TRANSIT STRATEGIES

FREQUENT TRANSIT NETWORKS

Transit is most attractive when it is frequent enough that people don't need to consult a timetable and can instead just go to a stop and know that the train or bus will arrive shortly. Nearly all major transit systems operate networks of frequent services. At very large transit systems, these are often comprised of rapid transit and light rail lines that are supplemented with frequent bus services (that are often bus rapid transit [BRT] and/or Rapid Bus lines). For transit systems that have either a limited number of rail lines only or that are bus only, Frequent Transit Networks or Frequent Service Networks are comprised largely or exclusively of bus services.

Over the past decade, there has been an increased emphasis on the development of Frequent Service Networks and, in particular, the branding of Frequent Service Networks to heighten public awareness of them. Furthermore, the development of Frequent Service Networks is a concept that is spreading to smaller systems.

METRO TRANSIT (MINNEAPOLIS / SAINT PAUL) HI-FREQUENCY PROMISE

WHAT ARE FREQUENT TRANSIT NETWORKS?

Frequent Transit Networks are designed to provide convenient service between an area's most important destinations and consist of a number of inter-related elements:

- **Frequent service, typically every 10 to 15 minutes or less from the beginning of the morning peak to early evening or later**
- **A sufficient number of routes to create a network that serves all high-demand locations**
- **Direct routes that operate along major arterials, consisting of a combination of rapid transit, light rail, BRT, Rapid Bus, and local bus routes, and sometimes consisting entirely of local bus routes**
- **Special branding and information to make service visible and memorable**

These elements are designed to make service more convenient, connected, and memorable.

CONVENIENT

Frequent Transit Networks are designed to provide frequent and direct service that operates for long hours:

- **Frequent:** Most transit systems consider services that operate at least every 15 minutes throughout the day and into (at least) the early evening as "frequent." However, there are exceptions and, as described further below, Boston includes only a subset of its frequent routes (those that have been designated as "Key Corridor" routes), and Columbus, OH includes routes that operate less frequently during the midday.
- **Long Hours of Service:** With few exceptions, Frequent Transit Network services have long spans of service and operate seven days a week. However, many Frequent Transit Network services operate less frequently at night.

- **Direct:** With only limited exceptions due to unique circumstances such as geographic and street layout constraints, Frequent Service Networks are comprised of routes that are direct and operate in exclusive rights-of-way and/or along major arterials.

CONNECTED

Frequent Transit Networks are designed to serve the locations that most people want to go to most often—to downtowns, urban neighborhoods, mixed-use corridors, employment centers, and major institutions such as universities.

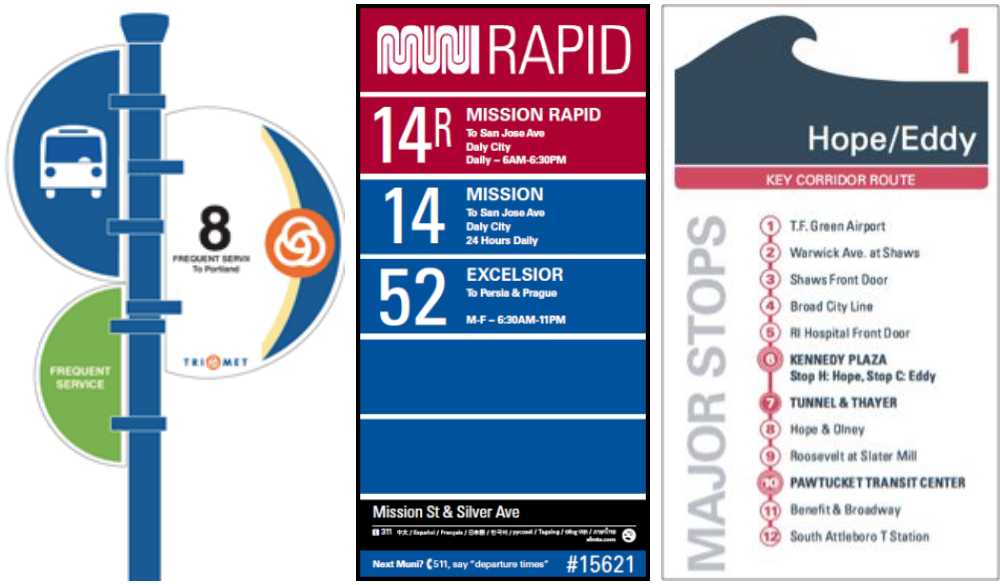
Frequent Service Networks can also create a de-facto "system backbone" that provides a structure for other services. In the same manner that large urban systems are built around the backbone that their rapid transit systems provide, Frequent Service Networks can provide a similar structure for smaller systems, with lower frequency routes and specialized services providing connections to the Frequent Service Network.

MEMORABLE

Frequent Transit Networks use four primary approaches to making service memorable: special branding, Frequent Transit Network maps, simple service structures, and simple schedules.

- **Branding:** Many transit systems brand their Frequent Transit Networks to heighten awareness of the available services. Examples include Minneapolis/Saint Paul's "Hi-Frequency Network," Vancouver's "Frequent Transit Network," Providence's "Key Corridor Network," and San Francisco's "Rapid Network." Many transit systems that brand their Frequent Transit Networks publish Frequent Transit Network Maps and indicate frequent services uniquely on system maps. For example, LA Metro publishes an "Every 15 Minutes (or Less)" map. Branding is also used in a variety of other ways, including in marketing materials, at bus stops, and on schedules.

USE OF BRANDING FOR FREQUENT SERVICES (PORTLAND, OR; SAN FRANCISCO, CA; PROVIDENCE, RI)



- **Frequent Service Maps:** Many systems produce special Frequent Transit Network maps that are designed to highlight frequent services and make them stand out from other service. Transit systems that do this include Boston's MBTA, Minneapolis/Saint Paul's Metro Transit, Portland's Tri-Met, Washington, DC's WMATA, and Vancouver's TransLink (with examples from Boston, Minneapolis/Saint Paul, and Vancouver shown in the following sections).

- **Simple Service Structure:** Frequent Transit Networks have simple service structures that are designed to make service easier to remember. Typically, they operate as directly as possible within exclusive rights-of-way and/or along major arterials.
- **Simple Schedules:** Frequent Transit Networks also typically have simple schedules, with transit services scheduled to operate at even intervals (clockface headways) that passengers can easily remember.

FREQUENT TRANSIT NETWORK EXAMPLES

As described above, most large systems have a Frequent Service Network, whether explicitly branded or not. Some of the larger transit systems that have branded their Frequent Service Networks include Minneapolis/Saint Paul, San Francisco, and Vancouver. Others that have not been branded include Boston, Columbus, and Houston.

VANCOUVER

TransLink's Frequent Transit Network (FTN) consists of its four rail lines plus a large number of bus routes that operate at least every 15 minutes throughout the day and until at least 9:00 p.m. TransLink advertises the service as "15-minute or better service, 7 days a week."

VANCOUVER TRANSLINK FREQUENT TRANSIT NETWORK

As stated by TransLink, the FTN provides the following benefits:

- Convenient and easy to use
- Service is frequent enough to not need a schedule for most trips
- Quicker travel times because wait times are shorter

- Easier to make spontaneous trips and know a service will be there if plans change
- The "hop on" and "hop off" level of service makes it easier for people to stop off to run an errand or shop during their commutes

BOSTON

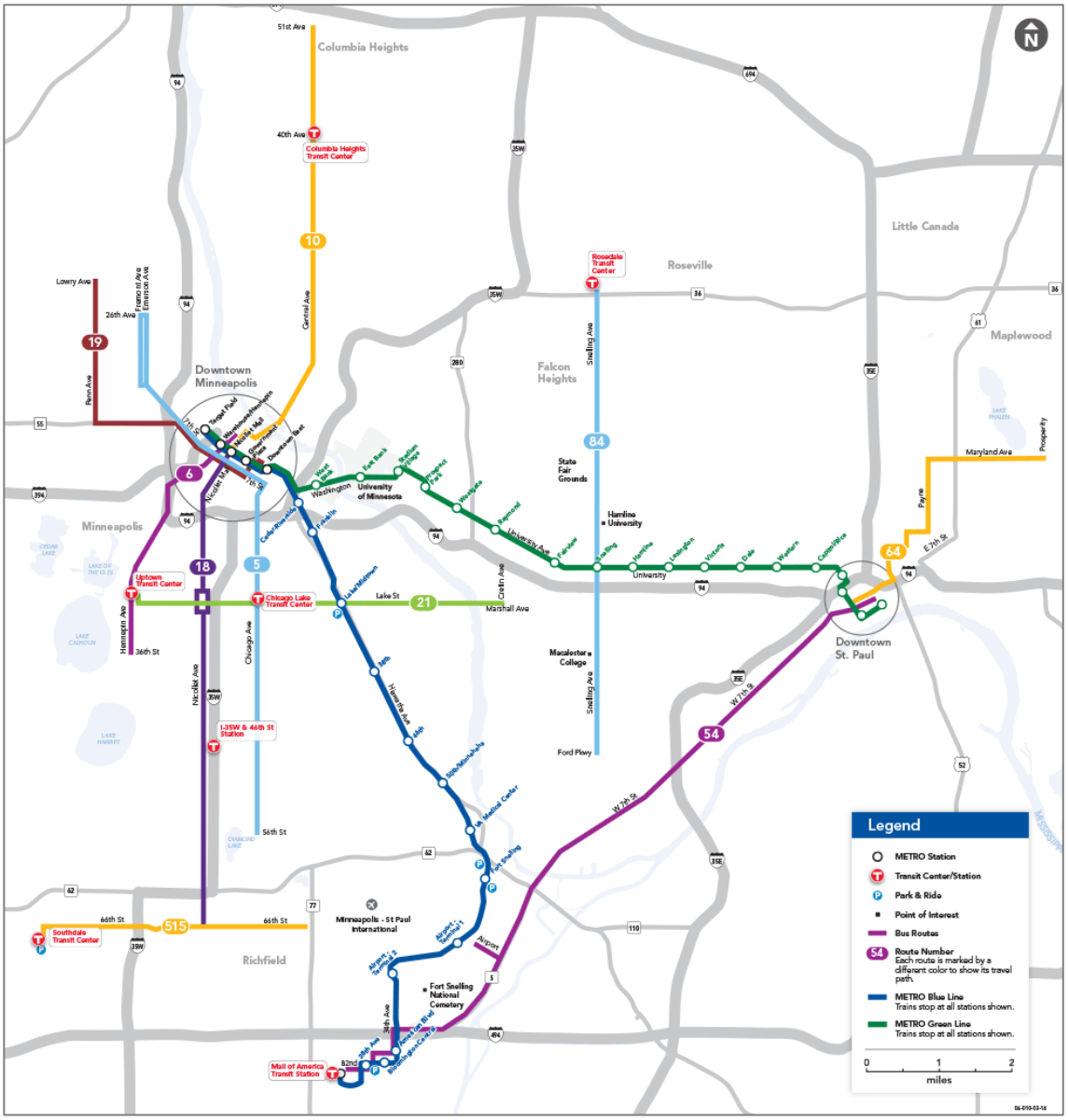
Boston's MBTA has long produced a spider map of its subway lines and has updated this map to include key connections such as with commuter rail, Silver Line BRT routes, and "Key Bus Routes" (which is the terminology that MBTA uses for frequent service routes). The MBTA has not branded this network, but presents it through its "Rapid Transit/Key Bus Routes Map." As shown below, the Frequent Transit Network consists primarily of rail lines that are supplemented with BRT and Key Corridor bus routes.

BOSTON MBTA RAPID TRANSIT/KEY BUS ROUTES

MINNEAPOLIS/SAINT PAUL

In Minneapolis/Saint Paul, Metro Transit's "Hi-Frequency Network" consists of "13 routes with service so frequent, you don't need to carry a schedule." The 13 routes include Metro Transit's two light rail lines and 11 frequent bus routes. Hi-Frequency routes operate every 15 minutes or better on weekdays from 6:00 a.m. to 7:00 p.m. and on Saturdays from 9:00 a.m. to 6:00 p.m. The routes serve downtown Minneapolis, downtown Saint Paul, Minneapolis/Saint Paul International Airport, and key crosstown corridors. Metro Transit plans to grow this network with the addition of new light rail and BRT lines.

MINNEAPOLIS/SAINT PAUL METRO TRANSIT HI-FREQUENCY SERVICE NETWORK



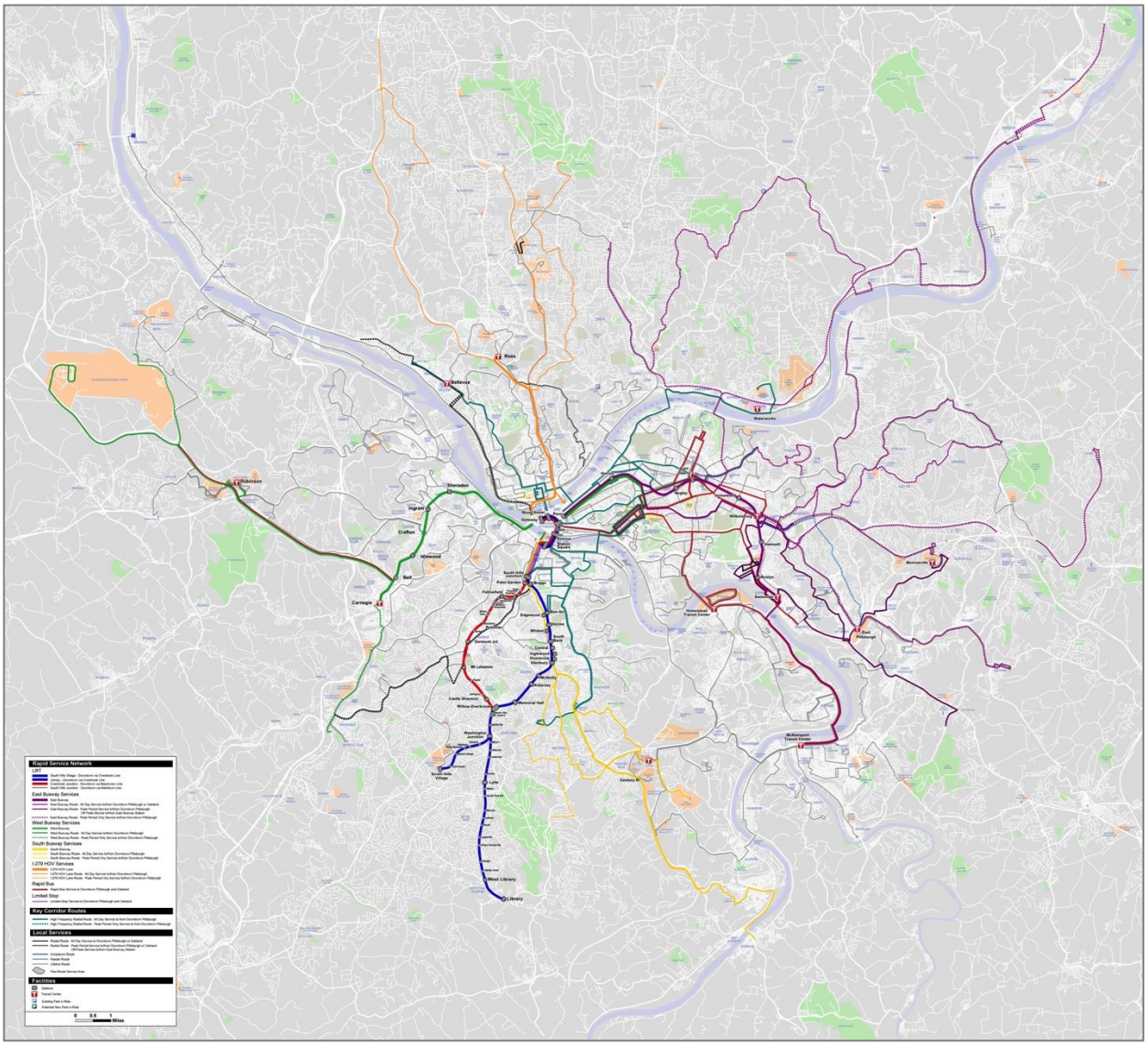
PITTSBURGH

In 2009, Pittsburgh's Port Authority undertook one of the most extensive transformations of an American transit system with a major theme that more frequent service on fewer routes was better than infrequent service on very

many routes. As part of that transformation, the Port Authority reduced the number of routes that it provided from 175 to 123 but provided more total service on the 123 routes than it had on the 175 routes.

Part of the changes included the development of a Rapid Service Network that consists of its light rail lines, BRT (busway) services, express routes, and new Rapid Bus and high frequency radial and "Key Corridor" routes. This network is somewhat different than many other Frequent Transit Networks in that it is focused heavily on faster service. As a result, the Rapid Service Network includes all express routes but excludes some regular local routes that provided frequent service.

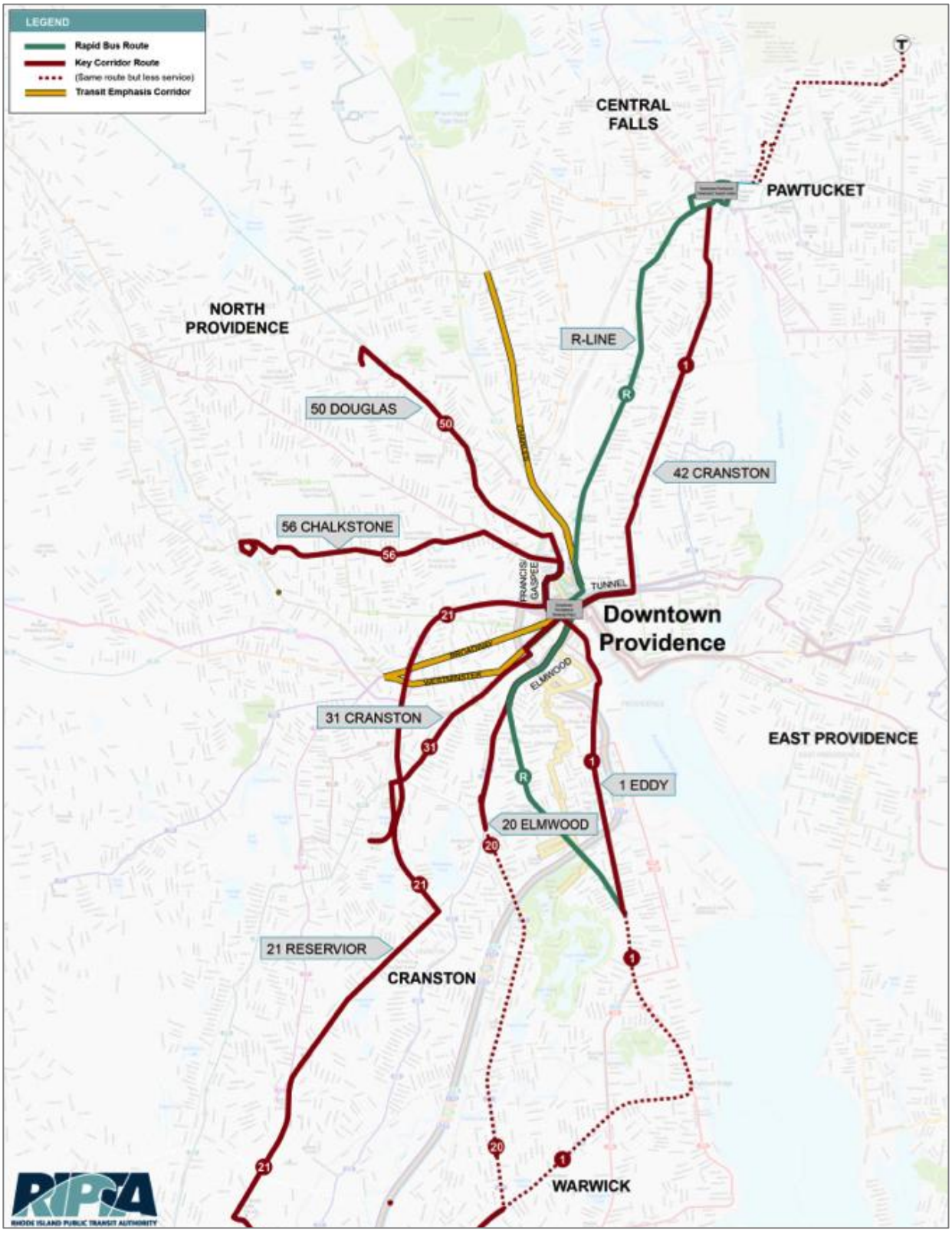
PITTSBURGH'S PORT AUTHORITY RAPID SERVICE NETWORK



PROVIDENCE, RI

RIPTA, which is Rhode Island's statewide transit system, redesigned its services in 2013 and, as part of those changes, developed a Frequent Transit Network for the Providence area consisting of its new Rapid Bus line (the R-Line), key corridor bus routes, and transit emphasis corridors in which combined services on multiple routes provide frequent service. Providence's Frequent Transit Network consists entirely of bus services.

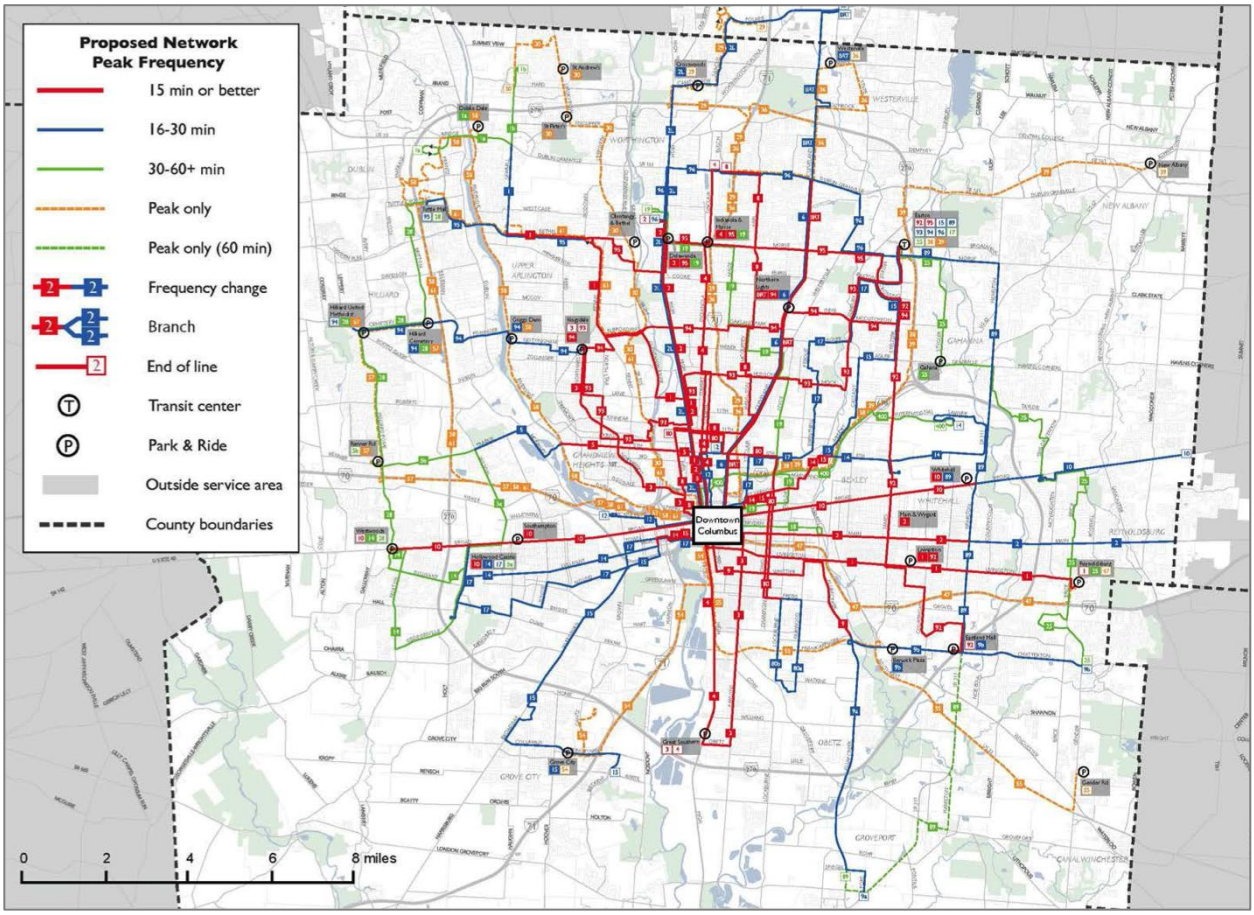
PROVIDENCE, RI FREQUENT TRANSIT NETWORK



COLUMBUS, OH

Columbus' COTA is developing a Frequent Service Network that will double the number of residents who will have access to frequent service. However, somewhat differently from many other Frequent Transit Networks, Columbus is defining its Frequent Service Network in terms of routes that operate at least every 15 minutes during peak periods, as opposed to throughout the day. The service redesign is intended to improve service to non-downtown destinations, including the suburbs, provide more consistent service patterns, and reduce downtown bus congestion. Columbus' planned Frequent Service Network will be comprised entirely of bus services, although it hopes to add rail services in the future.

COLUMBUS FREQUENT SERVICE NETWORK (WITH FREQUENT ROUTES IN RED)

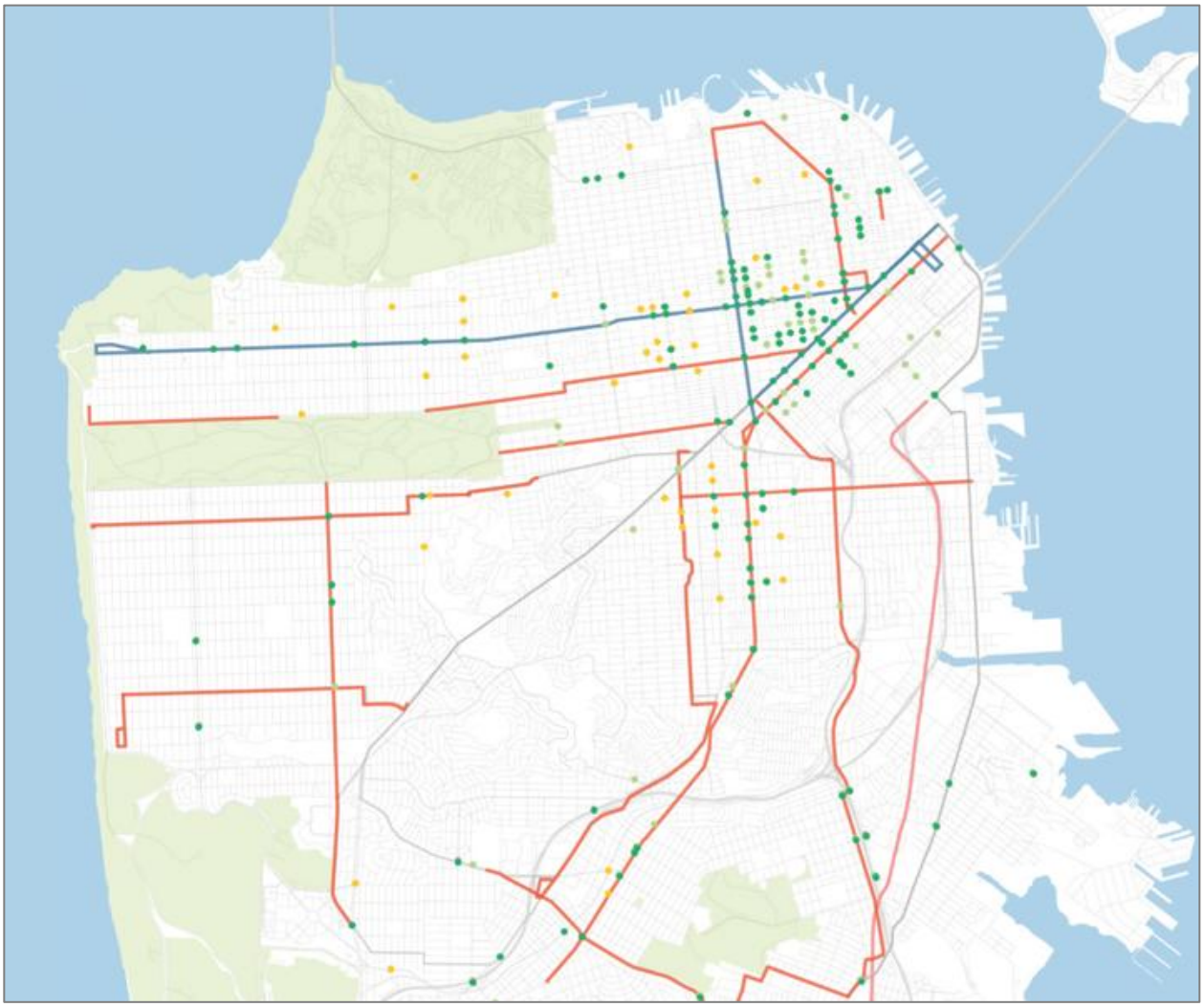


SAN FRANCISCO

San Francisco's SFMTA is in the process of implementing Muni Forward, the first major overhaul to the system since 1979. As part of Muni Forward, the agency is creating a Rapid Network of light rail and rapid bus routes. Similar to the Pittsburgh redesign, this effort focuses more on speed than frequency, although the Rapid Network services are also frequent services.

Complementing the Rapid Network routes are several high-frequency local routes, which, although they stop more frequently, fill in coverage where Rapid Network routes either do not stop or do not provide service. SFMTA defined several high ridership routes and increased service frequency to every 10 minutes or better during midday and peaks. The frequent local routes form a defined service grid, allowing travel to most parts of the city with short transfer times.

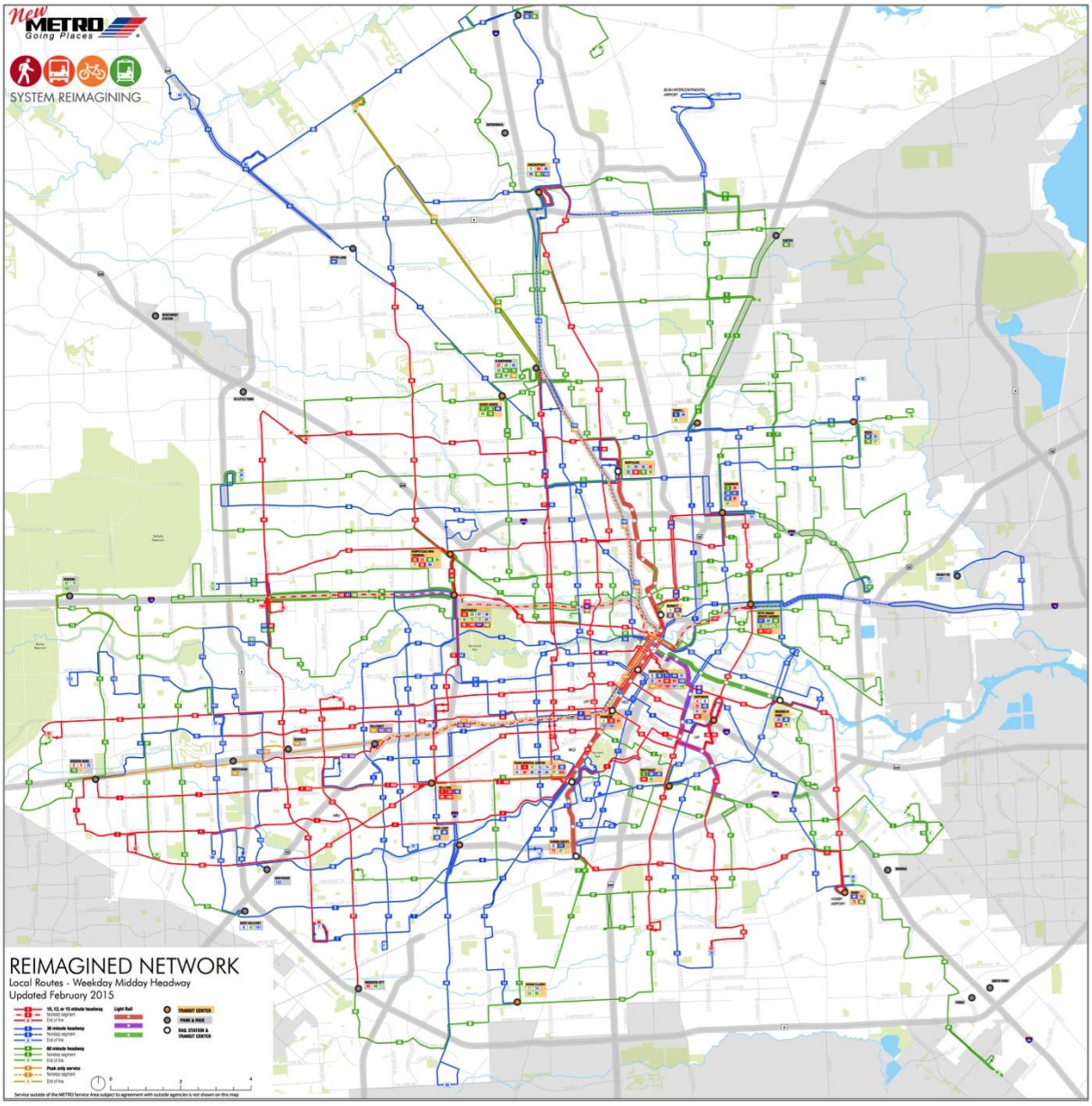
SAN FRANCISCO RAPID NETWORK



HOUSTON

Houston Metro is currently in the process of "reimagining" its bus service to make it more grid-like and to increase the number of routes with frequent service, while reducing the number of routes that provide infrequent and/or duplicative service. These changes will represent a major shift in service philosophy away from a system of many infrequent routes focused on downtown to a simpler system based on fewer routes that provide more frequent service and better service to non-downtown destinations. A centerpiece of the redesign is a new Frequent Transit Network of services that would operate at least every 15 minutes. The Frequent Transit Network will be largely comprised of frequent bus services plus Metro's light rail lines.

HOUSTON METRO'S PLANNED BUS SERVICE REDESIGN (WITH FREQUENT ROUTES IN RED)



PORTLAND, OR

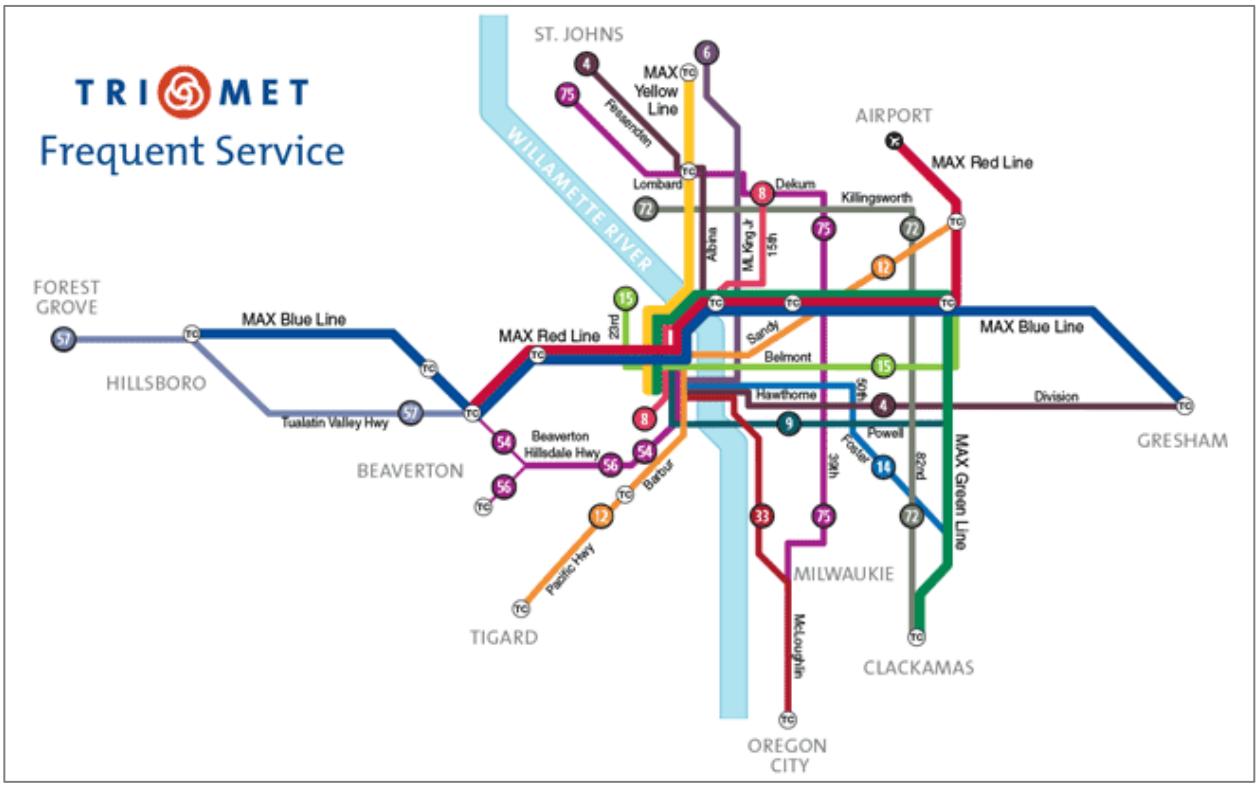
Portland's TriMet has designated a Frequent Service Network that consists of its light rail lines and frequent bus routes. Light rail services run every 15 minutes or better most of the day, every day, and frequent bus routes run every 15 minutes or better most of the day, Monday through Saturday.

Frequent Service Network lines are intended to connect the regional hubs where many riders live and work. TriMet has also implemented a number of improvements on its frequent routes that include some or all of the following:

- New shelters and sign poles with service information and stop identification numbers
- Americans with Disability Act (ADA) compliant landings and curb ramps
- Bus stop re-spacing and curb extensions
- Better pedestrian access

- Traffic signal priority
- Bus-only lanes

PORTLAND, OR FREQUENT TRANSIT NETWORK

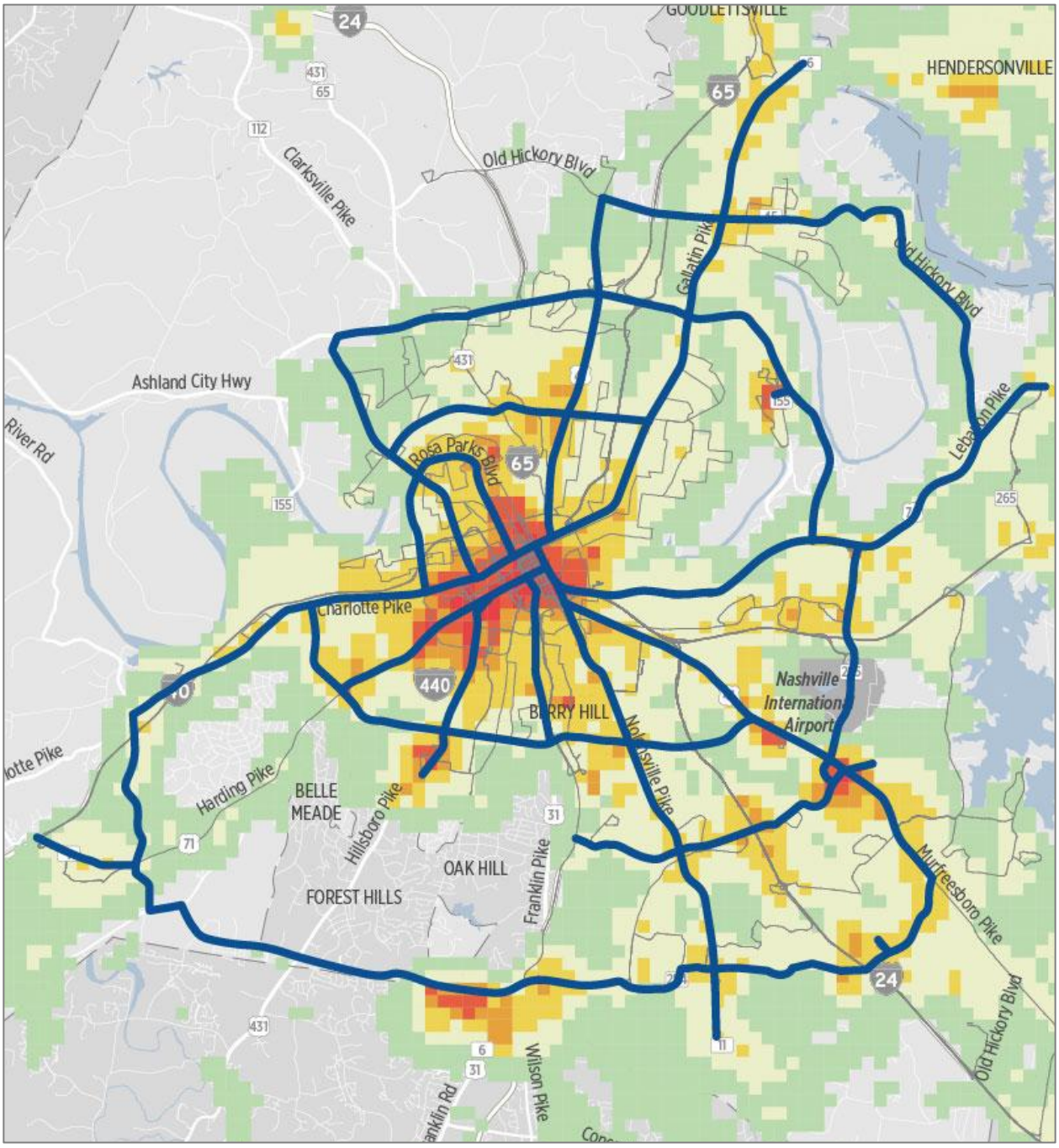


POTENTIAL NASHVILLE FREQUENT TRANSIT NETWORK

There are a number of ways that a Frequent Transit Network could be developed in Davidson County. NashvilleNext presented one concept that would extend "high capacity," or frequent, routes throughout the county that would include many circumferential or cross-town routes in outer areas (see following page). This network would serve the corridors and centers that NashvilleNext envisions will become denser and more developed over the long term and would improve both radial service and service to non-downtown locations.

A second and shorter-term approach (shown on the final page of this document) could be to focus on similar radial corridors but to limit cross-town services to higher demand areas. This approach also could be designed to improve service to and from downtown Nashville as well as cross-town connections but would focus initial improvements to areas where demand will be sufficiently high.

NASHVILLENEXT HIGH CAPACITY TRANSIT NETWORK



POTENTIAL NASHVILLE FREQUENT TRANSIT NETWORK THAT FOCUSES ON HIGHEST DEMAND AREAS