MEMPHIS AREA TRANSIT AUTHORITY

SHORT RANGE TRANSIT PLAN EXECUTIVE SUMMARY

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NELSON
NYGAARD

Table of Contents

List of Figures

APPENDICES

(AVAILABLE UNDER SEPARATE COVER)

Appendix A: MATA SRTP Summary of Public Outreach Activities

Appendix B: Service Guidelines and Standards

Appendix C: ADA and Trolley Service Analysis

Appendix D: Preferred Scenario Summary Document

EXECUTIVE SUMMARY

The Memphis Area Transit Authority (MATA) retained the consultant team of Nelson\Nygaard Consulting Associates, Kimley-Horn Associates and TRUST Marketing to develop a Short Range Transit Plan (SRTP). The objective of the SRTP was to conduct a detailed review of MATA's transit services, identify strengths and weaknesses in the existing system and develop a series of recommendations that correct weaknesses and strengthen assets. The planning process was designed to be as inclusive as possible, so that members of the riding and non-riding community in Memphis had ample opportunities to provide input and comment on the study process and findings. The SRTP process was designed around a series of five main work tasks:

- Preparing a needs assessment based on an inventory MATA services, evaluating regional socio-economic trends, assessing regional travel markets, and reviewing MATA's services against a set of peer transit agencies.
- Collecting ideas and suggestions from stakeholders, riders and members of the non-riding public and MATA drivers. The SRTP collected and reflected upon public input at all major stages of the effort.
- Conducting a detailed analysis of MATA's individual routes and services that considered ridership by stop and by time of day and relative service productivity.
- Using the collected data to develop, analyze and evaluate potential service improvement options.
- Developing final recommendations, including capital and funding needs

BACKGROUND

MATA is the largest transit agency in the State of Tennessee, transporting some 40,000 riders every day throughout Memphis and the surrounding areas. The agency was formed in 1975 to serve the Memphis metropolitan area and currently operates 34 numbered fixed-route bus routes, three rail trolley lines and a paratransit service for persons with disabilities.

MATA spends approximately $55-$60 million annually on operating expenses (including driver wages, fuel, vehicle maintenance and agency administration) and another $5-$10 million on capital costs (purchasing and maintaining transit vehicles and infrastructure). Funding for the system comes from a combination of federal, state and local sources. MATA's federal funds are largely provided by the Federal Transit Administration (FTA), distributed on a formula basis and account for about 20% of operating and 80% of capital costs. The State of Tennessee contributes about 15% of MATA's operating costs and 10% of capital costs. MATA's largest single source of funds is the City of Memphis, which provides between 40-45% of the operating costs of the

services and another 10% of the capital costs. The remaining 20% of operating costs are raised through passenger fares and advertisement revenues[1].

TRANSIT NEEDS ASSESSMENTS

Initial stages of the SRTP involved collecting ideas and input, and conducting analyses to determine the opportunities to strengthen and improve MATA's transit services. The needs assessment included a lot of ideas, which are broadly summarized in the following statements:

- MATA currently operates a very efficient service overall. It carries a high number of passengers per service mile and hour. Proposed changes should retain this strength.
- Downtown Memphis is MATA's strongest market for riders; this has historically been true and will continue to be true for the foreseeable future.
- There are emerging markets and communities in Memphis and Shelby County with a demonstrated need for transit service and/or areas that are becoming important employment and service markets. These communities are in southeast and northeast Memphis as well as the employment markets in suburban Shelby County.
- MATA as an agency has been shrinking in terms of both the number of service hours operated and the number of riders using the system. Funding is the primary culprit of MATA's negative growth rate, but learning from its peers, MATA may consider implementing new, higher speed services, such as Bus Rapid Transit (BRT) to attract new riders and resources to the system.
- MATA primarily serves a market of travelers that depend on bus service to travel. As a result, the bus route network needs to provide broad geographic coverage.
- Service reliability is a challenge for MATA. Service reliability is very important to riders and the existing network has a difficult time keeping buses on schedule. There are many reasons why bus service does not stay on time, such as traffic congestion, large numbers of boardings and alightings at some stops as well as having long and complicated routes.
- MATA's existing network is complicated. Routes could be simplified by making them straighter and more direct.
- There are not enough opportunities to travel north and south. This is true along primary corridors in the western end of town close to downtown Memphis, as well as in the eastern parts of Memphis and Shelby County.

[1] All funding percentages roughly reflect historical allocations based on MATA's fiscal year 2003 through 2009 budget documents. Funding programs from all sources are subject to change.

- Service would be strengthened by categorizing routes more clearly so that service levels can be better matched to demand.
- MATA current network includes several bus routes that operate on the same corridor and provide overlapping service that is competitive rather than complementary. This erodes the effectiveness of the bus network.

SERVICE SCENARIO DEVELOPMENT

Building on the needs assessment, the study team developed three alternatives for organizing MATA's bus network. Each option incorporated the system's ridership patterns, but did not directly consider the existing route structure. During the initial phases of developing scenarios, the study team also did not consider service costs or the number of available vehicles and instead, developed the best possible network. After the options were developed, however, the team estimated service hours and vehicle requirements, compared them with the available resources and scaled the network to work within MATA's existing budget. The three options are:

1. **"Pure" Grid System** – The pure grid option organizes MATA's bus routes according to a grid and assigns bus routes to the major north-south and east-west corridors in the City of Memphis as well as some parts of Shelby County. By operating along major corridors, passengers use the system similarly as a vehicle moves around town – a passenger travels along one corridor, gets off the bus at a major intersection and gets on a bus heading in a different direction. The strengths of the system are that it provides excellent service coverage, is easy to understand, and increases north-south connections. It is also fairly easy to increase or decrease service. However, for a grid system to be truly functional, the frequency of service must be high. Another challenge to the grid option is Memphis' road network; while some locations are laid out according to a grid, others are not.
2. **Transit Hubs and Centers** – The transit hubs and centers organizes MATA's bus routes around a series of transit hubs, such as the North End Terminal, Airways Transit Center and the American Way Transit Center plus a handful of "super stops" (locations where several bus routes converge). In this scenario, bus routes would be organized into a hierarchy with key corridor routes and also designed to provide fast and direct connections to and between transit hubs. The strength of the model is that it provides good service coverage, is easy to understand, improves north-south connections and most riders would still have direct access to a bus route. The disadvantage of this approach, however, is that some transit trips would not follow the most direct path possible (thereby increasing travel time) and the option requires capital investments in passenger and pedestrian amenities and facilities.

3. **Update/Modify Existing Network** – The third "modified network" option retains more of the existing bus network and would continue to configure MATA's service according to a radial design. Changes include adapting the current services to incorporate the key corridor service concept and improving service by increasing service levels and simplifying routes. The bus network would continue to rely on the North End Terminal, but to a lesser extent. Improvements would primarily be made on a route-by-route basis, largely by eliminating branches, straightening and simplifying routes, and reducing competition between routes. The advantages of the option are that it improves the network with less dramatic changes and thus would be easier to implement. The weaknesses are that it does not provide as much service coverage as the other options and is less effective at serving new and emerging markets.

SERVICE SCENARIO EVALUATION PROCESS

The study team and MATA staff were also tasked with evaluating the scenarios and determining which option, or combination of options, held the most promise for Memphis. The evaluation process involved a series of iterative steps, which included input and comment from stakeholders and members of the public, consideration of the impacts on other MATA services, such as MATA*plus*, and comment and input from MATA staff.

As a result of the evaluation, the Hubs and Centers concept emerged as the preferred option. Riders and members of the public generally preferred this option because they perceived it to offer greater coverage and create a clearer and more understandable service structure. Riders also preferred the way routes were structured in south Memphis, especially along the Winchester Road and Shelby Drive corridors. While the Hubs and Centers concept emerged as the preferred alternative, both members of the public and staff suggested several changes to the concept.

The study team shared and discussed the comments received with MATA staff and ultimately incorporated many of the comments into preferred alternative. These changes included strengthening service to southeast Memphis by increase service hours and re-routing some of the bus lines; eliminating the transfer on Route 40 (Stage Road); and adding a flex service to strengthen neighborhood services. The study team also made additional efforts to ensure the focus of the service design reflects the needs and desires of the transit dependent markets, incorporate more ideas about transit integration with bicycle and pedestrian infrastructure and provides support for riders at critical transfer locations.

PREFERRED ALTERNATIVE

The Preferred Alternative includes recommendations for a clear service hierarchy that would create a strong core set of services, or network 'backbone', and builds the rest of the network around the core network. The option also reduces redundancies in the network, provides a clear

and simple strategy for addressing service in south Memphis and strengthens the north-south connections. It also recommends eliminating most service branches, straightening routes, and scheduling services according to consistent headways. By simplifying the service, the preferred alternative also creates a structure that makes it easier for MATA to expand or contract services as budgets require.

In total the Preferred Alternative would create a network of 40 routes, seven more routes than operating in the current system. The new routes are primarily feeder and neighborhood (Flex) services that would be designed to connect people from neighborhoods to transit hubs and the key corridor network. Detail on the proposed network is documented in a map of weekday service and a table that shows the proposed service hours and frequency by day of the week. In general, the 40 routes are categorized according to:

- **Key Corridor Routes** – Eight routes (Jackson, Watkins, Chelsea, Poplar, Lamar, Elvis Presley, Third and Hollywood/East Parkway/Airways) were designed as key corridor routes. These routes will operate for 18 hours a day (roughly 5:00 am to 11:00 pm) on weekdays. During peak periods, buses will be scheduled to run with 15 or 20-minute frequencies and off-peak service would be scheduled so buses arrive every 30-40 minutes. The Key Corridor Routes would also operate seven days per week, although they would have shorter service spans on Saturday (roughly 5:00 AM to 8:00 PM) and Sunday (roughly 8:00 AM to 8:00 PM).
- **Emerging Key Corridor Routes** – Five routes (Thomas/Frayser, Summer/North Parkway, McLemore/Park, Mitchell and Winchester) are designated as emerging key corridor routes. While likely candidates to be in the key corridor route category, funding constraints and slightly less demand along these corridors mean these routes would operate with a reduced schedule. These routes would operate 17 hours a day (roughly 5:00 am to 10:00 pm) on weekdays with weekday peak period service frequencies of 20-30 minutes. Most of these routes would also be scheduled for operation on Saturday (approximately 6:00 AM to 6:00 PM) and Sunday (8:00 AM to 8:00 PM).
- **Mainline Routes** - There are 13 routes that are designated as "mainline" routes, inclusive of radial routes that connect to the North End Terminal and crosstown routes that connect to other MATA routes at transit hubs and/or super stops. These routes would generally operate for 13 hours per day (roughly 6:00 am to 7:00 pm) with 30 or 60-minute headways. Mainline routes, mostly but not entirely, operate on Saturday. With one exception (Route 40 Stage), they would not operate on Sundays.
- **Feeder Routes** – The network includes eight feeder routes that provide connections from neighborhoods and employment areas to the Airways and American Way Transit Centers, as well as newly-designated "super stops". The routes would operate on

weekdays only, with service available for roughly 12 hours a day between the hours of 6:30 am and 6:30 pm.

- **Express Routes** – There are four express routes included in the alternative (Wolfchase, Poplar, Walnut Grove and Getwell). The services are designed to offer three morning and three afternoon trips to meet the needs of commuters traveling from the outlying areas into Memphis, as well as commuters starting in downtown Memphis and traveling to suburban employment centers. Express routes would operate on weekdays only.
- **Flex Route Demonstration Project** – The alternative includes a flex route to be implemented as a pilot or demonstration project in the Whitehaven neighborhood of southwest Memphis. The Flex Route is intended to maintain a level of door-to-door type of service in this high-need community and provide connections to the key corridor transit routes. The Flex Route is designed to operate seven days per week, from 7:00 AM to 5:00 PM.
- **Airport Shuttle** – A shuttle service is recommended to connect the Airways and American Way Transit Centers with the Memphis International Airport and major employment centers in the vicinity of the airport. Anyone able to reach one of the transit hubs, therefore, would have access to the airport. The shuttle would operate daily for 18 hours a day (roughly 5:00 am to 11:00 pm) and be scheduled with departures every 20 minutes.

Figure ES-1 Preferred Alternative

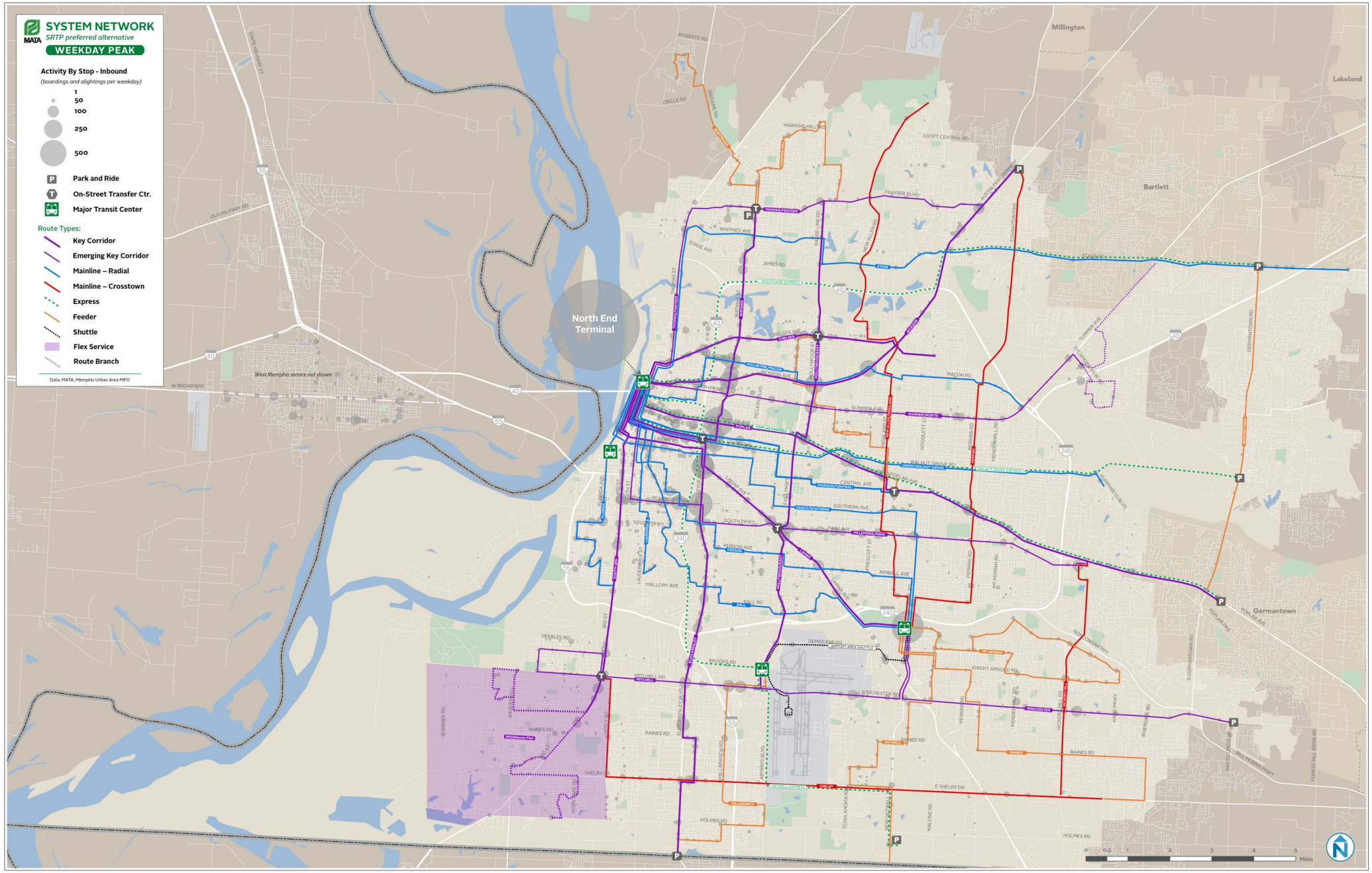

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Figure ES-2 Preferred Alternative Routes

Weekday Route	WEEKDAY Service Span Start	WEEKDAY Service Span End	WEEKDAY Headway (min) Peak	WEEKDAY Headway (min) Base	WEEKDAY Headway (min) Eve	SATURDAY Service Span Start	SATURDAY Service Span End	SATURDAY Headway (min) Base	SATURDAY Headway (min) Eve	SUNDAY Service Span Start	SUNDAY Service Span End	SUNDAY Headway (min)
Key Corridor Routes												
52 Jackson	5:00 AM	11:00 PM	15	35	60	5:00 AM	8:00 PM	35	35	8:00 AM	8:00 PM	35
10 Watkins	5:00 AM	11:00 PM	15	30	60	5:00 AM	8:00 PM	30	60	8:00 AM	8:00 PM	60
8 Chelsea	5:00 AM	11:00 PM	20	40	40	5:00 AM	8:00 PM	30	40	8:00 AM	8:00 PM	40
50 Poplar	5:00 AM	11:00 PM	15	30	70	5:00 AM	8:00 PM	35	60	8:00 AM	8:00 PM	35
56 Lamar	5:00 AM	11:00 PM	20	40	40	5:00 AM	8:00 PM	30	40	8:00 AM	8:00 PM	40
43 Elvis Presley	5:00 AM	11:00 PM	15	30	60	5:00 AM	8:00 PM	30	60	8:00 AM	8:00 PM	60
39 Third	5:00 AM	11:00 PM	20	30	60	5:00 AM	8:00 PM	35	60	8:00 AM	8:00 PM	60
32 Hollywood/East Parkway	5:00 AM	11:00 PM	15	30	60	5:00 AM	8:00 PM	30	60	8:00 AM	8:00 PM	60
Emerging Key Corridor Routes												
11 Thomas/Frayser	5:00 AM	10:00 PM	30	30	60	6:00 AM	6:00 PM	30	-	8:00 AM	8:00 PM	45
53 Summer/North Parkway	5:00 AM	10:00 PM	35	35	65	6:00 AM	6:00 PM	35	-	8:00 AM	8:00 PM	65
57 McLemore/Park	5:00 AM	10:00 PM	20	35	70	5:00 AM	7:00 PM	35	-	8:00 AM	8:00 PM	70
21 Mitchell	5:00 AM	10:00 PM	35	30	60	6:00 AM	6:00 PM	35	-	8:00 AM	8:00 PM	70
20 Winchester	5:00 AM	10:00 PM	35	60	60	6:00 AM	6:00 PM	60	-	8:00 AM	8:00 PM	91
Mainline Routes												
34 Union/Walnut Grove	6:00 AM	7:00 PM	30	60	-	6:00 AM	6:00 PM	60	-	-	-	-
13 Lauderdale	6:00 AM	7:00 PM	60	60	-	6:00 AM	6:00 PM	60	-	-	-	-
12 Florida	6:00 AM	7:00 PM	35	35	-	6:00 AM	6:00 PM	70	-	-	-	-
16 Madison/Central	6:00 AM	7:00 PM	35	35	-	-	-	-	-	-	-	-
35 Vance/Southern	6:00 AM	7:00 PM	60	60	-	-	-	-	-	-	-	-
38 Hickory Hill	6:00 AM	7:00 PM	30	60	-	6:00 AM	6:00 PM	60	-	-	-	-
40 Stage	6:00 AM	10:00 PM	60	90	90	5:00 AM	8:00 PM	90	-	9:00 AM	7:00 PM	90
7 Shelby	6:00 AM	11:00 PM	60	60	60	-	-	-	-	-	-	-
9 New Allen	6:00 AM	7:00 PM	60	60	-	-	-	-	-	-	-	-
19 Vollintine/Macon	6:00 AM	7:00 PM	60	60	-	6:00 AM	6:00 PM	60	-	-	-	-
4 Person	6:00 AM	7:00 PM	30	60	-	6:00 AM	6:00 PM	60	-	-	-	-
14 Ball	6:00 AM	10:00 PM	35	60	60	6:00 AM	6:00 PM	60	-	-	-	-
30 Perkins	6:00 AM	7:00 PM	30	60	-	6:00 AM	6:00 PM	60	-	-	-	-
Feeder Routes												
37 Johnson	6:30 AM	6:30 PM	60	60	-	-	-	-	-	-	-	-
6 Northhaven	6:30 AM	6:30 PM	60	60	-	-	-	-	-	-	-	-
18 Hawkins Mill	6:30 AM	6:30 PM	60	60	-	-	-	-	-	-	-	-
82 Germantown	6:30 AM	6:30 PM	60	60	-	-	-	-	-	-	-	-
25 Raines	6:30 AM	6:30 PM	60	60	-	-	-	-	-	-	-	-
29 Mt Moriah	6:30 AM	6:30 PM	60	60	-	-	-	-	-	-	-	-
26 Getwell	6:30 AM	6:30 PM	60	60	-	-	-	-	-	-	-	-
5 Millbranch	6:30 AM	6:30 PM	60	60	-	-	-	-	-	-	-	-
Express and Shuttle Routes												
500 Poplar Express	6:30 AM	6:30 PM	60	60	-	-	-	-	-	-	-	
64 Airport Area Shuttle	5:00 AM	11:00 PM	20	20	20	5:00 AM	8:00 PM	20	-	6:00 AM	6:00 PM	20
61 Wolfchase Express	2 trips in AM peak, 2 trips in PM peak					-	-	-	-	-	-	-
63 Walnut Grove Express	3 trips in AM peak, 3 trips in PM peak					-	-	-	-	-	-	-
62 Getwell Express	3 trips in AM peak, 3 trips in PM peak					-	-	-	-	-	-	-
Flex Routes												
F1 Whitehaven Flex Pilot	7:00 AM	5:00 PM	on-demand			7:00 AM	5:00 PM	on-demand		7:00 AM	5:00 PM	on-demand

Peak: the weekday AM and PM peak periods; Base: off-peak daytime service; Eve: service after 8:00 PM

SHORT RANGE TRANSIT PLAN

The SRTP developed a combination a high-level policy recommendations about how the bus services should be designed and operated as well as more practical and applied service improvement recommendations about the design and operation of individual bus routes.

The highest level policy recommendations developed as part of the SRTP are the agency mission and vision statements, agency goals, and performance measures. As part of the SRTP, MATA staff worked with the study team and Board of Commissioners to update these guiding principles; they were adopted by the MATA Board in 2011.

MATA'S MISSION STATEMENT

MATA's mission is to provide a reliable, safe, accessible, clean and customer-friendly public transportation system that meets the needs of the community.

MATA'S VISION STATEMENT

MATA will provide as efficient, effective, and innovative transit services as funding allows. We will operate transit services that are logical and practical, and by doing so, we will attract an increasing number of customers to our services. In addition, MATA services will support regional goals of improving access to places where people live, work, and play; reducing dependence on fossil fuels; improving air quality; and strengthening the area's livability.

MATA AGENCY GOALS

1. Increase ridership while maintaining service efficiency.
2. Operate reliable transportation services.
3. Sustain a customer-focused service environment.
4. Ensure a safe and clean environment, for both customers and employees.

MATA PERFORMANCE MEASURES

Following up on the agency goals, MATA staff and the Board of Commissioners agreed on a set of performance measures that reflect the agency goals, are fairly easily-measured and can be reported back to the Board on a regular basis. The performance measures by goal are:

1. Ridership/Service Efficiency
   - Average monthly transit boardings
   - Passengers per revenue hour (all modes)
2. Service Reliability/Service Quality
   - On-time performance (FR and MATA*plus*)
   - Vehicle miles between trouble calls

3. Customer Focus
   - Passenger complaints per 100,000 miles
   - Average customer call wait time
4. Safety and Security
   - Accidents per 100,000 miles
   - Preventable accidents per 100,000 miles

SERVICE GUIDELINES AND STANDARDS

The SRTP also included strengthening MATA's strategic framework for ongoing service planning and evaluation through development of service guidelines and standards. The guidelines provide a structure for service design generally as well as define appropriate levels of service, minimum levels of performance, service performance measures and guidelines on bus stop spacing and amenities. The guidelines are designed to provide flexibility and to respond to varied customer needs throughout the MATA service area. Adherence to the guidelines, however, is dependent upon resource availability, and in particular, the amounts of funding provided by MATA's local, state and federal partners. In the event of constrained resources, MATA will meet these guidelines as closely as possible and will work to achieve consistency as resources permit.

SUMMARY OF PREFERRED ALTERNATIVE

Through the Preferred Alternative, the SRTP process also developed recommendations re-organizing MATA's current radial service design into a model that is developed around a series of key corridor routes that connect at transit hubs, super stops and park and ride lots. The approach accomplishes several things including:

- Provides more and easier to use service to existing riders. Most of the riders and neighborhoods currently within ¼ mile of transit route will still be within ¼ mile of transit route. In addition, ridership is expected to increase by 15%.
- Simplifies system by straightening routes, eliminating route branches and scheduling service to operate with consistent headways.
- Organizes MATA fixed-route buses first around a clear hierarchy of services built around a core network of bus routes that offer fast and direct service between major locations. Secondary services provide less frequent, but important connections between neighborhoods and key destinations. Bus routes will also connect to a network of transit centers and hubs where passengers can transfer between routes and change direction of travel. The intent is to shorten travel times and reduce the need for passengers to travel into downtown.

- Opens new markets and starts to address gaps in the current service network, especially along the Winchester Road corridor as well as north south connections at the eastern end of the service area (i.e. Hickory Hill to Poplar Avenue and Stage Road to Poplar Avenue).
- Matches service types and levels to reflect demand:
  - Highest demand routes become Key Corridor Routes that create MATA's service "core". These trunk line routes provide the highest level of service and carry the most passengers.
  - Emerging Key Corridor Routes have slightly lower service levels as compared to the Key Corridor Routes; as funding becomes available service levels may be upgraded.
  - Mainline routes service neighborhoods and communities with lower density, but high need communities.
  - Feeder routes designed bring passengers to connect to a key corridor route and/or a transit center or hubs.
  - Express routes provide connections between downtown Memphis and major employers and/or employment centers. These routes will start to build 'choice' rider market.
  - Flex service serves low density neighborhoods that have high need for service. This type of service may be implemented as a demonstration project. The plan recommends southwest Memphis as potential demonstration site.
- Uses the Key Corridor Routes to create a framework for future development of Bus Rapid Transit (BRT) on highest ridership corridors.
- By developing transit centers and hubs, MATA will not only encourage use by making the system more comfortable and easy to use, improvements associated with the physical infrastructure will improve the pedestrian environment for all residents and increase MATA's physical presence in the community.
- The preferred scenario is also estimated to increase ridership by as much as 15% and by increasing ridership, lowers the average cost per rider.

SRTP FUNDING AND FINANCING

The SRTP was intentionally designed to work within MATA's available budget (in 2011) in terms of both operating and capital costs. There are, however, several considerations associated with the cost estimates and plan implementation.

Operating Costs

The fixed-route bus service improvements recommended as part of the SRTP were designed to work within MATA's available operating resources and provide about 410,000 annual service hours at an annual cost of approximately $36 million ($2011). This is in line with MATA's current expenses on fixed-route transit services, which includes approximately 417,000 annual service hours and costs approximately $36.7 million ($2011) annually to operate.

The analysis conducted as part of the SRTP included detailed analysis of each route with conservative operational assumptions (i.e. operating speeds and recovery time) that were reviewed with MATA staff. This level of effort was required to ensure that all proposals would work within the available resources. The analysis, however, remains a planning effort and implementation will require more detailed scheduling of the routes, run-cutting and compliance with provisions of the collective bargaining agreement. Therefore, the final costs of the proposal may change. If additional resources are available, they should be reinvested in the system according to some of the priorities outlined in the preferred alternative.

Other recommendations associated with the Preferred Alternative include making improvements to MATA's transit hubs, passenger amenities and park and ride lot infrastructure. Investments in these infrastructure will also increase MATA's operating costs because there are needs for additional staffing, maintenance, utility and security costs.

Capital Costs - Vehicles

Transit capital costs, as mentioned, include vehicle costs and maintenance as well as transit infrastructure. Similar to the example of operating costs, the SRTP preferred alternative was designed to work within MATA's existing fleet. The primary constraint is the number of vehicles needed to operate peak period service as this is the maximum amount of vehicles required at any one time. MATA's current operations have a peak vehicle requirement of 123 (as of September, 2011) and the proposed SRTP has a peak vehicle requirement of 119. Also similar to the analysis of operating costs, the peak vehicle requirement reflects a planning rather than operational exercise. Thus, although the estimate is based on sound analysis, there may be differences when the actual schedules are prepared and thus it is possible that full implementation will require more than 119 vehicles, but is unlikely to exceed 123 vehicles. The SRTP, therefore, is not expected to have additional vehicle requirements other than the normal replacement cycle accounted for in MATA's normal vehicle maintenance and replacement cycles.

Full implementation of the SRTP includes development of bus rapid transit service along some of Memphis' strongest corridors, Poplar Avenue and Elvis Presley Boulevard. Implementation of these projects, however, would likely require the acquisition of new vehicles to reflect demand for higher capacity and a higher level of service overall. These projects are likely to occur towards the

end of the five-year planning horizon covered in the SRTP and are not specifically identified as part of this project.

Capital Costs – Infrastructure

The Preferred Alternative does, however, assume investment in MATA's passenger infrastructure to realize full implementation of the concept. Most of the proposed changes will center around MATA's existing resources - the North End Terminal and Airways and American Way Transit Centers; staffing these facilities for longer hours, for example, requires an additional $105,500 annually. There will also be additional costs associated investments in the super stops and park and ride lots, such as increased maintenance, utility needs and security.

The SRTP also calls for considerable improvements in passenger amenities system wide and to the broader pedestrian environment in Memphis and Shelby County. Funding for passenger amenities, such as additional shelters and benches, are the responsibility of MATA. Improvements to the pedestrian environment (i.e. crosswalks and sidewalks) are best funded by individual municipalities as part of ongoing efforts to improve community livability and walkability. The study team does, however, recommend that MATA work closely with partner municipalities to communicate the importance of these projects, help prioritize particular locations and link infrastructure and transit improvements.

The proposed infrastructure improvements are recommended as part of full implementation of the SRTP recommendations. The cost for the investments is estimated at between $3 million and $9 million and includes improvements at 29 locations. Prioritization and implementation for these improvements needs to be negotiated with the City of Memphis and other municipalities. Costs may also be shared between multiple partners.

FIVE YEAR IMPLEMENTATION PLAN

Implementation of the SRTP and the preferred alternative is designed to be achievable over a five-year period (see Figure ES-3), allowing the first two to three years to focus on final service planning and scheduling and implementation, including adjustments and refinements to the routes. The final years of the implementation period should focus on service expansion and implementation of bus rapid transit service. As discussed, the capital elements of the preferred alternative are essential to its success. Meeting the proposed implementation schedule assumes work on these projects begins in the immediate term.

Figure ES-3 Five Year Implementation Plan

	Operating Projects	Capital Projects
Year 1	▪ Reschedule service to accommodate Preferred Alternative concept (may be implemented over 2-3 service change periods) ▪ Monitor route performance and make adjustments as necessary ▪ Explore partnerships to share airport shuttle costs (FedEx and Memphis International Airport) ▪ Engage University of Memphis and other local colleges and universities regarding new University Pass program ▪ Plan and hold public outreach campaign to educate riders about service changes	▪ Identify grant funds to support site planning and implementation for proposed super stops and park-and-ride lots. Improvements include pedestrian intersection improvements, expanded shelter facilities, information kiosks and lighting. ▪ Identify potential locations/suitable facilities for park and ride locations ▪ Work with University of Memphis to site on-street transfer location
Year 2	▪ Reschedule service to accommodate Preferred Alternative concept (may be implemented over 2-3 service change periods) ▪ Monitor route performance and make adjustments as necessary ▪ Introduce Express services ▪ Introduce Flex service ▪ Public outreach including "how to use Flex service" brochure – mail to homes within southwest Memphis Flex zone ▪ Initiate planning for BRT corridors — develop BRT Strategic Plan which outlines vision and implementation plan for BRT services in Memphis	▪ Begin on-street transfer location capital improvements ▪ Secure agreements to use park-and-ride surface parking facilities ▪ Begin BRT capital planning
Year 3	▪ Route changes complete, but may require some minor adjustments based on schedules and experience ▪ Develop ongoing service performance evaluation process	▪ Continue work towards on-street transfer location capital improvements ▪ Secure agreements to use park-and-ride surface parking facilities
Year 4	▪ Increase span of service and frequency on Emerging Key Corridor Routes to match service standards ▪ Continue BRT planning — inventory and plan for station improvements along Poplar Avenue, and Elvis Presley Boulevard; apply for grant funding for capital improvements	▪ Full implementation of on-street transfer location capital improvements
Year 5	▪ Begin implementation of BRT service	▪ Begin implementation of BRT service