

SCENARIO DETAILS: DEVELOP PREMIUM SERVICES

COMMUTER RAIL SERVICE

Commuter rail is passenger rail service that is designed to transport large volumes of passengers in high volume regional corridors in a fast and comfortable manner. Typical characteristics of commuter rail include:

- **Vehicles:** Most American commuter rail trains consist of a locomotive and multiple passenger cars, but some consist of multiple self-propelled cars. Most American commuter rail systems are diesel-powered, but a few are electric-powered.
- **Length:** Most commuter rail lines are designed to serve long distance travel, and lines that range from 20 to 50 miles are most common.
- **Station Spacing:** To provide competitive travel times, stations are spaced widely apart, typically every three to five miles, and often longer.
- **Access and Station Facilities:** Most commuter rail stations rely heavily on park and ride access, and thus most include parking, and many facilities can be very large. Other station facilities include platforms, and depending upon boarding volumes, either simple shelters or enclosed waiting areas. They also commonly include other elements such as real-time passenger information, ticket vending, and bicycle parking.
- **Capacity:** Commuter rail coaches can be either single or double level. Single level coaches can seat up to 125 passengers and bi-levels coaches can seat up to 185 passengers. Train lengths of up to 10 cars are common in major commuter rail systems, and can seat over 1,500 passengers. Smaller systems often run two-car trains, which seat approximately 350 passengers.¹
- **Schedules:** In most cities, commuter rail lines provide service from at least Monday to Saturday, and provide all day and evening service. However, a few provide more limited service (including the Music City Star).

These measures work together to make service enjoyable, convenient, and comfortable, and to provide efficient and direct rail service from outlying suburbs to employment centers and the central business district.

FIGURE 1 | MINNEAPOLIS NORTHSTAR AND NASHVILLE MUSIC CITY STAR



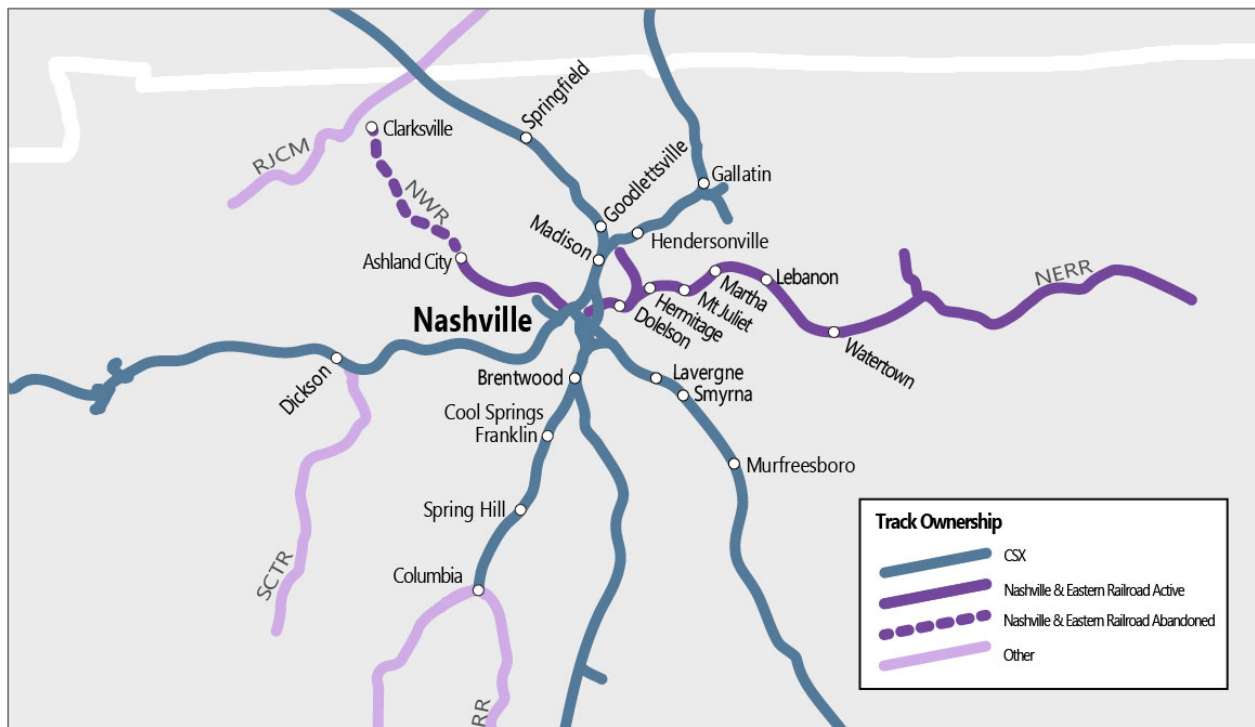
¹ With a two car train, one car must be a “cab car” from which the train operator controls the train when it is being pushed by the locomotive, which reduces the number of seats in that car.

CHALLENGES IN MIDDLE TENNESSEE

All new commuter rail lines that have been implemented since the 1990s, including the Music City Star, have been developed in rail corridors with low levels of freight traffic or the ability to develop parallel tracks within existing freight rights-of-way. In those cases, the freight railroads either had sufficient excess capacity to accommodate commuter rail and/or the receipts from the sale of the rail corridors more than offset negative impacts to freight service.

However, this is not the case in Middle Tennessee. Except for the Nashville and Eastern line used for Music City Star service, and the Nashville and Eastern line between Clarksville and Nashville, other potential commuter rail services would use CSX lines that have very heavy freight traffic (see Figure 2). Beyond the freight traffic alone, Nashville is also a major center for related freight activities, and the company has a major rail yard in Nashville (Radnor), an intermodal terminal, an automobile distribution center, and a bulk transfer terminal. CSX's Nashville area freight traffic is near capacity, and primarily for this reason, CSX not willing to share its tracks with passenger traffic.

FIGURE 2 | MIDDLE TENNESSEE TRACK MAP (CSX IN BLUE)



Because it can not reasonably be assumed at this time that CSX lines would become available for commuter rail use, none of the scenarios include the development of commuter rail on CSX lines. However, this is not to suggest that the region should not further pursue the concept. Input received as part of the nMotion process suggests that there are a number of public policy objectives beyond the scope of this effort that would benefit from the relocation of significant rail freight traffic and facilities away from Nashville's downtown core. These include overall freight capacity, truck congestion on the highways of Middle Tennessee, consumption of extremely valuable real estate for freight management purposes, and others. Such an approach would require a major investment of public and private funding, and a major multimodal effort at the state and regional levels.

For additional information on commuter rail service, see: nmotion2015.com/wp-content/uploads/2015/09/nMotion-Commuter-Rail-150918-Final.pdf

SUMMARY OF SCENARIO SERVICES

All three scenarios include varying levels of improvements to the Music City Star. Scenario 1 also includes the development of commuter rail service in the Northwest Corridor of the region.

SCENARIO 1: COMPREHENSIVE REGIONAL SYSTEM

Scenario 1 includes major improvements to Music City Star service and the development of Northwest Corridor commuter rail (see Figure 3). Improvements to Music City Star service would include:

- An extension of service to Lebanon’s planned Expo Center.
- The provision of all day service seven days a week. Weekday service would operate from 5 AM to 11 PM, every 30 minutes during peak periods and every 60 minutes during other times. Weekend service would operate every 60 minutes for slightly shorter hours.
- Double tracking or additional passing sidings to enable the additional service.
- New and modern equipment to operate the expanded service and replace existing equipment

In the Northwest Corridor, commuter rail service would be developed between Clarksville and Nashville. The details of how this service would operate are now being determined through the Northwest Corridor Transit Study (more more information, see www.nwcorridorstudy.com). Based on the most recently available information:

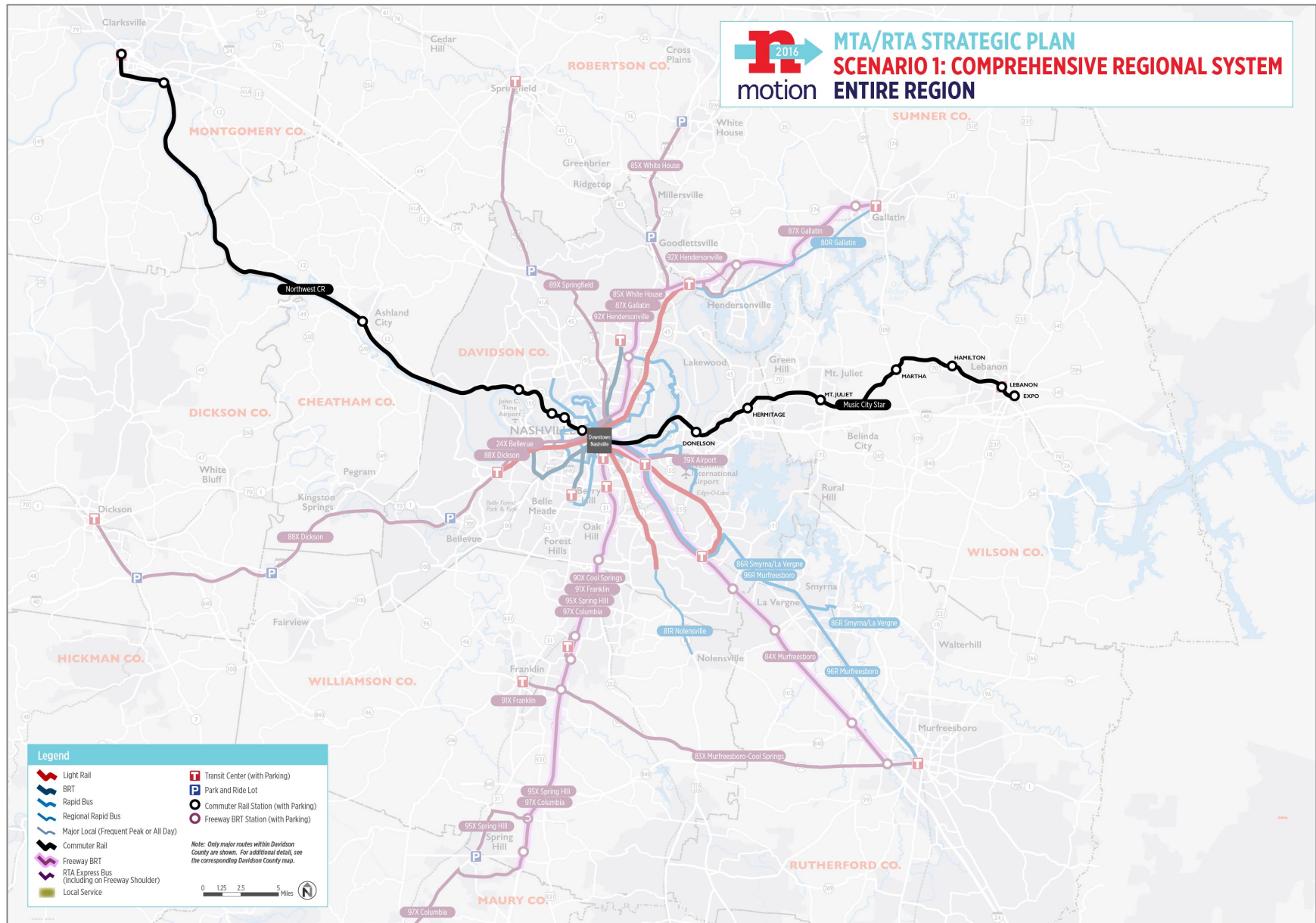
- The line would include two stops in Clarksville, one in Ashland City, and six stations in Davidson County (including the terminal).
- The inner alignment is still being determined, and is constrained by the CSX issues described above.
- Two types of service would be provided along the line: (1) service between Clarksville and Nashville, and (2) supplemental service within Davidson County.
- Service would be operated with self-propelled rail cars (Diesel Multiple Units, or DMUs) that would be similar in appearance to light rail vehicles.
- For the purposes of nMotion, Scenario 1 assumes that both services would operate with the same spans and frequencies as described above for the Music City Star (although this may change pending the recommendations of the Northwest Corridor Study).
- The combination of Clarksville and Davidsons County service would provide frequent light rail-like service within Davidson County – every 15 minutes during weekday peak periods and every 30 minutes at other times (including on weekends).

SCENARIO 2: BUS-FOCUSED EXPANSION

Scenario 2 includes improvements to Music City Star service, but does not include Northwest Corridor commuter rail. Improvements to Music City Star service would include:

- An extension of service to Lebanon’s planned Expo Center.
- The provision of all day service six days a week. Weekday service would operate from 5 AM to 11 PM, every 30 minutes during peak periods, every 120 minutes during the midday, and every 60 minutes at night. Saturday service would operate every 60 minutes from 6 AM to 12 midnight.

FIGURE 3 | SCENARIO 1 COMMUTER RAIL SERVICE



- Double tracking or additional passing sidings to enable the additional peak period service.
- New equipment to operate the expanded service and replace existing equipment

SCENARIO 3: MODEST IMPROVEMENTS

Scenario 3 includes modest improvements to Music City Star service:

- The provision of all day service on weekdays, from 5 AM to 9 PM Monday through Thursday, and until 11 PM on Fridays. Service would operate every 30 minutes during peak periods and every 120 minutes during the midday and at night. No weekend service would be provided.
- Double tracking or additional passing sidings to enable the additional peak period service.
- New equipment to operate the expanded peak period service and replace existing equipment