TRANSIT STRATEGIES
EXPRESS BUS

Express bus services provide fast service over long distances, and are typically designed to transport suburban workers to downtown jobs. Transit systems in most major urban areas provide express bus service as a complement to their local services. In Middle Tennessee, both MTA and RTA provide express bus service.

COMMON FEATURES OF EXPRESS BUS SERVICE

Common features of express bus service include:

- **Moderate to long-distance service,** often 10 to 30 miles.
- **Very limited stops,** often only one or two at the outer ends of the route, as well as limited stops in downtowns.
- **Rush hour only service;** in cases where midday and/or evening service is provided, it is usually limited.
- **A primary focus on suburb-to-downtown service,** although occasionally service to other markets.
- **Service with commuter, or "over-the-road," coaches** that are the same as those used by intercity bus operators instead of standard transit buses.
- **Primary access via automobile,** especially for suburban to downtown services.

MODERATE TO LONG-DISTANCE SERVICE

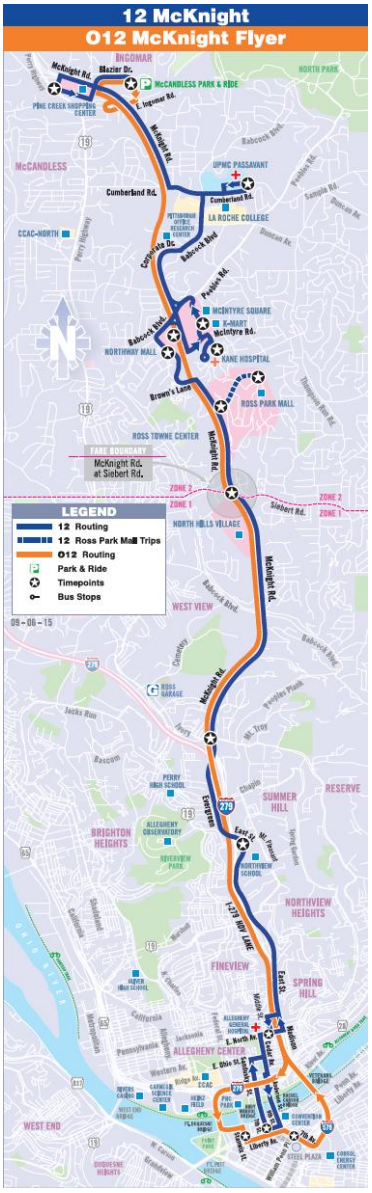
For short- to medium-length trips, most transit agencies provide local or limited stop services (including Rapid Bus and Bus Rapid Transit [BRT]). This is because even with many stops, total travel times are reasonably short. However, for longer transit routes, service to many stops can make travel times unacceptably long. Providing express service is one way to ensure acceptable travel times over moderate to long distances.

VERY LIMITED STOPS

A major focus of express services is to provide faster service. Since stops are the major reason that transit service is slower than automobile travel, limiting the number of stops is a key way to make service faster. Many express services, including those in Middle Tennessee, have only one or two stops at their outer ends and only limited stops in downtown.

Service to limited stops is also because express routes usually serve markets where there is very little demand for travel between intermediate locations. However, in cases where there is demand for travel to intermediate locations, complementary local services are provided that serve intermediate stops. This is generally the model used in the Pittsburgh area, where there are many corridors with strong downtown commuter demand and high volumes of travel between intermediate locations. In these cases, local routes serve the shorter trips and express routes serve the longer trips to and from downtown. In Middle Tennessee, an example of this concept is the Murfreesboro corridor where both express and limited stop service is provided.

PITTSBURGH EXPRESS PLUS LOCAL SERVICE



SUBURB-TO-DOWNTOWN SERVICE

Most express services are designed to transport workers from where they live to where they work. Since relatively high volumes of commuters are needed to support express bus service, the largest markets are typically from large suburbs to downtown areas. However, there can also be non-downtown markets that support express bus services. For example, in Fort Worth, TX, The T provides express bus service from the south of Fort Worth to Bell Helicopter on the eastern side of the city. In particular, large employment centers can attract this type of service.

RUSH HOUR ONLY SERVICE

Because relatively high volumes of commuters are needed to support express service, and because the highest volumes of commutes take place during traditional rush hours (approximately 6:00 to 9:00 a.m. and 3:00 to 6:00 p.m.), most express services are provided during those hours. However, in some markets, and especially in larger urban areas, there is sufficient demand for longer spans of service.

COMMUTER COACHES

Because express trips are long trips, a greater focus is placed on passenger comfort than is typical with local transit. While many transit systems provide express service with standard transit buses, others provide service with "over-the-road" coaches, the same type of vehicle used by intercity bus companies. These vehicles have more comfortable seats and a significantly better ride quality.

GRTA COMMUTER COACH (ATLANTA, GA)

The buses typically seat up to 55 passengers and feature:

- Comfortable seats that may include a folding table, armrests, and footrests
- Passenger service units with personal reading lights and air conditioning ducts that can be controlled and used by individual passengers with little disturbance to other passengers
- Onboard video
- Luggage racks
- Wifi

Georgia Regional Transportation Authority Xpress Services
Atlanta, GA

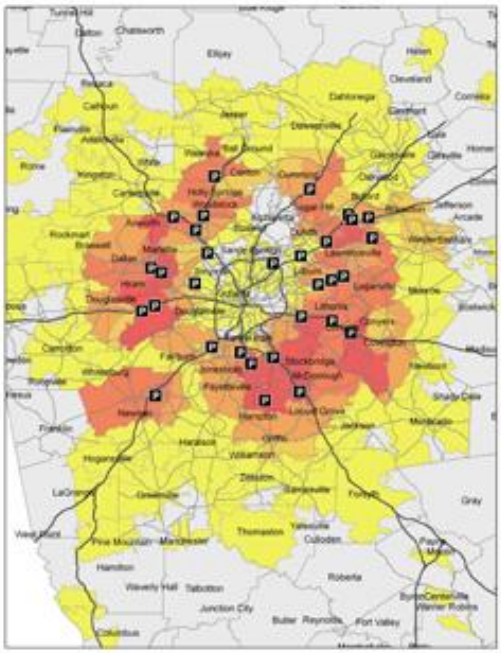
Xpress Commuter Coach Service

XPRESS SERVICE & STRATEGIC IMPACT

GRTA's role as a regional commuter transit provider began in 2004 with *Xpress*, provided through a partnership between the state and metro Atlanta counties. *Xpress* has since grown to become a key part of the region's transportation network.

Xpress provides a long distance commute alternative to single-occupant vehicles, thereby improving capacity on the state roadways. Regional commuter transit options such as *Xpress* increase the number of potential employees available within a 45 minute commute to major employment centers, helping drive economic growth.

Xpress draws ridership from nearly 40 counties.



FAST FACTS

- 33 routes served by 175 coaches
- 55 million passenger miles in FY2013
- 2 million passenger boardings in FY2013
- Amenities include bicycle racks, wheelchair accessibility, and free transfers to the MARTA rail system and bus networks
- Serves major employers in Downtown and Midtown Atlanta such as SunTrust, AT&T, Southern Company, Georgia Pacific, State Capitol, and three Federal Centers
- Operations are outsourced to the private sector

By **removing 1.5 million cars** from metro Atlanta's most congested roads, ***Xpress* saves all of the region's commuters more than $140 million** in wasted gas and productivity each year.

These savings, combined with low operations costs, ensure ***Xpress* delivers a more than 4-to-1 return on investment** for Georgia taxpayers.

ACCESS BY AUTOMOBILE

Express bus services typically focus on passengers who are spread out across suburban areas, so they rely on passengers getting themselves to one of the limited stops. For most, this means by private automobile; for this reason, park-and-ride lots are provided at most express bus stops. This is also the case in Middle Tennessee.

MINNEAPOLIS AREA PARK AND RIDE FACILITIES

REVERSE COMMUTE SERVICE

As described above, most express services operate only during peak periods. Furthermore, many of these operate only in the peak direction—inbound in the morning and outbound in the evening. This is because, in many markets, demand in the opposite direction is too low to warrant service.

However, in some areas, there are significant volumes of workers commuting from downtown and urban core areas to jobs in the suburbs. In these cases, many services do operate in both directions. Two markets for this type of service are Millennials who desire to live urban lifestyles but whose jobs are in the suburbs and lower income workers for whom the costs of car ownership are burdensome. Depending upon where the suburban jobs are located, some express routes operate in the same manner in both directions. In other cases they follow different inbound and outbound alignments.

BEST PRACTICES

While there are many "typical" ways to provide express bus services, there are also a number of best practices that will maximize ridership. These include:

- **Direct service that minimizes travel times**
- **Sufficient amount of service to provide passengers with flexibility**
- **Conveniently located park-and-ride lots**
- **Service with over-the-road coaches**
- **A seat for every passenger**
- **Guaranteed Ride Home program**

DIRECT SERVICE THAT MINIMIZES TRAVEL TIMES

All passengers prefer faster service to slower service, and faster service usually consists of routing buses along the most direct route. This means that routes should avoid meandering and backtracking, which they too often do to "maximize" service coverage. However, the longer travel times often discourage more passengers from using the bus than the greater service coverage attracts.

SUFFICIENT AMOUNT OF SERVICE TO PROVIDE PASSENGERS WITH FLEXIBILITY

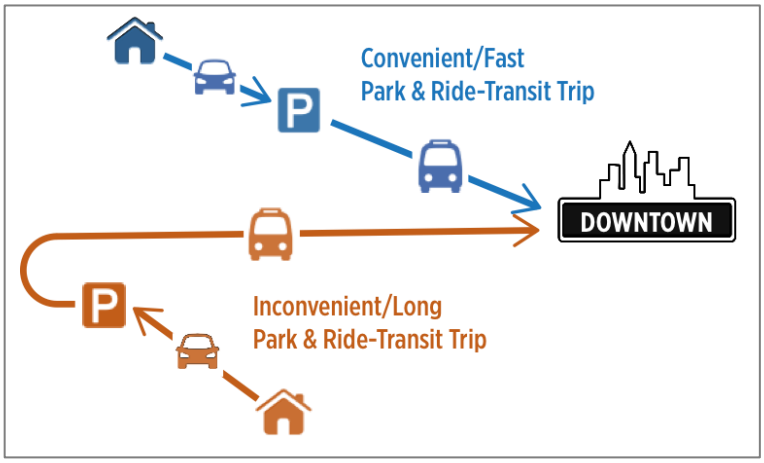
Few people's schedules remain constant from day to day. Even those who work fixed hours still need to arrive and leave early or late for various reasons. As a result, express routes that provide only one or two trips in the morning and afternoon do not provide the flexibility that many need, which then discourages ridership. In general, express routes should provide a minimum of three inbound and three outbound trips, and more where possible.

Service spans should also be long enough to serve different work schedules, with start times between 6:30 a.m. and 8:30 or 9:00 a.m. and end times between 3:30 p.m. and 6:00 p.m.

CONVENIENTLY LOCATED PARK-AND-RIDE LOTS

Frequently, and as is the case with most MTA and RTA express services, park-and-ride lots are located at places where a local business, church, or another organization has agreed to share use of their lots. In too many cases, these lots are not conveniently located and require riders to travel out of direction to reach them. To maximize ridership, park-and-ride lots should be located at places that reduce overall travel times for passengers, which means a location that is between their origin and destination. This often requires the development of purpose-built park-and-ride lots rather than shared locations. Park-and-ride lots can ultimately serve multiple modes of transportation and play a significant impact in lowering the number of single occupant vehicles on the roadway.

CONVENIENT AND INCONVENIENT EXPRESS BUS TRIPS

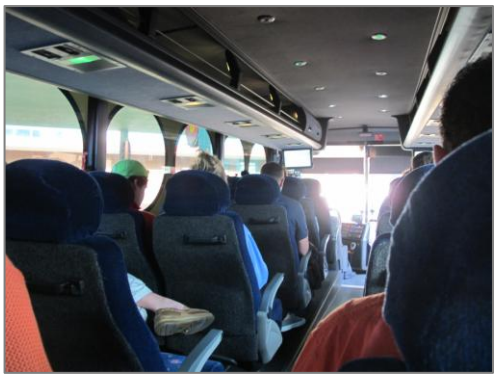


SERVICE WITH OVER-THE-ROAD COACHES

No matter how fast, express bus trips are usually long; thus, passenger comfort is at a premium. For this reason, much express bus service—including much of the express service provided by RTA—is provided with "over-the-road" coaches that are essentially the same as intercity buses.

MIDDLE TENNESSEE RTA OVER-THE-ROAD COACH

EXPRESS BUS INTERIOR



A SEAT FOR EVERY PASSENGER

Whereas local transit services often have standing riders, due to an emphasis on comfort and for safety reasons, express bus services are almost always designed to provide all passengers with a seat for their entire journey.

GUARANTEED RIDE HOME

Most express bus services only operate during peak periods, and emergencies occasionally arise that require people to get home earlier. To accommodate these situations, and to ensure that these concerns do not become a reason for people to forego using express bus services, many express bus operators provide guaranteed ride home programs that provide transportation in the case of emergencies.

RTA Emergency Ride Home Program
Nashville and Middle Tennessee

The Emergency Ride Home service provides free emergency rides home for registered commuters who travel in Davidson, Cheatham, Dickson, Maury, Montgomery, Robertson, Rutherford, Sumner, Williamson, or Wilson counties who cannot ride home with their normal carpool, vanpool, train, or express bus. Commuters must be pre-registered in the program and will receive a voucher for a taxi or rental car for transportation home.

To qualify, participants must share a ride to work with at least one other person an average of three times per week or 15 times a month. The service is expressly not intended to provide a ride home for activities that are known at least one day in advance. Specifically, you may use the service only for the following reasons:

- You or an immediate family member is sick or has an immediate need for your assistance
- You are asked to work late that day by your supervisor during the day
- Your regular driver cannot drive you because he or she has left unexpectedly or must unexpectedly work late

This service is specifically NOT intended to cover the following:

- Medical appointments made in advance
- Overtime when requested in advance
- Getting home during periods of bad weather, including sleet or snow

If you register for this service, RTA will pay for your trip home up to six times a year. You will be provided a taxicab or rental car. In either case, RTA will pay for the trip, including tip or gratuity to the taxicab driver. RTA will only honor vouchers used in accordance with the program; vouchers changed or used by someone other than the designated person will not be honored.

MEASURES TO MAKE SERVICE FASTER/FREEWAY BRT

Express bus riders are time sensitive, and faster service will attract more riders than slower service. There are a number of ways to provide travel time advantages to express bus service, which include:

1. Operating service in freeway shoulders (“Bus on Shoulder” operations).
2. Constructing stations within the freeway right-of-way to minimize or eliminate the local circulation that is required to serve stops or stations located outside of the freeway right-of-way.

These types of measures are described in the Freeway BRT transit strategy document.

BUS ON FREEWAY SHOULDER OPERATIONS (MINNEAPOLIS AND CHICAGO AREAS)

POTENTIAL WAYS TO IMPROVE EXPRESS BUS SERVICE IN MIDDLE TENNESSEE

There are a large number of potential ways to improve express service in Middle Tennessee.

PROVIDE MORE FLEXIBLE SERVICE

MTA and RTA commuter services—the Music City Star and express bus routes—typically provide only two to three trips in each direction that serve a short window of work hours. More service, including longer spans, would provide more riders with sufficient flexibility to make service convenient.

Longer spans will be particularly important. At the present time, MTA and RTA express routes operate with limited schedules designed for state employees who work early schedules. As a result, nearly all trips arrive in downtown Nashville before 7:30 a.m. and the last trips depart before 5:00 p.m. Consequently, most express bus riders are state employees, as service is effectively not available for those with more typical work schedules. Longer spans of service will be needed to serve a wider range of work schedules.

MAKE SERVICE FASTER

There are a number of ways to make service faster, which include:

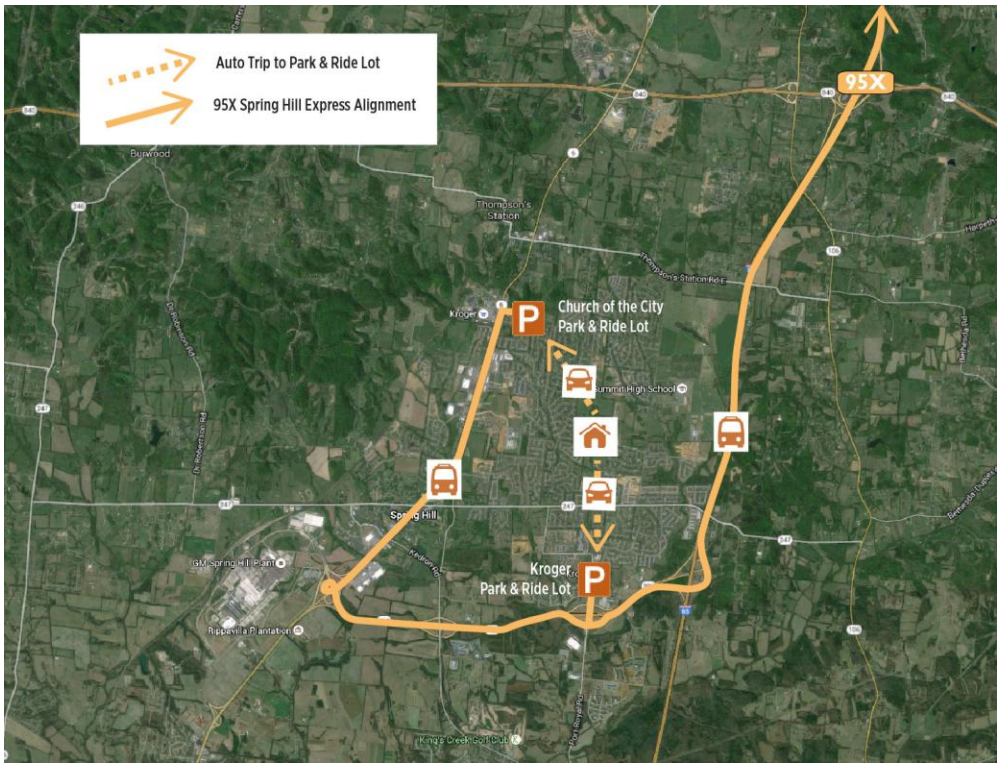
- Straightening indirect routes
- Developing more conveniently located park and ride lots
- Implementing bus on shoulder operations
- Developing stations along freeways and/or more efficient connections between freeways and park and ride lots (Freeway BRT).
- Streamlining transit operations in downtown Nashville (in conjunction with downtown service improvements for all routes.

MAKE SERVICE MORE DIRECT

A number of routes are indirect, either due to the overall design of the route or the need to travel relatively long distances to access park-and-ride lots. For example, in the Spring Hill area, which is served by Route 95X Spring Hill Express, most people live in an area bounded by Thompson's Station Road to the north, Route 6 to the west, Route

396 to the south, and I-65 to the east. As a result, residents must drive west and/or north to the Spring Hill Church of the City Park-and-Ride Lot and then ride the bus south and east for more than 15 minutes before heading north on I-65. Alternatively, they must drive up to four miles south to the Kroger park-and-ride lot to catch a northbound bus.

ROUTE 95X CIRCULATION AND PARK-AND-RIDE LOTS



IMPLEMENT BUS ON SHOULDER OPERATIONS

MTA and RTA could work with other Tennessee transit agencies and the Tennessee Department of Transportation (TDOT) to implement bus on shoulder operation for express routes. As in other states that have implemented bus on shoulder operations, the service can usually be implemented on existing facilities, with upgrades such as wider shoulders and bridge abutments implemented over time as freeways are upgraded. In the interim, express buses would operate on shoulders where possible and would continue to operate in mixed traffic where the shoulders and/or bridge abutments are not sufficiently wide. Bus on shoulder operations make service more reliable by providing the ability to navigate around congestion.

Pace Bus on Shoulder Service
Chicago, IL

Excerpts from Pace News Release: April 30, 2013

"We believed that if we could work with our partners at IDOT and the RTA to use the shoulders of I-55 for our express routes that on-time performance and travel times would improve, leading to increased ridership," said Pace Chairman of the Board Richard Kwasneski. "That's exactly what has happened, and with no negative impact on safety."

"Pace usage has been outstanding during the bus on shoulders project, and the Illinois Department of Transportation (IDOT) is thrilled to learn that strong demand for the expanded service indicates that ridership numbers should continue to rise," said Transportation Secretary Ann L. Schneider. "This is a win-win for riders and Pace."

Since shoulder operations began in mid-November 2011, ridership has grown significantly. In March 2011, Route 755 carried an average of 40 passengers per day. As of March 2013, that number leapt to 137 passengers per day, an increase of over 240%. Route 855 jumped from averaging 281 passengers per day in March 2011, to 451 per day in March 2013- an increase of over 61%. On-time performance for the routes improved from roughly 68% in 2011 to a range between 90-93% as of late 2012.

"The RTA is extremely pleased with the success of the Bus-on-Shoulder project," said RTA Chairman John S. Gates, Jr. "When the RTA began its work with Pace and IDOT on this project, we envisioned having a system that would not only provide efficiencies for riders but also be an environmentally-friendly transit service. We achieved that goal, enhancing each customer's experience."

"We modeled our program guidelines after similar bus on shoulder operations that have worked well in other regions and then worked with our partners to tailor these regulations for our area," said Kwasneski. "Were committed to safety for our passengers and the other vehicles on the highway, and that is reflected in an excellent safety record for these routes."

Buses are permitted to use only select sections of the I-55 shoulder when traffic flows at 35 miles per hour or less. Buses in the shoulder are limited to travelling 15 miles per hour faster than the flow of traffic with a maximum speed in the shoulder of 35 miles per hour. If a car has a breakdown or there is any other obstruction in the shoulder, the bus slows down, merges safely into the regular traffic lanes, then back into the shoulder once the obstruction is passed.

IMPLEMENT FREEWAY BRT MEASURES

In addition to bus on shoulder operations, MTA and RTA could implement Freeway BRT measures such as stations along freeways and interchange modifications to facilitate bus travel on and off of freeways. (These measures are described in more detail in the Freeway BRT strategy document.) These types of improvements would be particularly useful along I-24 and I-65 south.

I-35W MEDIAN STATION: MINNEAPOLIS, MN

STREAMLINE OPERATIONS IN DOWNTOWN NASHVILLE

Express buses are at their slowest when circulating in downtown and midtown Nashville. Improvement to downtown circulation for all transit, as described in the Better Downtown Transit Service strategy paper, would also speed express bus service.

DEVELOP MORE CONVENIENTLY LOCATED PARK-AND-RIDE LOTS

Related to making service faster, MTA and RTA could develop purpose-built park and ride lots in convenient locations that are along the most direct routes to Nashville. In most cases, these would be located along freeway interchanges. An example of this type of lot is the current Clarksville park-and-ride lot, which is located within the freeway right-of-way at Exit 8 on I-24 (this lot will soon be relocated to Exit 11).

CLARKSVILLE/ROSSVIEW ROAD PARK AND RIDE LOT IN I-24 RIGHT-OF-WAY AT EXIT 8

IMPROVE SIGNAGE AT EXISTING PARK AND RIDE LOTS

Many park-and-ride lots, especially those shared with local organizations, provide no indication that they are park-and-ride lots, nor do they provide any information on available services. This makes it difficult for people to learn that transit services are available, and for first time riders to find the lot. Better signage and information needs to be provided to make park-and-ride lots more visible and service easier to use.

USE OVER-THE-ROAD COACHES ON ALL ROUTES

At the present time, express services that are operated by Gray Line use over-the-road coaches. Many of the express routes operated directly by MTA (for both MTA and RTA express services) use standard transit buses. MTA does use over-the-road coaches for the RTA southeast corridor services, with the exception of the Route 96X. For those services using standard buses, service could be made more comfortable and more attractive through the use of over-the-road coaches on all express routes.