SCENARIO DETAILS: DEVELOP PREMIUM SERVICES

EXPRESS BUS-ON-SHOULDER

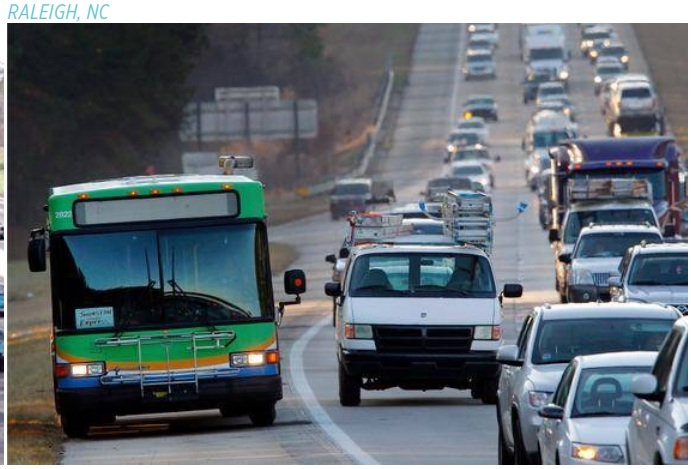
Most decisions about whether or not to use transit involve time and cost, and most transit services are slower than travel by private vehicle. However, when transit is faster or nearly as fast as travel by private vehicle (for example, many rail services), large numbers of travelers will choose to travel by transit instead of by car. Express bus riders in particular are more time sensitive. Thus, one of the most effective ways to encourage transit use is to make transit as fast as possible.

One way to provide travel time advantages to express bus service is to operate service in freeway shoulders ("bus-on-shoulder" operations). Bus-on-shoulder operations make service more reliable by providing the ability to navigate around congestion. These policies allow buses on selected freeway and arterial shoulders in order to bypass congestion and maintain transit schedules. Bus-on-shoulder operation is a low-cost way to make freeway transit service faster and more reliable.

FIGURE 1 | BUS-ON-SHOULDER OPERATIONS

MINNEAPOLIS

RALEIGH, NC



Bus-on-shoulder operations were first implemented in Minnesota more than 20 years ago, and the state now has 300 miles of shoulders in use by buses today and cites a number of benefits to bus on shoulder operation, including:

- Shorter and more predictable and reliable transit travel times
- Fewer missed transfer connections
- Increased transit ridership
- Reduced driver overtime
- Decreased operating costs

While there are often perceived safety issues with shoulder operations, particularly with respect to the potential for conflict with stalled vehicles or vehicles entering or exiting the highway in front of the path of a shoulder-running bus, there has been only one injury-crash that has been attributed to shoulder-running buses in Minnesota since 1992. Furthermore, no state that has implemented shoulder running policies has ever discontinued them.

For additional information on Express Bus on Shoulder service, see the Express Bus transit strategy document: nmotion2015.com/wp-content/uploads/2015/11/nMotion-Express-Bus_151031_FINAL.pdf.

SUMMARY OF SCENARIO SERVICES

In all three scenarios, MTA and RTA would work with TDOT to implement Express Bus on Shoulder operations. Scenarios 1 and 2 include the development of Freeway BRT facilities in the Northeast, Southeast, and South Corridors (to Gallatin, Murfreesboro, and Franklin, respectively). In those two scenarios, Express Bus on Shoulder service would be implemented wherever possible on other freeways. In Scenario 3, which does not include Freeway BRT, Express Bus on Shoulder service would also be implemented in the Northeast, Southeast, and South Corridors.

In all cases, express buses would only use shoulders when regular traffic lanes are congested, and maximum shoulder operating speeds would be limited to 25 to 30 mph. Also, as has been done in other states, service would initially be implemented where possible using existing shoulders. This would be possible in most areas on most freeways outside of Nashville's inner loop; HOV lanes could also be used. Over time, upgrades such as wider shoulders and bridge abutments, and the development of new shoulders, could be implemented as part of freeway improvement projects.

SCENARIO 1: COMPREHENSIVE REGIONAL SYSTEM

As described above, a major focus of Scenario 1 would be the development of Freeway BRT service in high ridership commuter corridors that would not be served by commuter rail. In lower volume commuter corridors, express buses would operate on freeway shoulders when regular lanes are congested. Five routes would operate in this manner (see Figure 2):

I-24 North

- Route 89X Springfield

I-65- North

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

I-40 East

- Route 39X Airport

I-40 West

- Route 24X Bellevue
- Route 88X Dickson

SCENARIO 2: BUS-FOCUSED EXPANSION

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 (see Figure 3):

I-24 North

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

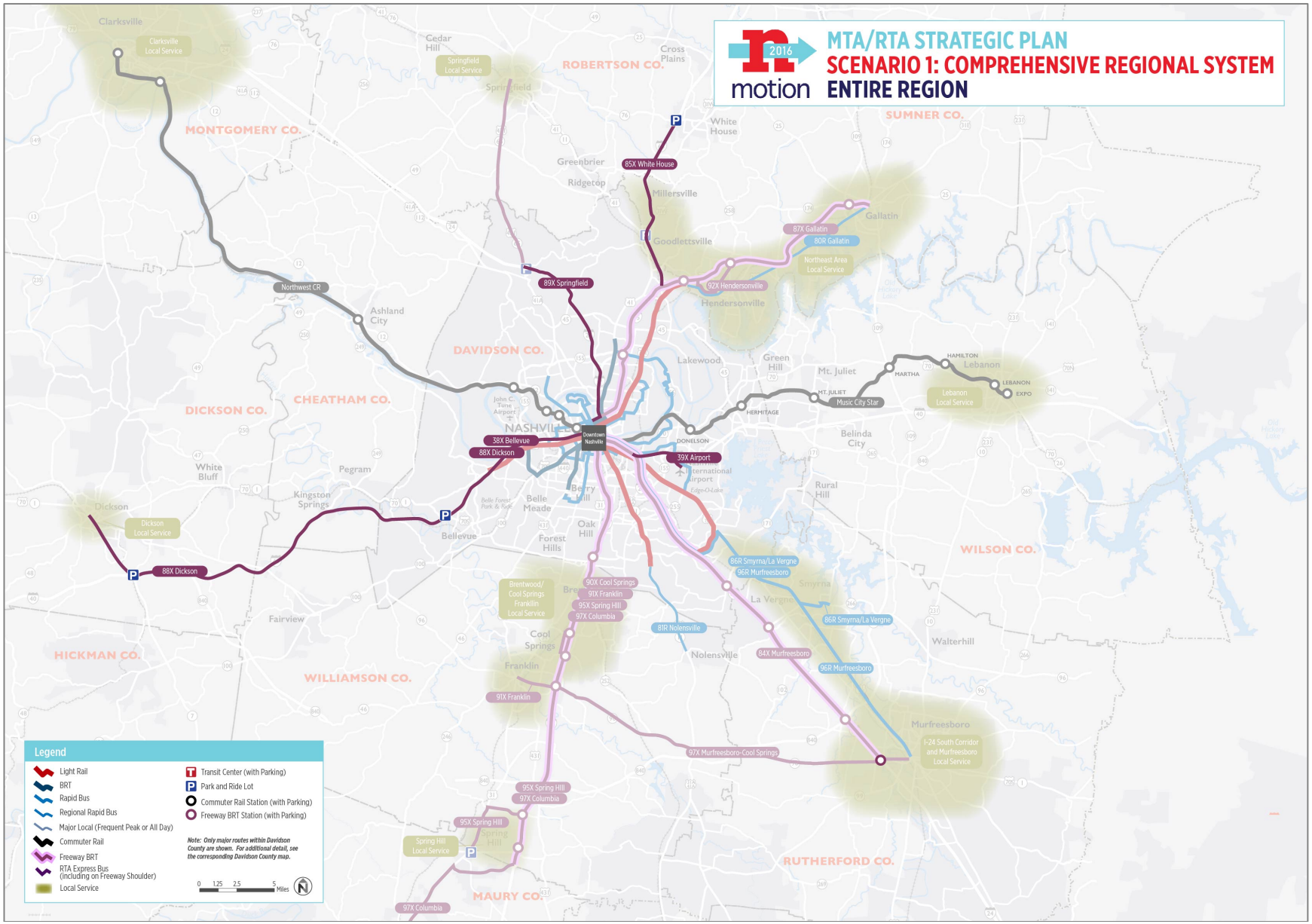
I-65- North

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

I-40 East

- Route 39X Airport

FIGURE 2 | SCENARIO 1 EXPRESS BUS ON SHOULDER SERVICE



I-40 West

- Route 24X Bellevue
- Route 88X Dickson
- Route 99X Ashland City (east of Route 155)

SCENARIO 3: MODEST IMPROVEMENTS

In Scenarios 1 and 2, many express services would be replaced by other premium services such as Freeway BRT, light rail (including connections to light rail), and Rapid Bus. Scenario 3, conversely, would maintain existing express routes, and in a few cases develop new routes. Without Freeway BRT facilities, Express Bus on Shoulder service would be implemented in all major freeway corridors. Twenty-one routes would operate in this manner (see Figure 4):

I-24 North

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

Ellington Parkway/I-65- North/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 Smyra/La Vergne
- Route 96X Murfreesboro

I-65 South

- Route 37X Tusculum/McMurray
- Route 24X Bellevue
- Route 90X Cool Springs
- Route 91X Franklin
- Route 95X Spring Hill

I-40 West

- Route 24X Bellevue
- Route 88X Dickson

FIGURE 3 | SCENARIO 2 EXPRESS BUS ON SHOULDER SERVICE

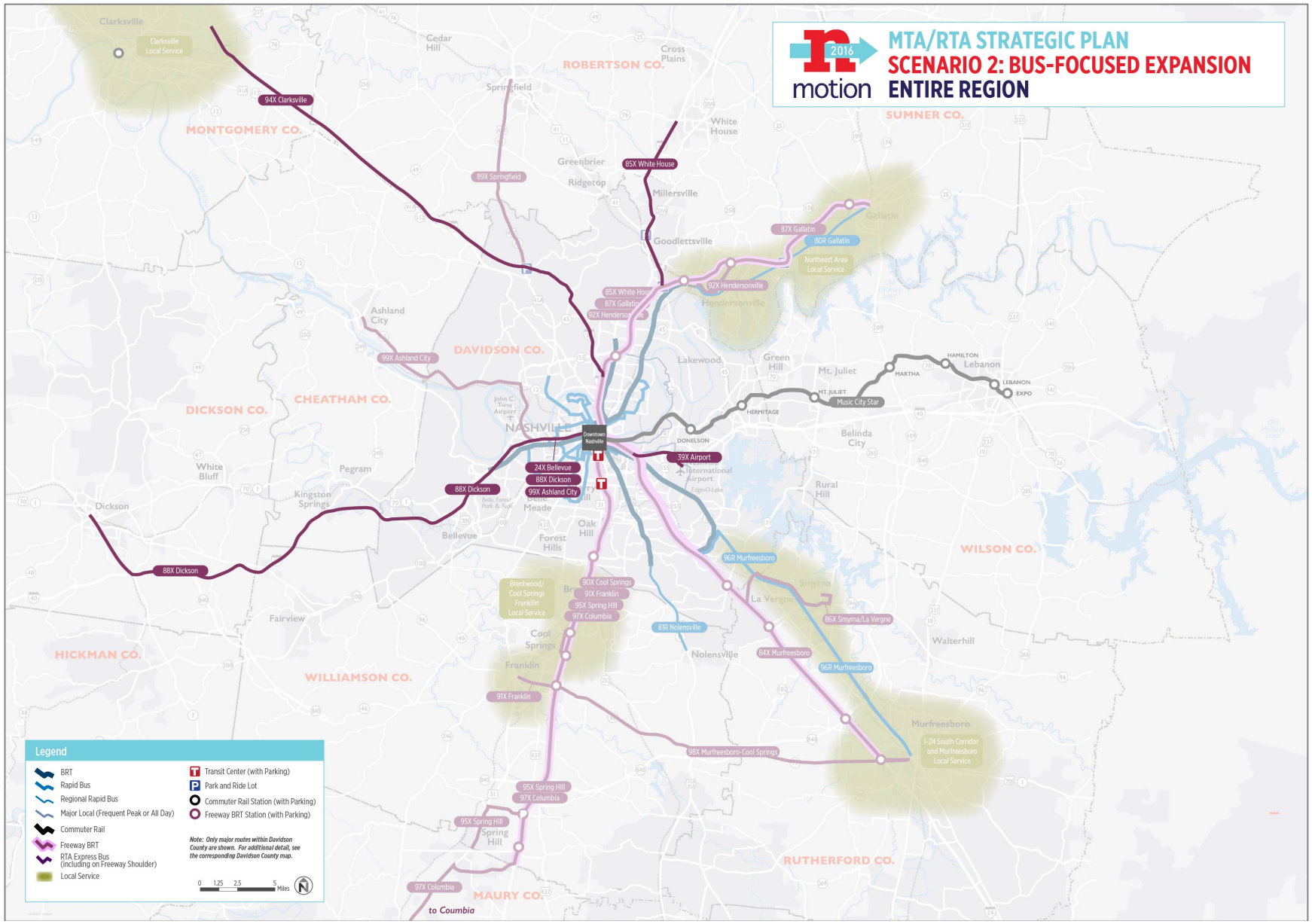


FIGURE 4 | SCENARIO 3 EXPRESS BUS ON SHOULDER SERVICE