

SCENARIOS DETAILS: EXPAND SERVICE TO NEW AREAS

EXPRESS AND REVERSE COMMUTE SERVICES

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 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.



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

Additional information about express service and strategies to improve regional service is provided in the Transit Strategies series of documents:

- Express Bus Service: nmotion2015.com/wp-content/uploads/2015/11/nMotion-Express-Bus_151031_FINAL.pdf
- Freeway Transit/Bus Rapid Transit: nmotion2015.com/wp-content/uploads/2015/08/nMotion-Freeway-BRT-150712_FINAL.pdf

SUMMARY OF SCENARIO SERVICES

All three scenarios include improvements to express service. Scenarios 1 and 2 include the most significant improvements, including the development of Freeway BRT service, Express Bus on Shoulder service, higher service levels, and the development of new routes to new areas. Scenario 3 includes Express Bus on Shoulder service, slightly more service on existing routes and schedule changes to better match commute schedules, and one new route.

SCENARIO 1: COMPREHENSIVE REGIONAL SYSTEM

Scenario 1 includes (see Figure 1):

- The development of Freeway BRT service
- Express Bus on Shoulder service
- Nine new and/or improved express and regional routes, including reverse commute service
- All day service on most routes

FREEWAY BRT SERVICE

In Scenario 1, Freeway BRT would be developed in high volume commuter corridors, which would include:

- Northeast Corridor along Ellington Parkway and State Route 386 as far north as Gallatin
- Southeast Corridor along I-24 south as far south as Murfreesboro
- South Corridor along I-65 south as far south as Franklin or Spring Hill

The specific manner in which these services would be developed has not yet been determined. However, the most likely approach would be through:

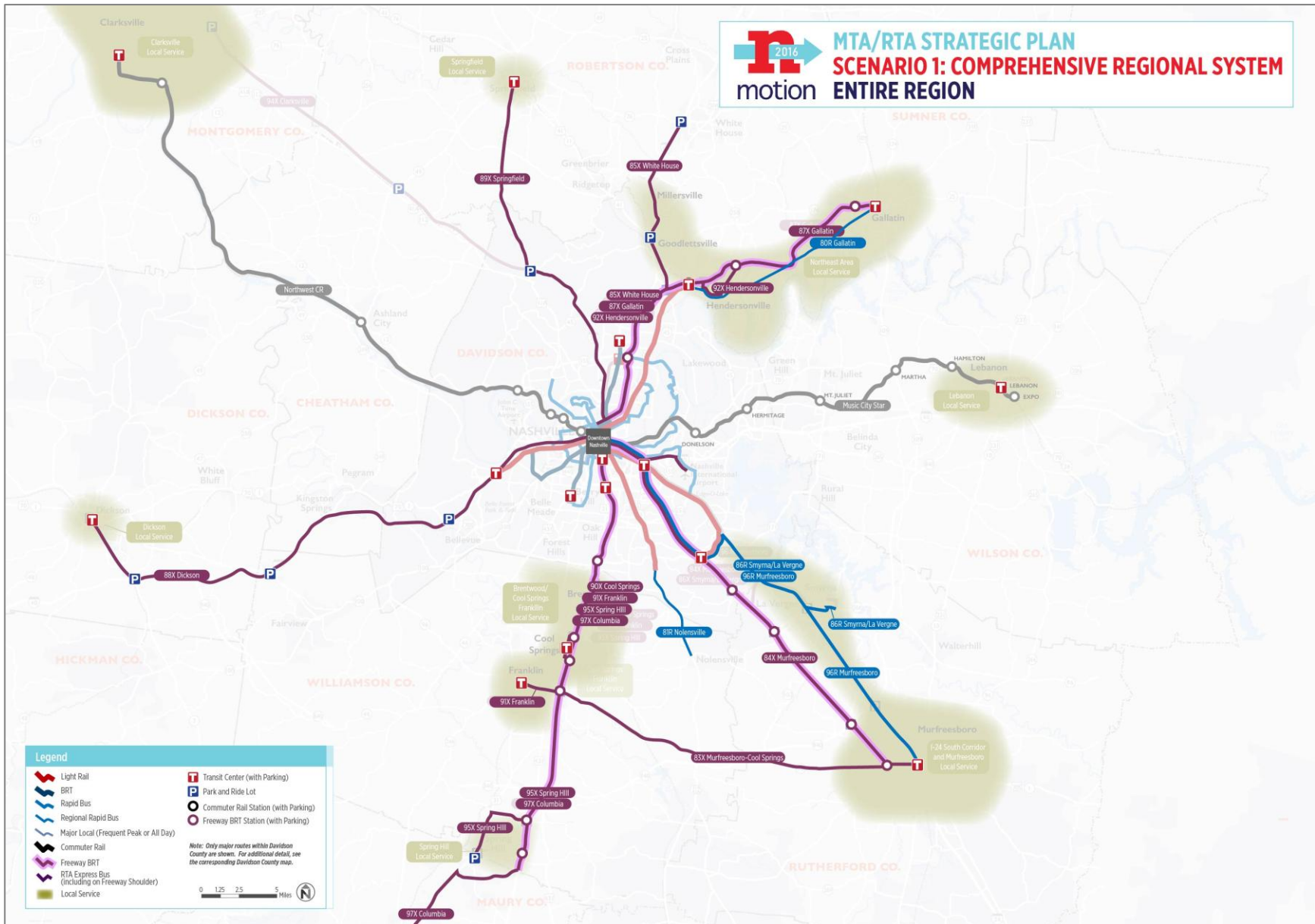
- The use of existing High Capacity Vehicle (HOV) lanes where they exist, the connection of those lanes to “in-line” stations within the freeway rights-of-ways, and greater HOV lane enforcement to ensure free travel flow.
- The development of new HOV and/or managed lanes, also including the development of in-line stations.

Eleven RTA routes would operate in these corridors; five of these routes would provide service throughout the day (Freeway BRT and Regional Rapid Bus service levels), while the others would operate via Freeway BRT facilities but provide the same level of service as other express routes (as indicated by the service types in parentheses):

Ellington Parkway/State Route 386

- Route 85X White House Express (Express/Commuter)
- Route 87X Gallatin Express (Freeway BRT)
- Route 89X Springfield (Express/Commuter)
- Route 92X Hendersonville Express (Express/Commuter)

FIGURE 1 | SCENARIO 1 EXPRESS BUS AND REGIONAL RAPID SERVICES





I-24 South

- Route 84X Murfreesboro Express (Freeway BRT)
- Route 86R Smyrna/La Vergne Rapid (Regional Rapid Bus)
- Route 96R Murfreesboro Rapid (Regional Rapid Bus)

I-65 South

- Route 90X Cool Springs Express (Express/Commuter)
- Route 91X Franklin Express (Freeway BRT)
- Route 95X Spring Hill (Express/Commuter)
- Route 97X Columbia (Express/Commuter)

Additional information on Freeway BRT services is included in the Freeway BRT Scenario Details document.

EXPRESS BUS ON SHOULDER SERVICE

MTA and RTA would work with TDOT to implement Bus on Shoulder service on the Nashville area freeways where Freeway BRT facilities would not be developed. With this type of service, MTA and RTA buses would be able to use freeway shoulders when general lanes are congested. As in other states with Express Bus service, buses would be limited to 25 to 30 mph when operating in shoulders. This would be slower than with Freeway BRT, but still significantly faster than at present.

In the short-term, MTA and RTA would implement bus on shoulder operations wherever existing shoulders permit. Over the longer term new shoulders would be added and existing shoulders widened as part of freeway improvement projects.

Six routes would provide Express Bus on Shoulder service:

I-24 North

- Route 89X Springfield

I-65- North

- Route 85X White House (north of I-65/State Route 386 intersection)

I-40 East

- Route 39X Airport

I-40 West

- Route 24X Bellevue
- Route 88X Dickson

NEW EXPRESS AND REVERSE COMMUTE SERVICES

In total, nine new express and Regional Rapid routes would be implemented, many of which would provide Freeway BRT and Express Bus on Shoulder service as described above:

New Express Routes

- Route 39X Airport Express, which would provide service every 30 minutes from early morning until late night (Commuter/Express but with more frequent service)
- Route 83X Murfreesboro- Cool Springs Express, which would provide reverse commute service (Commuter/Express)
- Route 85X White House/Portland – Nashville Express (Commuter/Express)
- Route 97X Columbia – Nashville Express (Commuter/Express)

New Regional Rapid Routes

- Route 80R Gallatin Rapid between Gallatin and the outer end of the Gallatin Pike light rail line, which would also provide reverse commute service (Regional Rapid)
- Route 82R Nolensville Rapid between Nolensville and the outer end of the Nolensville Pike light rail line, which would also provide reverse commute service (Regional Rapid)
- Route 86R Smyrna/La Vergne Rapid between Smyrna and La Vergne and downtown Nashville via Murfreesboro Pike and I-24 (Commuter/Express)
- Route 90X Cool Springs Express, which would provide reverse commute express service between Music City Central and Cool Springs (Commuter/Express)
- Route 96R Murfreesboro Rapid, which would provide Rapid Bus service between Nashville and Murfreesboro, primarily along Murfreesboro Pike and reverse commute service (Regional Rapid)

ALL DAY SERVICE

In Scenario 1, all Freeway BRT, express, and Regional Rapid routes would provide all day service (see Table 1). Freeway BRT routes would provide very frequent service, Regional Rapid routes would provide service every 30 minutes during peak periods and every 60 minutes during off-peak periods, and express routes would provide limited off-peak service (see Table 1). Weekend service would also be provided on Freeway BRT and Regional Rapid routes.

TABLE 1 | SCENARIO 1 WEEKDAY SERVICE SPANS AND FREQUENCIES

Service Type	Span of Service	Service Frequencies (mins)			
		Peak Periods	Midday	Evening	Early/Late
Regional Rapid Bus	5 am – 11 pm	30	60	60	60
Commuter/Express	5 am – 9 pm	30	120	120	
Freeway BRT	5 am – 11 pm	15	60	60	60

Note: Spans and frequencies represent minimums for each type of service; additional service could be provided.

SCENARIO 2: BUS-FOCUSED EXPANSION

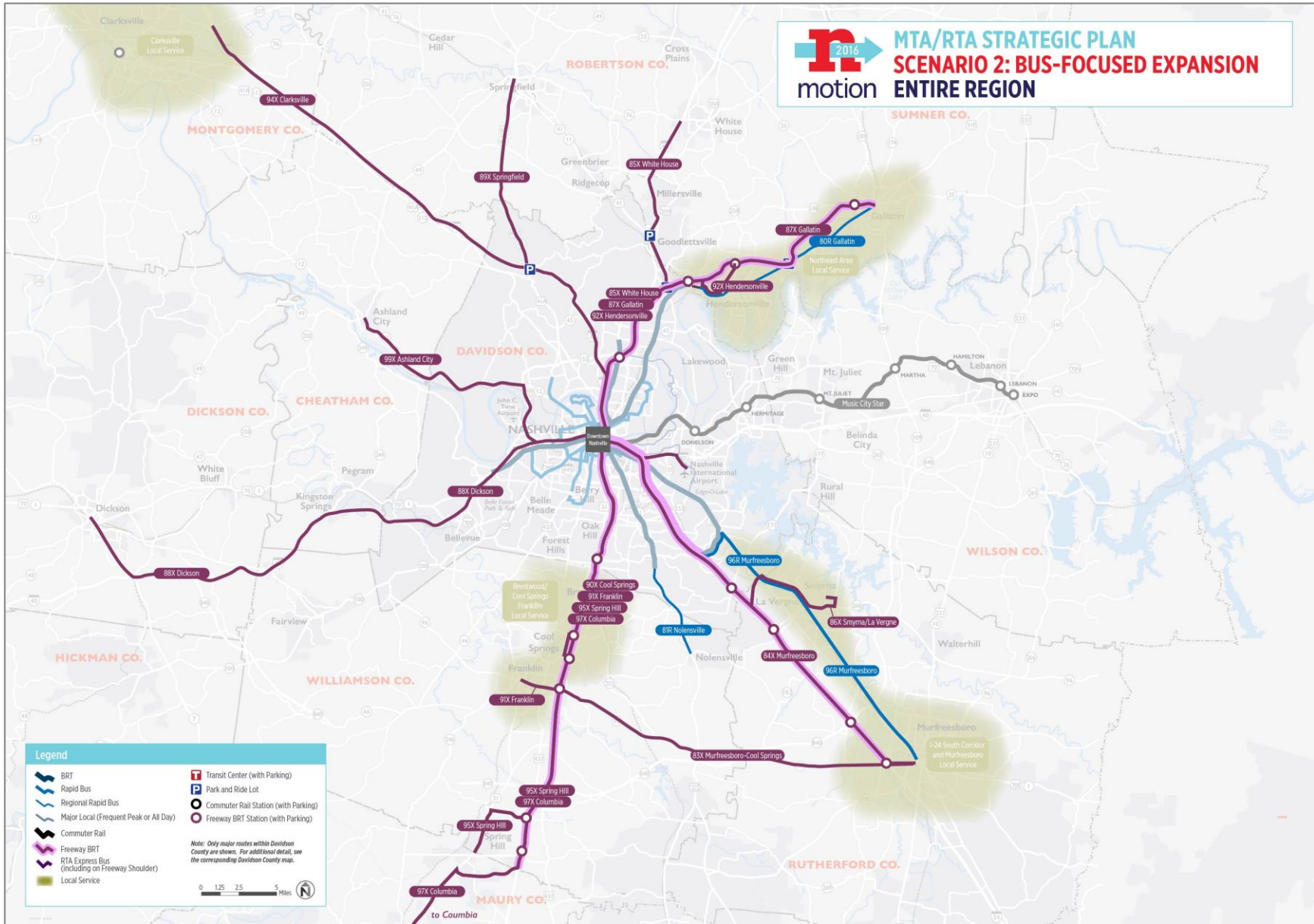
Scenario 2 includes a slightly scaled back version of Scenario 1 improvements (see Figure 2):

- The development of Freeway BRT service
- Express Bus on Shoulder service
- Nine new and/or improved express routes, including reverse commute service
- All day service on most routes

FREEWAY BRT SERVICE

As with Scenario 1, Scenario 2 includes the development of Freeway BRT service in high volume corridors to provide very fast service. Compared to Scenario 1, the routes and infrastructure improvements would be similar, but with a few differences. First, Scenario 2 does not include Northwest Corridor commuter rail, and instead includes express bus service to Clarksville and Ashland City. Second, so that express service to Clarksville could operate partially as Freeway BRT, Freeway BRT facilities to the north would be developed along I-65 rather than Ellington Parkway.

FIGURE 2 | SCENARIO 2 EXPRESS BUS AND REGIONAL RAPID SERVICES



Twelve routes would operate in the Freeway BRT corridors; four of which would provide service throughout the day (Freeway BRT and Regional Rapid Bus service levels), and seven of which would operate via Freeway BRT facilities but provide the same level of service as other express routes (as indicated by the service types in parentheses):

I-65 North/State Route 386

- Route 85X White House Express south of I-24/I-65 junction (Commuter/Express)
- Route 87X Gallatin Express (Freeway BRT)
- Route 89X Springfield (Commuter/Express)
- Route 92X Hendersonville Express (Commuter/Express)
- Route 94X Clarksville south of I-24/I-65 junction (Commuter/Express)

I-24 South

- Route 84X Murfreesboro Express (Freeway BRT)
- Route 86X Smyrna/La Vergne Rapid (Commuter/Express)
- Route 96R Murfreesboro Rapid (Regional Rapid)

I-65 South

- Route 90X Cool Springs Express (Commuter/Express)
- Route 91X Franklin Express (Freeway BRT)
- Route 95X Spring Hill (Commuter/Express)
- Route 97X Columbia (Commuter/Express)

EXPRESS BUS ON SHOULDER

As in Scenario 1, in lower volume commuter corridors, express buses would operate on freeway shoulders when regular lanes are congested. In Scenario 2, six routes would operate in this manner:

I-24 North

- Route 89X Springfield
- Route 94X Clarksville (north of I-24/I-65 junction)

I-65- North

- Route 85X White House (north of intersection with State Route 386)

I-40 East

- Route 39X Airport

I-40 West

- Route 24X Bellevue
- Route 88X Dickson
- Route 99X Ashland City (east of Briley Pkwy)

NEW EXPRESS AND REVERSE COMMUTE SERVICES

In total, eight new express, Regional Rapid, and regional routes would be implemented, many of which would provide Freeway BRT and Express Bus on Shoulder service as described above:

New Express Routes

- Route 39X Airport Express, which would provide service every 30 minutes from early morning until late night (Commuter/Express but with more frequent service)
- Route 83X Murfreesboro- Cool Springs Express, which would also provide reverse commute service (Commuter/Express)
- Route 85X White House/Portland – Nashville Express (Commuter/Express)
- Route 97X Columbia – Nashville Express (Commuter/Express)
- Route 99X Ashland City – Nashville (Commuter/Express)

New Regional Rapid Routes

- Route 80R Gallatin Rapid between Gallatin and the outer end of the Gallatin Pike light rail line, which would also provide reverse commute service (Regional Rapid)
- Route 82R Nolensville Rapid between Nolensville and the outer end of the Nolensville Pike light rail line, which would also provide reverse commute service (Regional Rapid)
- Route 90X Cool Springs Express, which would provide reverse commute express service between Music City Central and Cool Springs (Commuter/Express)
- Route 96R Murfreesboro Rapid, which would provide Rapid Bus service between Nashville and Murfreesboro, primarily along Murfreesboro Pike, including reverse commute service (Commuter/Express)

MORE FREQUENT SERVICE FOR LONGER HOURS

In Scenario 2, all Freeway BRT and Regional Rapid routes would provide all day service, and express routes would provide weekday peak period service (see Table 2). Major Freeway BRT routes would provide very frequent service and Regional Rapid routes would provide service every 30 minutes during peak periods and every 60 minutes during off-peak periods (see **Error! Reference source not found.**). Weekend service would also be provided on Freeway BRT and Regional Rapid routes.

TABLE 2 | SCENARIO 1 WEEKDAY SERVICE SPANS AND FREQUENCIES

Service Type	Span of Service	Service Frequencies (mins)			
		Peak Periods	Midday	Evening	Early/Late
Regional Rapid Bus	5 am – 11 pm	30	60	60	60
Commuter/Express	Peak Only	4 AM inbound trips; 4 PM outbound trips			
Freeway BRT	5 am – 11 pm	15	60	60	60

Note: Spans and frequencies represent minimums for each type of service; additional service could be provided.

Service on other express routes would be improved in two ways. First, additional trips would be added where necessary to provide a minimum of four AM inbound and four PM outbound trips. Second, schedules would be revised to serve later work schedules. Express service would continue to operate only on weekdays.

SCENARIO 3: MODEST IMPROVEMENTS

Scenario 3 does not include Freeway BRT, but does include Express Bus on Shoulder service, modest improvements to existing routes, and three new routes (see Figure 3).

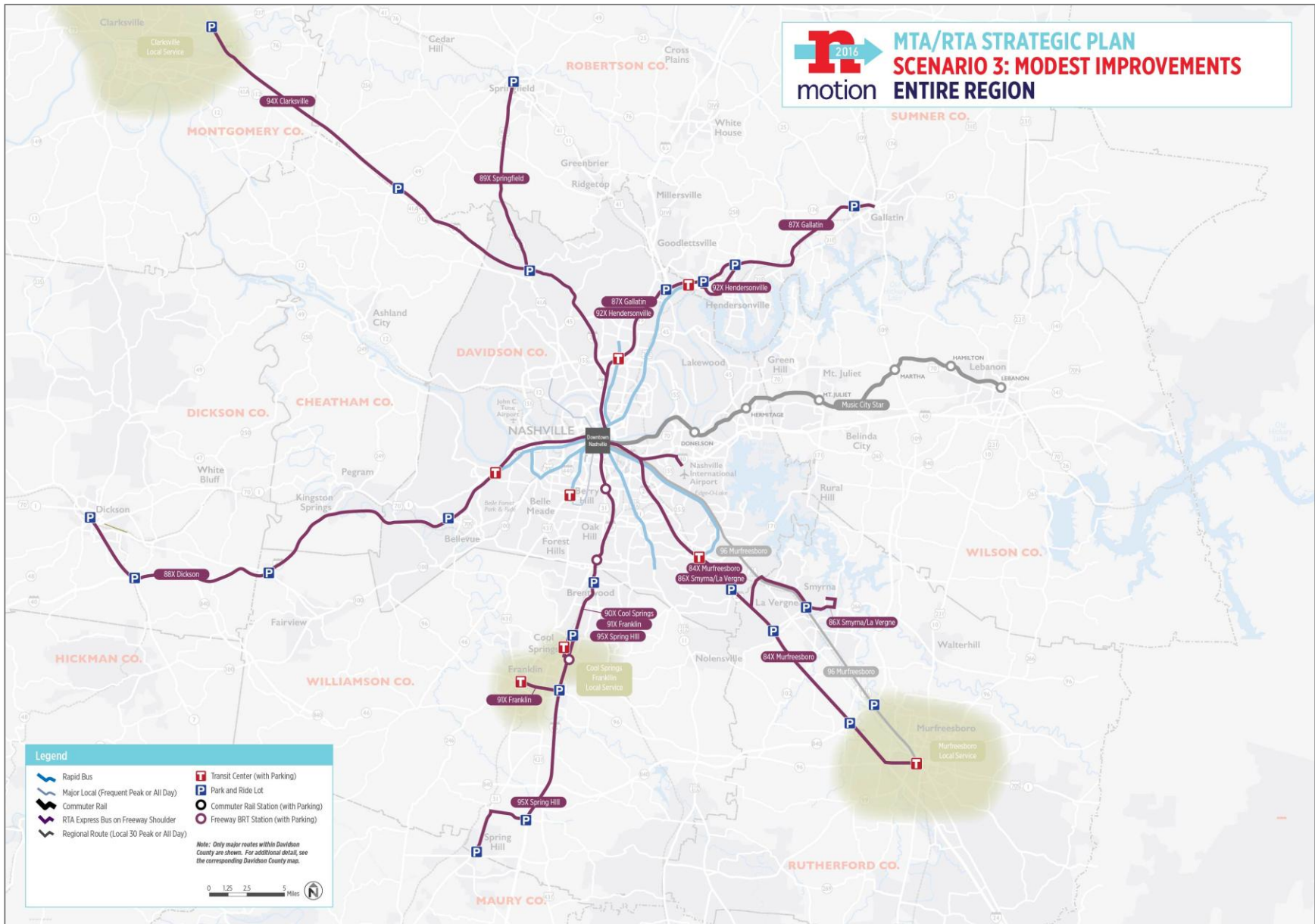
EXPRESS BUS ON SHOULDER SERVICE

As in Scenarios 1 and 2, MTA and RTA would work with TDOT to implement Bus on Shoulder service on the Nashville area freeways. Since Scenario 3 does not include Freeway BRT, the Express Bus on Shoulder network would be significantly larger, and 21 routes would provide Express Bus on Shoulder service:

I-24 North

- Route 89X Springfield/Joelton
- Route 94X Clarksville

FIGURE 3 | SCENARIO 3 EXPRESS BUS AND REGIONAL RAPID SERVICES



Ellington Parkway/I-65- North/State Route 386

- Route 35X Rivergate
- Route 36X Madison
- Route 87X Gallatin
- Route 92X Hendersonville

I-40 East

- Route 38X Antioch
- Route 39X Airport

I-24 South

- Route 33X Hickory Hollow/Lenox
- Route 37X Tusculum/McMurray
- Route 38X Antioch
- Route 84X Murfreesboro
- Route 86X Smyrna/La Vergne
- Route 96X Murfreesboro

I-65 South

- Route 37X Tusculum/McMurray
- Route 90X Cool Springs
- Route 91X Franklin
- Route 95X Spring Hill

I-40 West

- Route 24X Bellevue
- Route 88X Dickson

NEW EXPRESS AND REVERSE COMMUTE SERVICES

Scenario 3 includes two new express routes and an upgrade of Route 96 Murfreesboro Relax & Ride to all day service:

New Express Routes

- Route 39X Airport Express (Express/Commuter), which would provide service between Nashville International Airport and Music City Central. In contrast to other express routes, Route 39X would provide service every 30 minutes throughout the day. (Commuter/Express)
- Route 90X Cool Springs Express, which would provide reverse commute express service between Music City Central and Cool Springs (Commuter/Express)

Reverse Regional Route

- Route 96 Murfreesboro, which would provide limited stop service between Nashville and Murfreesboro, primarily along Murfreesboro Pike, which would operate every 30 minutes during peak periods and every 60 minutes during off-peak periods, and which would also provide reverse commute service (Local 30 Peak)

MORE FREQUENT SERVICE FOR LONGER HOURS

As in Scenario 2, express bus services would be improved by adding trips where necessary to provide a minimum of four AM inbound and four PM outbound trips. Schedules would be revised to serve later work schedules. Express service would continue to operate only on weekdays.