │ City of Madison  │
          │      Mayor       │   │  Common Council  │   │ Board of Estimates│
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┌──────────────────┐     │                │
│ Federal and State│     │                │
│     Agencies     │     │                │
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          ┌──────────────────┐   ┌──────────────────┐
          │ Transit General  │   │   Transit and    │
          │     Manager      │   │     Parking      │
          │                  │   │   Commission     │
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Additionally, Metro Transit obtains some direct support from several other City Departments including Comptroller, Human Resources and Labor Relations, and City Engineer.

Overall, the relationship between the city officials and the staff at Metro Transit is excellent. Metro Transit is very responsive to the needs and requirements of the city and keeps the city well informed of current performance. Likewise, the support that is provided by city staff to Metro Transit is performed in a timely and efficient manner. No significant issues were mentioned regarding the current division of duties or the delivery of those services.

Members of the TPC expressed the opinion that they are provided with sufficient and timely information, allowing them to make informed policy decisions. In general, the current governance structure tends to function effectively. However, the current municipal statutes defining the role and authority of the TPC can result in a situation in which Metro Transit has an insufficient budget to address the policy decisions of the TPC.

This can occur when the TPC makes a decision that has an effect on Metro Transit's annual budget. This decision can be appealed to the Common Council which can vote to uphold the decision with a simple majority vote. However, if this vote is made outside of the annual

budget preparation process, a two-thirds vote of the council would be necessary to approve an amendment to Metro Transit's budget that would address the policy decision. If this vote fails, Metro Transit could have an insufficient budget to implement the policy. It would then be the responsibility of Metro Transit and the Mayor to determine how to fund the policy decision. It should also be noted that the TPC does not have the authority to reallocate funds in the Metro Transit budget to address its policy decisions.

Some of the coming challenges to the Metro Transit system mentioned by the participants in this review included the need to develop a strategic vision for transit in the city and region. Without such a vision, there is no consistent guidance for transit policy decision making. It was also noted that the funding required to maintain Metro Transit's current service structure and level will be a challenge in the coming years. It was also noted that the current funding mechanism used to support transit expansion into the suburban areas is not sustainable over the longer term.

Based on these findings, there are four recommendations that the City of Madison, the TPC, and Metro Transit should pursue:

- The TPC should be involved in the development of the annual budget prepared by Metro Transit staff under the guidelines provided by the Mayor before it is submitted to the Comptroller. This may allow the TPC to suggest changes that meet the Mayor's guidelines while forwarding other priorities of the Commission. The TPC should then act on any fare or service level changes in a way to allow their decisions to be reviewed by the Common Council as part of the budget process.

- The City of Madison should investigate changes to the statutes concerning the TPC to ensure that a situation does not arise in which a policy decision of the TPC which affects Metro Transit's budget is upheld by the Council, but the Council then does not approve the Metro Transit budget amendments necessary to implement the policy. One way would be to require all TPC actions regarding fare structure and service increases to be done as part of the annual budget process.

- The City of Madison should address the need to develop a strategic transit vision that can guide transit policy decision making. This would set forth such goals as what the city would like the transit system to look like and what the priorities of the transit system should be. If it is agreed that the Long Range Metro Transit Planning Ad Hoc Committee report provides such a vision, it should be used as an active policy guide.

- The City of Madison should continue to pursue and support state legislation allowing for the creation of a Regional Transit Authority (RTA). The creation of an RTA would address several of the issues discussed in this review. First, an RTA would be governed by a true transit board, which would have ultimate control and responsibility for addressing the budget implications of its policy decisions. Second the RTA structure with a dedicated funding source would allow for a more

sustainable funding structure for suburban services. A regional funding structure would also provide Metro Transit with a stable funding mechanism for its core service area. Lastly, the RTA model would provide a body that would be charged with developing a regional vision for transit and making decisions regarding transit resource allocations based on that regional vision.

Audit of Functional Areas

Metro Transit is headed by the Transit General Manager. Metro Transit's current organization chart includes five direct reports to the Transit General Manager (not including the Administrative Services Coordinator). These five direct reports include the: Transit Service Manager; Transit Finance Manager; Transit Marketing and Customer Service Manager; Transit Planning and Scheduling Manager; and the Transit Information Systems Coordinator.

The Transit Service Manager administers the largest department within Metro Transit. Direct reports to the Transit Service Manager include the Transit Operations Manager, Transit Maintenance Manager, Paratransit Programs Manager, and the Employee Relations Specialist.

The Metro Transit organization is relatively straightforward and there are no organizational issues that further review in this audit.

The organization structure of Metro Transit was used to identify the areas that would be addressed in the functional area review. The areas of the detailed review are listed below:

- Planning and Scheduling
- Maintenance
- Transit Operations
- Finance
- Personnel and Labor Relations
- Marketing and Customer Service
- Information Technology
- Parts
- Building and Grounds
- Safety Management and Security
- Paratransit Services

The recommendations resulting from the detailed review of the current policies and procedures followed in each of the above areas are provided below.

Summary of 2009 Audit Recommendations - This section includes all the recommendations from each review area. While the reviews and findings in most areas were favorable, a number of items were identified that could be a focus for further improvements.

Planning and Scheduling

- One of the more important recommendations is for Metro Transit to direct staff resources to get the APCs to function properly. Currently, the perceived inaccuracy of the APCs is minimizing their use. An analysis of the data provided by the APCs should be undertaken, with results from the units compared to manual ridership counts, so that the exact level of accuracy can be determined and related to what is reasonable and acceptable. Proper calibration of the units, and perhaps further training of their use by staff is required. Since other transit systems utilize APCs, there is no reason why Metro Transit cannot join this group of transit agencies that have benefited from this technology. The use of video cameras or time referencing the registering fareboxes is not viewed as cost effective replacement of the APC equipment. The data provided by the APC units along with the information provided by the registered fareboxes and the AVLs, can be invaluable for the planning process. Additionally, Metro Transit should consider purchasing APC units for all new vehicles once the current situation is rectified.

- The review of the Information Technology function recommended the completion of an information management plan. This information management plan should specify the way that data is collected from the various technologies and address its use in terms of storage, analysis and reporting method. The plan would also outline what information is used for in-house analysis and data that is provided to outside agencies, such as the Transit and Parking Commission. As noted in prior reviews, the level of detail and information presented would be less than that used by the planning staff for their internal use. It would be beneficial for Metro Transit to contact various outside agencies to solicit comments about their potential use of the gathered data.

- Staffing levels need to be increased to permit the gathering and analysis of data to better gauge the performance of existing bus routes and propose changes. It is suggested that one Planner and two technicians be added to the Planning unit. The relationship with the Information Technology (IT) unit seems to work well and any staffing plans should be made in coordination with IT. A review of staffing to address data systems was an element recommended as part of the information management plan.

- A specific set of goals and objectives along with an annual work plan should be specified for both planning and scheduling activities. The results of this review would suggest items to be included in the work plan.

- Currently, the focus of the Planning Unit is on monitoring the current bus system and developing short range proposals. As also noted in the Policy and Decision Making recommendations, Metro Transit needs to consider whether it wishes to pursue a more pro-active role with respect to mid range and long term transit proposals. This

decision would need to be made on the basis of technical and policy/institutional considerations as well as consistency with staffing levels. The mid term planning is performed by the MPO as part of the TDP process while long range planning is done by the MPO and Madison Planning Department as part of the rail feasibility analysis. It is recognized that additional moneys would be required in order for Metro Transit to begin planning on these two additional levels; however, the investment would produce a more coordinated approach and one where Metro Transit would more directly control its destiny.

- The TDP that is currently underway should be completed and include the same activities that were performed as part of the previous TDP. It should also respond to problems facing Metro Transit now and in the future. This includes such issues as increasing the system size to respond to ridership gains, inability to maintain cycle times and expansion of system coverage. While Metro Transit staff examines these items to some extent from a near term or tactical perspective, the TDP should include a strategic review for a five year horizon period. As part of this effort, fleet and facility needs should be addressed since the system appears to be approaching capacity of the current physical plant. Other relevant issues for exploration are the impacts of a Regional Transportation Authority and what would be an appropriate transit plan with an RTA.

- Metro Transit's Planning Unit should continue to monitor the use and effectiveness of the Transfer Point System and make timely adjustments as necessary. Furthermore and as mentioned in the previous review, the department should consider analyzing the system in one of two ways, either by studying a grouping of routes by geographical sector, or by looking at the system as a whole as changes to one sector may inversely affect another area due to the nature of a timed-transfer system.

- In addition to continued monitoring of the current system, Metro Transit should explore other service types which can complement the existing Transfer Point System. Potential service options include Bus Rapid Transit or elements of BRT in heavily utilized corridors. It is possible that short range proposals could be formulated that would represent start up improvements that include BRT features. Other possible service options that should be explored for use are flex routes, where vehicles can deviate from their routing to pick up passengers who request a pick-up or drop-off. Another program is ride request, where demand service connects people to the bus system.

- The Service Development Committee process is working well and should be continued. The active participation of senior management underscores the importance of the planning function. The previous management review suggested a six step process which should be followed as listed: (1) – problem statement and definition of the routes and study area; (2) – analysis of ridership, travel time and other data; (3) – identification of deficiencies and opportunities; (4) formulation of

alternatives; (5) – impact of preferred alternatives; and (6) – recommended plan. The Planning and Scheduling Unit would have responsibility for preparing an informal memorandum for each of the six analysis phases listed above.

The Planning Unit would shape the information and process in each of the steps above, which would be presented to the Service Development Committee for discussion and further guidance. As noted above, the Service Development Committee would be an appropriate forum for considering mid term and long range proposals should Metro Transit expand its role in this area. The selection of a recommended plan for any potential service change, regardless of magnitude, would be the responsibility of the Service Development Committee.

- The Service Evaluation and Performance Measurement Program, adopted since the previous study, provide a number of service measures which should be used to evaluate the performance of the operated routes. While standards were created for passengers per revenue hour, revenue miles and cost per ride, the only measure that is currently being employed by the Planning and Scheduling staff is passengers per revenue hour. Use of all of the standards within the Service Evaluation and Performance Measurement document should be used by Metro Transit so a better understanding of the current system and the system's performance by route can be attained.

  Additionally, other performance measures should be added to the document and used through a routine monitoring process. On-time performance, farebox recovery ratio and subsidy per passenger are among these other standards which should be considered for implementation. The objective of this recommendation is that the planning process consider several statistical measures, which – when combined with other quantitative and qualitative information, and agency policies and priorities – will assist with service decisions.

- Related to the above item, as well as with costing activities, is the method used to estimate costs. The Finance unit has established procedures that are used for service contracts, as well as service changes. Differences reflect incremental and fully allocated costs along with charges for capital expenditures in some instances. One common element of the costing methods is that they rely on the single unit of cost per hour. As with the previous review, the recommended approach for determining costs is to calibrate and apply a three-variable cost model. The model could be used for different purposes throughout the agency, but not necessarily for all cost purposes.

  To illustrate this approach, financial and operating statistics from the most recent NTD submission (FY 2007) have been inserted into a three-variable cost model shown below:

Development of Three Variable Cost Allocation Model

Variable	Allocated Amount	Operating Statistic	Unit Cost
Vehicle Hours	$21,545,100	407,600	$52.86
Vehicle Mile	$9,791,400	5,357,400	$1.83
Peak Vehicles	$4,862,800	167	$29118.56
Total	$36,199,300		

With this approach, the cost of service is determined by multiplying each of the three unit costs by the appropriate operating statistic and then summed. Different cost models could be obtained by whether fixed, variable or capital costs are included. The model above includes all operating costs. The benefit of this approach is that it reflects differences in operating speed and vehicle utilization.

Reflecting the different uses that costing procedures are applied, the recommendations are oriented to the intended audience. For example, existing contracts rely on a single unit cost per hour. Since this is relatively simple and accepted by the parties, no revisions for this costing purpose are suggested. For budgeting, elements of the three variable model are used already. In the area of estimating the cost of current service as part of monitoring or incremental cost with a change, the three variable method would be beneficial. In light of this intended in-house use, staff might try a limited demonstration program to cost out proposals and gauge the benefits of the suggested approach.

- A more formal approach to driver and operations feedback could be employed to acquire additional qualitative data. Currently, Metro Transit utilizes an "open door" policy when it comes to discussing issues and complaints from these groups of employees. A program developed around regular discussions with drivers and operators – perhaps once per month or quarterly - will create an environment where these employees will expect to be approached for their opinions on a regular basis, thus increasing the amount of qualitative data and create an inclusionary atmosphere and a sense of ownership for the drivers and operators. As with any such feedback mechanism, there should be a response to all suggestions.

- The Scheduling Unit is important to the operations of Metro Transit's bus system. There is currently no clear succession plan to replace the current Scheduler once the position becomes vacant. Metro Transit should create such a plan and provide training to assure continuity in the scheduling function.

- One way to improve the transition with new scheduling personnel is to purchase the latest version of the Trapeze software which includes an improved runcutting feature. This would eliminate the need for two version of Trapeze being used and custom written software. Further, it would improve the transition process.

- A scheduling timeline should be documented along with any other processes to assure an orderly succession plan.

- As suggested in the Planning section of this review, the current service standards outlined in the Service Evaluation and Performance Measurement Program should be expanded to include such metrics as on-time performance and farebox recovery ratio. The Scheduling Unit currently relies heavily on computed value of passengers per hour. The inclusion of other measures will afford additional refinement to the scheduling process.

- In accordance with the previously presented recommendation, the Scheduling Unit should increase its reliance on data collected through the available technologies. This is similar to what has been recommended for the Transit Operations Unit. The current usage of data received from registered fareboxes and the AVL system should be expanded with the APC equipment. Once the issues with the APC system have been fixed, the scheduling process should include an analysis of the data provided from this technology.

- A more formal process to receive comments from drivers and operations personnel should be implemented. The current "open door" policy is helpful, but a more formal process can produce additional benefits to the planning and scheduling function.

- A related issue to the previous recommendations, and as stated in the Planning section of this review, is the need for a data collection program which will allow the collection, archiving and analysis of data to occur in a more routine manner. This is related to the recommendation included in the review of Information Technology function which called for an information management planning effort to be undertaken.

- While it is recognized that Metro Transit does use Trapeze as an analytical tool, expanding these functions of the software will improve the efficiency of the scheduling process. Staff performed an analysis of implementing four, ten hour work days which led to its implementation. Using the scheduling software as analytical tool should be continued and expanded. This would include investigation of expanded use of part time drivers as well as the cost associated with runs that are more attractive to drivers. Clearly, the focus of the scheduling process should be on achieving efficient use of drivers and minimizing labor costs.

- The Scheduling Unit should continue to be an active participant of the Service Development Committee. The Scheduler should continue to monitor and refine the Transfer Point System in order to create more favorable service. Similarly, other service options, such as BRT service, express service, flex routes and demand responsive service, should be explored to complement the existing system.

Vehicle Maintenance

- Metro Transit should move forward with its plans to construct a new maintenance facility on site. The problem with the current complex has been noted in each of the past three performance audits.

- Metro Transit should address the problem of having a large number of ripped driver seats on its bus fleet. While not a major issue, ripped seats do hurt the overall appearance of the system.

- Metro Transit should investigate its performance in terms of the apparent large number of PM inspections that are performed early. While inspecting the bus before the inspection due mileage may be beneficial in that problems can be discovered more sooner, it can also increase costs unnecessarily.

- Metro Transit should attempt to meet its detailed interior bus cleaning goal of a detailed clean for each bus at least every six weeks. This would mean that two additional bus cleaners would need to be hired to increase the staff size of this group to four employees. With four employees doing two buses a day each, 40 buses can be cleaned in one week and 240 in six weeks.

Transit Operations

- Metro Transit should develop a specific program to monitor overall service quality. This program should establish target levels, data collection procedures, and analysis processes regarding the following:

  - On-Time Performance – Metro Transit does not have an adopted service performance guideline for on-time performance, and on-time performance information is not currently gathered, tracked, or analyzed.

  - Passenger Loads – Metro Transit does have adopted guidelines regarding overcrowding on its services, however, there are no procedures in place to systematically identify and respond to instances.

  - Schedule Adherence – This includes data regarding missed pull-outs and missed trips along with the reason for the miss (i.e., lack of equipment, insufficient staffing, accidents/incidents, operator error, etc.). Metro Transit also does not currently have adopted target levels for these measures.

  - Passenger Experience – Metro Transit should separately track complaints regarding the actual operation of service (i.e., on-time performance, missed trips, trips operated incorrectly).

- Safety – Metro Transit currently tracks the number of chargeable accidents that involve Metro vehicles. Metro Transit had also established a target of 93 chargeable accidents for 2008; which represented a 20 percent reduction from Metro Transit's 2007 performance in this measure. Metro Transit did not meet this target. However, rather than establishing a set number for overall chargeable accidents, Metro Transit should make use of tracking tools developed by its insurance carrier, Transit Mutual Insurance of Wisconsin. These tools can allow Metro Transit to identify trends in areas such as operators, locations, and situations, etc. Metro Transit can then develop annual targets for reducing the number of accidents resulting from the identified contributing factor through individual operator retraining, staff retraining, routing changes, etc. Metro Transit should also conduct a preventability judgment for all occurrences involving a vehicle, rather than considering certain occurrences as incidents rather than accidents. Metro Transit should also make use of any analysis assistance made available through Transit Mutual Insurance. Also, as more transit systems in Wisconsin use the same tracking tools, overall metrics can be identified to measure general performance (i.e., chargeable accidents per 100,000 miles).

- Security – Metro Transit should continue to keep detailed records of incidents regarding Metro employees or passengers. This information should be reviewed by the SMT with particular attention to incidents at the five transit centers.

To the greatest extent possible, this information should be collected through Metro Transit's mobile information technology (i.e., GPS/AVL and APC equipment). The information collected can be used by the Senior Management Team to determine the overall quality of Metro Transit service. In addition, Metro Transit's performance in comparison to established targets for these measures will provide valuable input to decisions regarding on-street supervision and control staffing levels.

- Metro Transit should formalize its quarterly meeting of Transit Operations Supervisory staff. Metro Transit should incorporate a "how did we do" component into these meetings by reviewing Metro Transit's response to any accidents that may have occurred during the quarter (i.e., how quickly was the incident responded to, how quickly was service restored, how much service was missed), or other disruptions such as major cultural events or weather incidents. Many transit systems with AVL and computer aided dispatch systems have used this equipment to recreate the situation being reviewed to facilitate discussion at these types of sessions.

- Metro Transit should continue its efforts to develop standard operating procedures manuals for operators and Transit Operations Supervisors. The manual for supervisors should specifically address line management techniques. This includes such areas as:

  - Detours

- Switching and short-routing buses
- Trouble calls and bus changes

- Metro Transit should continue monitoring and responding to instances of Absent without Pay (AWOP) that require disciplinary action in accordance with the contract. Metro Transit should also continue its policy of assigning a specific Transit Operations Supervisor to each Worker's Compensation (IOD) case among Transit Operators. Metro Transit should also continue participating in the city's case management committee.

- Metro Transit currently fills vacant paratransit driver positions with the most senior fixed route driver who has applied. Paratransit service is much different than fixed route operations, and operators need different skills to be effective. It is recommended that Metro Transit closely monitor trends in turnover among paratransit drivers as well as operator's customer service habits with paratransit passengers. If either of these trends warrants concern, Metro Transit should consider adopting an application process for these positions that allows for the evaluation of applicant's compatibility with the duties of the position.

Finance

- An important budget issue from the current fiscal year relates to the process through which the most recent fare increase was handled. This issue was also addressed in the Policy and Decision Making Process element of this audit. The Policy and Decision Making analysis recommended that all decisions of the Transit and Parking Commission (TPC) which affect Metro Transit's budget should be made in a timely manner and within the timeframe of the city's annual budgeting process. While there are governance benefits to this recommendation, the ramifications to Metro Transit's budget must also be noted. In this instance, the time necessary for political resolution of the issues raised by the proposed fare increase exceeded the needs of the operating agency to begin to receive the additional expected revenue. This can create an unfunded portion of the annual budget.

- While Metro Transit develops a five-year capital plan, there is no specific program to develop an articulated, longer-range vision for the system as a whole. Metro Transit should use the capital planning process to guide an intermediate and long term strategic plan which would be supported by the capital plan. This strategic vision, in turn, could then be used to guide subsequent capital plans. This need for intermediate and longer term strategic planning was also recommended as part of the Planning and Scheduling functional review, as well as the Policy and Decision Making element of this audit.

- This review did not result in any particular current concerns related to Metro's revenue-handling. A previous management performance audit had included the

recommendation for a full security audit of revenue handling. Metro Transit has maintained the position that this is not necessary since there is no indication of any problems. Based on experience throughout the transit industry, it is recommended that Metro Transit develop a program for the ongoing review of this important, and unique, function. The annual CPA audit of Metro Transit could be an important input to this ongoing review program. While making no statement about Metro's veracity and effectiveness in processing and protecting its collected revenue, this is an area worthy of the highest level of vigilance in safeguarding the public's funds.

Personnel and Labor Relations

- It is the intention of Metro Transit to use the newly developed employee relations database to track all data regarding grievances. Data regarding the trend and result of grievances was requested as part of this audit and, while the information was available, the compilation was not convenient and readily accessible. The employee relations database should be designed in a way to allow for queries of the number of cases filed and the number advanced to each step. The database should also track the employee, supervisor, unit, and contract clause in question. The database should also allow for reports providing the number of grievances settled, withdrawn, and the number advanced to arbitration along with the result of arbitration (i.e., upheld or denied). Reports should be run from this database on a regular basis to identify any trends in terms of increased grievances from a particular unit. In addition, the database can be a valuable tool in preparation for contract negotiations. This tool will allow for the identification of any contract clauses which have resulted in an inordinate number of grievances. It could then be a goal of the negotiations to seek more definitive language in that particular clause in subsequent contracts.

- The contract between Metro Transit and the Teamsters Union Local 695 stipulates that part-time transit operators can only be assigned to service that is operated under contract with the School District. In addition, the contract provides a particular staffing level for part-time operators which cannot be exceeded. Typical practice in the transit industry is to stipulate a specified number or percent of allowable part time operators. It is also common to stipulate the maximum number of hours which part-time operators can work. However, most contracts do not limit the type of service to which these employees can be assigned. In future contract negotiations, Metro Transit should pursue more flexibility in the use of part-time transit operators, while maintaining limits on allowable staffing level and work hours.

- The contract also provides for premium wages for transit operators operating Sunday and evening service. While Sunday and overnight shift premiums are common in the transit industry for shop employees, these types of premiums are not common in the industry for transit operators. Longevity pay is an additional benefit of City of Madison employees which is not typical among the industry. While some transit

agencies stipulate longevity bonuses in their contracts, Metro Transit's is more generous than what is typically seen in the industry.

- Metro Transit should continue its efforts to implement the employee relations database and incorporate the tool into management procedures to the greatest extent possible.

- This review showed that Metro Transit is experiencing a lower rate of FMLA usage among its employees than is being seen at other transit agencies. This may be due to the availability of AWOP. As AWOP use is addressed, FMLA use among Metro Transit employees may begin to increase. Metro Transit, and the City of Madison, should consider addressing FMLA leave in the same manner as Worker's Compensation (IOD) cases. That is, a Metro Transit supervisor should be assigned to each case, along with a case worker from the City of Madison. These cases should then be discussed at the monthly case management meetings. Also, Metro Transit should ensure the collection of data necessary to gauge Metro Transit's experience with FMLA leave in comparison to other transit agencies. This would require the collection and tracking of data items including the percent of employees taking FMLA leave, median length of leave, total days of leave taken, or other appropriate measures. Metro Transit should then periodically compare its performance to industry or national usage rates provided by APTA, the Transit Labor Exchange, or other labor relations trade groups.

- Related to the above, Metro Transit should request data from the Human Resources Department on a regularly occurring frequency that would allow them to track the rate of non-FMLA AWOP used by Metro Transit employees in comparison to that of city employees overall.

Marketing and Customer Service

- It is imperative that Metro Transit develop and implement a more robust advertising and promotion program which includes TV, radio, and print elements. The current practice of relying on trade arrangements is not sustainable over the long term. Metro Transit should pursue additional appropriations for this purpose, as well as investigate new and alternative revenue sources to fund such a program. One potential source of revenue, which has been employed in other communities with significant U-Pass and employer pass programs, would be to dedicate a portion of the revenue from these sources specifically for advertising and promotion. This could possibly be used as a justification for rate increases among these pass programs.

  The Long Range Metro Transit Planning Ad Hoc Committee made a similar observation and suggested increasing the annual marketing budget to $500,000. The committee did note that this should not be done at the expense of service levels.

- Bus stop signs are currently installed and maintained by the City of Madison Traffic Engineering Department. The June 2008 Final Report issued by the Long-Range Metro Transit Planning Ad Hoc Committee noted that bus stop signs are installed at a 45 degree angle facing the street, since they are seen as an instrument to communicate to drivers that parking is prohibited in front of the stop. The ramification of this policy is that bus passengers cannot see the bus stop sign from the sidewalk. Another issue is that the Traffic Engineering Department must install these signs at the beginning of the parking prohibition zone, which is not always the same location as the actual bus stop. The Ad Hoc Committee recommended a program which would place adhesive stickers on the back of all bus stop signs identifying the location as a bus stop, along with instructions to bus passengers (i.e., "Board bus at corner"). It is recommended that Metro Transit advocate for this program and assume responsibility for implementation as part of the marketing and customer service function. It is also advisable that Metro Transit investigate the feasibility of assuming responsibility for signage designed to communicate to bus passengers, while leaving responsibility for signage which communicates to motorists with the Traffic Engineering Department.

- By spring 2009, Metro Transit will have the ability to record all calls received at the Customer Service Center (CSC). With the availability of this equipment, it is recommended that Metro Transit develop a program to review a random sample of calls for the purposes of ongoing training for the CSC staff as a whole. Also, Metro Transit should develop an individual annual review program for CSC Reps. As part of this program, a sample of calls fielded by that representative would be reviewed to assess the representative's customer service skills as well as the accuracy of the information being provided to callers.

- Metro Transit does not currently track call volume by call type on an automated basis. This information is collected manually through reviewing sample days of activity for the CSC. As a part of this data collection, it is also recommended that Metro Transit calculate the average length of calls by call type. This data would allow for more accurate calculations of impacts to CSC staffing as a result of changes to the fixed route system or paratransit program.

- Metro Transit currently relies primarily on customer feedback for market research purposes. One of Metro Transit's market research goals is to conduct a comprehensive on-board rider survey once every five years. The most recent comprehensive survey efforts were conducted at an interval of eight years. It is recommended that Metro Transit adhere to its goal of conducting a comprehensive system-wide survey every five years. This would suggest that the next such survey effort would be conducted in 2013. It would be advisable for Metro Transit to make more extensive use of focus groups to understand the effectiveness of its advertising materials and the utility of new on-line and mobile tools. The Long Range Metro Transit Planning Ad Hoc Committee made a similar recommendation, specifically identifying focus groups or targeted surveys designed to elicit information from:

- current customers through on-board surveys;
- core Madison service area riders and non-riders; and
- new areas for potential growth.

- Metro Transit does not currently have a procedure for following up on customer complaint files that remain open beyond the 90 day period. It is recommended that this become an item which is routinely reviewed by the Customer Service Group.

- Metro Transit has a valuable service planning tool in the Trip Planner utility of the website. Important data is collected in that riders and potential riders enter information regarding desired trips (i.e., origin, destination, as well as time and day of travel). Metro Transit should develop procedures to extract this data and assemble it into a database that can be queried or mapped for service planning purposes.

Information Technology

- It appears the Metro staff is expecting an unnecessary level of accuracy from APC equipment. The level of expected accuracy provided by the manufacturer should be assumed when using the data. Data should be reviewed for anamolies and anomalies should be discarded, however, not at the expense of all data collected by the APC equipment. Metro should utilize its maintenance contract to determine a calibration schedule to ensure that all equipment is properly calibrated. Staff concerns with APC equipment seem overly exacting. APC equipment APC's are being used by several transit properties throughout the country It is recommended that Metro come to consensus on the role that APCs will play in Metro Transit's operations, and if it is not expanded upon, that a suitable alternative be implemented.

- From an asset management standpoint, the fare collection infrastructure is in need of replacement. It is recommended that a program be developed to replace this equipment.

- As Metro Transit continues to expand on its existing systems and the ITEAM continues its role in identifying and implementing significant IT projects, it is recommended that a formal implementation plan be developed for planned and future projects. The need to have documented operating procedures becomes increasingly important as Metro Transit's operations become more systematic.

- It was not indicated during interviews for this review that existing staffing levels and IT background were insufficient to meet the needs of new systems. However, given the ambitious program planned for this function, the large number of existing systems that the IT department supports, as well as the added data management needs resulting from initiatives such as the video cameras, it is recommended that Metro undertake a detailed staffing level review for this function.

Metro Transit staff expressed the need for significant post-processing of data collected by the APC and GPS/AVL equipment. This is not unique to Metro Transit. Many systems that have implemented this technology have found that they do not have the staff resources for effective post processing. Various systems have created positions in their IT or Planning departments specifically dedicated to post processing, manipulation, and reporting of this data. The APC and GPS/AVL systems are significant capital assets for Metro Transit which can have a significant benefit to operations management and planning. However, without proper staffing resources, Metro Transit cannot realize the full benefit of the tools.

- Based on the above recommendations, as well as recommendations included in the Transit Operations, and Planning and Scheduling reviews, it is recommended that Metro Transit pursue the completion of an Information Management Study that addresses the following issues:

  - Information technology staffing needs;
  - Actions necessary to improve reliability of mobile information technology to desired levels; and
  - Business processes designed to incorporate data collected through mobile information technology into planning and management decision making.

Parts

- Update the current computer system to addresses certain improvements such a establishing a formal cycle count program and bar coding.

- As part of the new facility construction project, emphasis should be placed on better security and access control to the parts room. Also, an effort should be made to centralize the bus parts now found in four or five different places into one or two.

Building and Grounds

- The computerized Buildings and Grounds (B&G) recordkeeping system should be used to track and analyze expenditures on outside contractors. This information should then be used for costing analysis and decision making regarding in-house B&G staffing and the use of outside contractors. For example, after reviewing the amount spent annually on outside electrical contractors, Metro Transit may find it more economical to hire an electrician as part of the in-house staff to perform this type of work. During down-time, this person could also perform other functions that are not related to electrician work.

Safety Management and Security

- Similar to the previous audit, a "feedback" and review process should be undertaken to ensure the effectiveness of training activities.

- A review should be conducted of shop safety procedures. These should be standardized, reviewed, committed to written form and properly communicated, disseminated, controlled and updated.

- While Metro deserves credit for creating the Security and Emergency Response Plan, as noted in the previous audit, Metro should take steps to develop a true Safety and Security Program Plan as advised by the FTA. It appears as if Metro is doing many things correctly in this area however the Plan will help tie together the numerous related efforts and activities currently underway or planned. The plan should contain the following elements:

  - Responsibility and authority for preparation, implementation and maintaining the plan
  - The primary goal of the program
  - An overview of the agency, its structure and the services it provides
  - An overview of the current security program
  - Summaries of current security conditions and report
  - An outline of employee safety and security responsibilities across the organization and succession structure.
  - Threat and vulnerability identification, assessment and resolution procedures
  - Emergency contingency service planning
  - Process for modifying the plan

- A true program of public security awareness should be ongoing. Metro should consider revamping, updating and reinstituting the program of rider security alerts.

- Consideration should be given for Metro Transit personnel to help plan and participate in Police and Fire Department live drills.

- It is useful for the City of Madison to track Metro's Worker's compensation expenses but consideration should be given to tracking the number and type of incidents. Metro operations staff have limited ability to affect the overall cost of Worker's Compensation incidents; that is more a matter for Worker's Compensation administration. However, they are likely to have a stronger ability to limit the number of incidents which occur and to look out for potential exposure and hazardous conditions.

Paratransit Service

- On-street supervision is critical to successful operations, customer satisfaction, and safety. Road supervisors do cover both fixed route and paratransit operations, yet Metro Plus currently relies more on the monitoring of performance data than on-street monitoring of its services in terms of ride checks and performance evaluation. Although budget limitations have been cited as the reason for reducing supervision since 2005, a greater emphasis should be placed on regular, on-street supervision of both directly-operated and contracted paratransit operations to conduct ride checks and verify service issues highlighted through regular data reporting.

- Previous FTA recommendations have noted the need for greater documentation of customer service calls to customers that may also be used to verify eligibility for ADA paratransit services. To date, Metro Plus does not explicitly call customers for the purpose of eligibility verification. While customer service calls are placed to gather feedback, greater effort should be made to use these calls as additional verification of eligibility rolls and they should be documented accordingly.

- Sections of the City of Madison website (and other public information materials) should feature the universal handicap icon for better visibility and customer association.

- Metro Plus Paratransit is not currently tracking the outcomes of registered customer complaints. For both customer service (i.e., providing responses to customers and following through on corrective actions) and internal monitoring of the effectiveness of complaint responses, Metro Plus should track these outcomes in the same database used to track and assign incoming complaints.

- As identified in the previous audit, increased travel training can help Metro encourage more ADA paratransit riders to use the fixed route bus system. The current Paratransit Schedule Coordinator has received training from the National Transit Institute to assist with eligibility certification and conduct more in-person reviews. Additional consideration should be given to providing travel training or seeking a qualified organization in the Madison area that can perform this service.

The recommendations listed above include all the recommendations developed as part of this performance audit. While numerous recommendations were developed, overall, the audit found Metro Transit to be a very efficient and effective organization. Further information on the functional area review, and the details of the rationale for the above recommendations, are contained in the functional area review sections of this report.