



## Contracting Commuter Rail Services

### DETAILS

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# TRANSIT COOPERATIVE RESEARCH PROGRAM

Sponsored by the Federal Transit Administration

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# Research Results Digest 112

## CONTRACTING COMMUTER RAIL SERVICES

This digest presents the results of TCRP Project G-14, “Contracting Commuter Rail Services.” The research was conducted by the Texas A&M Transportation Institute in association with ESH Consult; James Stoetzel; and Shelly Brown Associates, LLC.

### CHAPTER 1 INTRODUCTION

Commuter rail service commonly refers to passenger trains operated to carry riders living in suburban areas to and from work in city centers. Commuter rail often uses track shared with freight rail operations or track that was sold by a freight operator and may now be owned by the public transportation provider with an arrangement that allows for joint use by freight, intercity passenger, and commuter trains. Commuter rail has been part of the development and evolution of the rail mode in the United States since the Long Island Rail Road (LIRR) began operation in 1834.

Up through the late 1950s, commuter rail services were owned, operated, and paid for by the privately owned freight railroads. In the early 1960s, the private railroads reduced passenger operations drastically or eliminated the services all together. In a few cities, public agencies began to offer financial assistance to the railroads, either as direct operating grants or as purchase of service agreements. These early agreements often lacked any sort of performance standards or requirements. The agreements called for the railroad to keep operating the service and for the public agency to pay an agreed-upon amount for the operation.

Over the past 40 years, how commuter rail services are provided in the United States and Canada has changed considerably. The

commuter rail industry in North America today has grown to 31 systems serving 25 metropolitan areas in North America, including two new systems in 2016. Additional commuter rail projects in Colorado and California are in development. This expansion and evolution of commuter rail has led to a wide variety of strategies and approaches for managing the operation and maintenance of these services. Although some commuter rail agencies operate and maintain the rail service directly, most agencies contract for all or part of operating and maintenance services. The contracts may be with (1) the host freight railroad, (2) the National Railroad Passenger Corporation (Amtrak) in the United States or VIA Rail in Canada, or (3) an independent contractor.

### Objective

TCRP Project G-14, “Contracting Commuter Rail Services,” was designed to provide guidance to public agencies and other key stakeholders in contracting commuter rail services. Currently, there are no guidelines or generally recognized best practices to consider in determining how to provide a city or a metropolitan region with commuter rail service (by direct operation and/or by contract). The digest resulting from Project G-14 presents potential approaches, an evaluation of the approaches, and guidance on how and when to apply different

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approaches to existing and new services; documents current commuter rail practices and gaps in knowledge; and provides an overview of the commuter rail systems operating in the United States and Canada.

## Organization

This digest has five chapters as follows:

- Chapter 1 is the introduction and presents the digest organization.
- Chapter 2 provides information on the history and current status of commuter rail in North America.
- Chapters 3 and 4 provide a review of the regulatory environment for commuter rail in the United States and Canada, respectively.
- Chapter 5 discusses how each commuter rail agency approaches contracting for services.

A set of profiles for each of 31 commuter rail systems in the United States and Canada is available online at <http://tti.tamu.edu/group/transit-mobility/?p=1379>

## CHAPTER 2 OVERVIEW

This chapter provides (1) an overview of the commuter rail systems operating in the United States and Canada and (2) a recent history of the evolution of commuter rail service in the United States and Canada.

## Identification of Commuter Rail Systems

As late as the early 1980s, only a handful of U.S. cities were served by commuter rail. These included Boston, New York City/Connecticut, New York City/New Jersey, Philadelphia, Baltimore, Chicago, and San Francisco. Canada had such services in two cities: Montreal, dating back several decades, and Toronto since 1964. These commuter rail systems are grouped together as the legacy systems. Table 1 shows the 12 legacy systems operating commuter rail service in the United States and Canada.

Three generations of commuter railroad systems have been classified as New Starts: the first generation from 1989–1999, the second generation since 2000–2014, and the third generation in 2016. Two new commuter rail projects have been planned to open in 2016. Denver Regional Transit District (RTD) is scheduled to open commuter rail on three lines in 2016 (and plans a fourth line for 2018). The Sonoma-Marina Area Rail Transit (SMART) District plans to implement a passenger rail and bicycle-pedestrian pathway project in Marin and Sonoma Counties in Northern California. The project will serve a 70-mile corridor along the historic Northwestern Pacific Railroad alignment, with the first 43 miles planned to open in late 2016. Table 2 shows the 19 commuter rail systems that are New Starts.

**Table 1** Legacy Commuter Rail Systems in the United States and Canada

System	Service Area
Port Authority Trans-Hudson Corporation (PATH), Port Authority of New York and New Jersey	NYC and NJ
Massachusetts Bay Transportation Authority (MBTA)	Boston, MA
LIRR, New York Metropolitan Transportation Authority (NY-MTA)	NYC – Long Island, NY
Metro-North Commuter Railroad Company (Metro-North), NY-MTA	NYC – North and East NY
New Jersey Transit Rail Operations (NJ TRANSIT)	NJ – NYC
Southeastern Pennsylvania Transportation Authority, Regional Rail Division (SEPTA)	Philadelphia, PA
MARC Train Service (MARC), Maryland Transit Administration	Martinsburg, WV; Frederick, MD; Perryville, MD; Baltimore, MD – Washington, DC
Metra – Metropolitan Rail Corporation, Regional Transportation Authority (RTA)	Chicago, IL
South Shore Line, Northern Indiana Commuter Transportation District (NICTD)	South Bend, IN – Chicago, IL
Caltrain, Peninsula Corridor Joint Powers Board (PCJPB)	San Francisco – San Jose – Gilroy, CA
GO Transit, Greater Toronto Metropolitan Authority (Metrolinx)	Toronto, Ontario, Canada
Agence métropolitaine de transport (AMT)	Montreal, Quebec, Canada

**Table 2** New Start Commuter Rail Systems in the United States and Canada

<b>System: New Starts 1989–1999</b>	<b>Service Area</b>
Tri-Rail, South Florida Regional Transportation Authority (SFRTA)	Palm Beach, Broward, Miami-Dade Counties, FL
Shore Line East (SLE), Connecticut Department of Transportation (CTDOT)	New Haven – New London, CT
Metrolink, Southern California Regional Rail Authority (SCRRA)	Los Angeles, CA
Virginia Railway Express (VRE)	Northern Virginia – Washington, DC
COASTER, North County Transit District (NCTD)	San Diego County, CA
West Coast Express (WCE), South Coast British Columbia Transportation Authority (TransLink)	Vancouver, BC, Canada
Trinity Railway Express (TRE)	Dallas – Ft Worth, TX
Altamont Corridor Express (ACE), San Joaquin Regional Rail Commission (SJRR)	Stockton – San Jose, CA
<b>System: New Starts 2000–2014</b>	<b>Service Area</b>
Sounder, Central Puget Sound Regional Transit Authority (Sound Transit)	Tacoma – Seattle – Everett, WA
New Mexico Rail Runner Express, Rio Metro RTD (Rio Metro)	Albuquerque – Santa Fe, NM
Music City Star, Regional Transportation Authority of Middle Tennessee (Middle Tennessee RTA)	Nashville, TN
FrontRunner, Utah Transit Authority (UTA)	Ogden – Salt Lake City – Provo, UT
Westside Express Service (WES), Tri-County Metropolitan Transportation District of Oregon (TriMet)	Wilsonville – Beaverton, OR
Northstar Commuter Rail, Northstar Corridor Development Authority (NCDA)	St. Cloud – Minneapolis, MN
MetroRail, Capital Metropolitan Transportation Authority (Capital Metro)	Austin, TX
A-train, Denton County Transportation Authority (DCTA)	Denton County, TX
SunRail, Florida Department of Transportation (FDOT)	Central FL – Orlando, FL
<b>System: New Starts 2016</b>	<b>Service Area</b>
Denver RTD Commuter Rail	Denver, CO
Sonoma-Marín Area Rail Transit (SMART)	Sonoma and Marin Counties, CA

Figure 1 is a map of the locations of the 31 commuter rail systems in the United States and Canada expected to be in operation as of the end of 2016.

### History of Commuter Rail in the United States and Canada

How commuter rail service has been provided within the United States and Canada has changed over the past 4 decades. Before the 1960s, commuter rail systems were owned, operated, and paid for by privately owned freight railroad companies. Due in large part to declining ridership after World War II, many railroads discontinued or severely reduced the level of commuter service provided, which led to commuter rail passenger miles reaching the lowest point in the early 1960s. In order to maintain commuter rail service, public agencies first began to intervene in the operations of commuter

rail service in the early 1960s in the form of direct operating grants or purchase of service agreements. These early agreements between railroad operators and public agencies were simply exchanges of money for the continued commuter rail service, often for a set period of time. Although these agreements successfully maintained the commuter rail service, the agreements did not provide for quality of service through performance standards or other requirements. In many cases, the public agency did not provide any level of oversight of the commuter rail operation (Wilcock and Stoetzel 2013).

A 1958 agreement between the Commonwealth of Massachusetts and the New Haven Railroad provides an example of a direct operating grant typical for this period. Massachusetts agreed to pay the New Haven Railroad \$950,000 for 1 year of continued operation of the Old Colony Service from the South Shore into Boston. In 1964, the MBTA and



**Figure 1** Locations of commuter rail systems in the United States and Canada.

the Boston & Maine Railroad (B&M) entered into a purchase of service agreement that stipulated that B&M would continue to operate commuter services to and from the North Station in Boston, and MBTA would pay B&M the annual operating loss (Wilcock and Stoetzel 2013). The first year under this agreement resulted in a \$3.2 million payment from MBTA to B&M. As the agreement was simply for B&M to provide commuter rail service and no contractual provisions were made for capital improvements or performance standards, the service deteriorated noticeably in the 12 years the agreement was in effect (Wilcock and Stoetzel 2013).

In the 13-year period between 1970 and 1983, the U.S. Congress passed three acts that each impacted the operation of commuter rail. These three pieces of legislation helped to bring about the modern era of commuter rail in the United States:

- **Rail Passenger Service Act of 1970**

Also known as the Railpax Bill, the Rail Passenger Service Act of 1970 created the National Railroad Passenger Corporation, known com-

monly as Amtrak. A publicly funded entity, Amtrak assumed operations of almost all intercity passenger trains in the United States, removing the costs associated with operating *intercity passenger rail* from private freight railroads. Most of the remaining passenger services operated by freight railroad companies were commuter rail trains (Bing et al. 2010, Brock and Souleyrette 2013, Wilcock and Stoetzel 2013).<sup>1</sup>

- **Regional Rail Reorganization Act of 1973**

The Regional Rail Reorganization Act of 1973 created one new rail organization (the Consolidated Rail Corporation [Conrail]) to operate seven bankrupt railroads in the Northeast. Conrail's mission was to rationalize the seven carriers and turn them into a profit-generating

<sup>1</sup>The transfer of intercity passenger rail to Amtrak was voluntary. The freight railroads did not have to participate, but most did. The two exceptions were the Southern Railway, now known as Norfolk Southern, and the Denver Rio Grande and Western. Each continued to operate intercity passenger trains.

organization as soon as possible. In addition to the freight services that Conrail took over, the entity also inherited commuter rail operations in five cities/regions previously operated by the railroads that became part of Conrail. These included commuter rail service into South Station in Boston, commuter rail service into Grand Central Station in New York City, all commuter rail services in New Jersey and in Philadelphia, and part of one corridor in the Baltimore-Washington area. Unfortunately, the operation of multiple commuter lines proved to be an insurmountable challenge for Conrail, which led to the third piece of legislation that shaped the modern era of commuter rail (Bing et al. 2010, Brock and Souleyrette 2013, Wilcock and Stoetzel 2013).

• **Northeast Rail Service Act of 1981**

Among other provisions, the Northeast Rail Service Act (NRSA) of 1981 provided that Conrail would leave the business of operating commuter rail services. Most of this transition occurred on January 1, 1983, when Metro-North began operating service north and east of New York City into Grand Central Station; NJ TRANSIT began operating commuter rail ser-

vice in New Jersey; and SEPTA Regional Rail began operating commuter rail service in Philadelphia. As directed by Congress, the Maryland State Rail Administration took the commuter rail service on the Penn Line between Baltimore and Washington, DC, in the Northeast Corridor from Conrail and contracted with the newly created Amtrak Commuter subsidiary. Prior to the NRSA of 1981, MBTA took all south-side lines from Conrail and contracted to B&M in 1977. The NRSA established the current benchmark practice of commuter rail systems being under the governance of municipal and regional transit authorities (Brock and Souleyrette 2013, Wilcock and Stoetzel 2013).

Figure 2 is a timeline of the transition from private to public ownership of the 10 legacy commuter rail systems in the United States and 2 legacy commuter rail systems in Canada. Figure 2 also illustrates the timeline for New Start commuter rail systems: seven new commuter rail systems in the United States and one new commuter rail in Canada during the period 1989 to 1999, nine commuter rail systems in the United States between 2000 and 2014, and two rail lines opening in the United States in 2016.

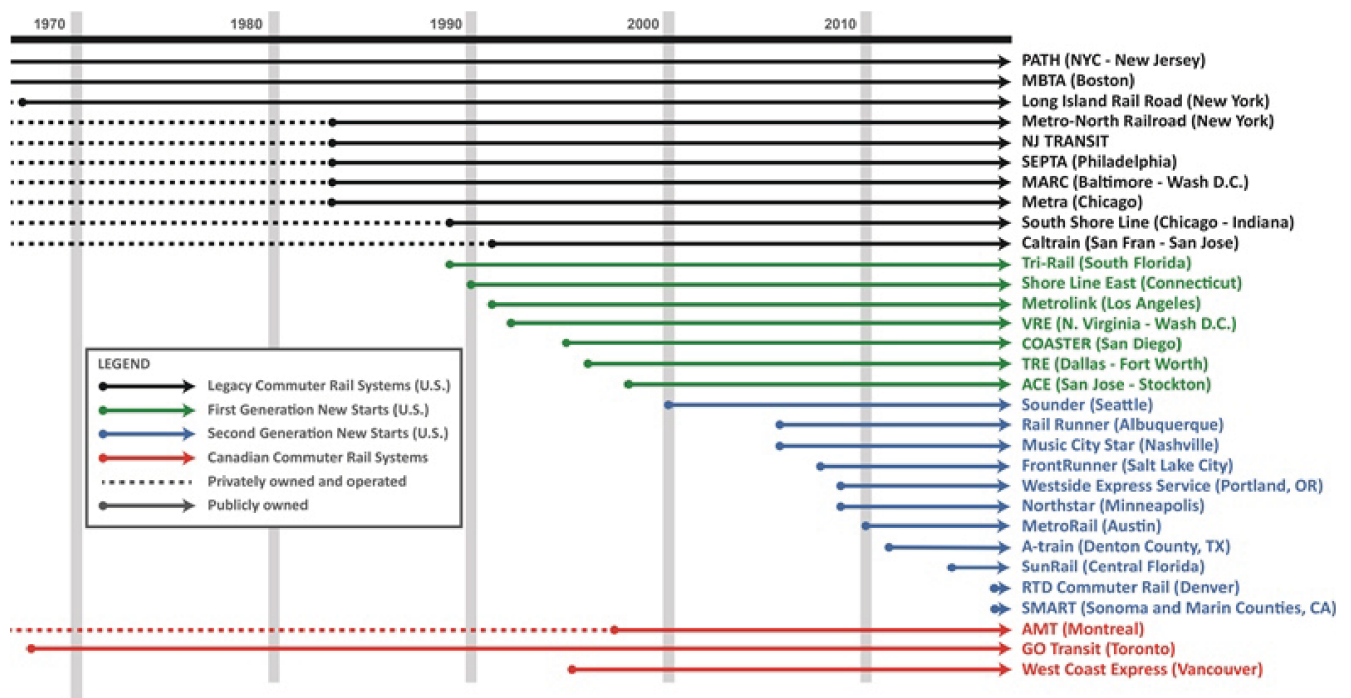


Figure 2 Timeline for public commuter rail service in North America.

The three legacy lines (PATH, MBTA, and LIRR) had all been publicly owned prior to NRSA (Brock and Souleyrette 2013, Wilcock and Stoetzel 2013):

- **Port Authority Trans-Hudson Corporation (PATH)**

The Port of New York Authority was established in 1921 to administer the common harbor interests of New York and New Jersey. The organization's name was changed to The Port Authority of New York and New Jersey in 1972. Once a part of the general railroad system, the rail service was originally known as the Hudson and Manhattan Railroad, and later as the H&M Hudson Tubes. In the 1950s and 1960s, the Port Authority acquired the private railroad and began operating as the PATH rail transit system in 1962.<sup>2</sup>

- **Massachusetts Bay Transportation Authority (MBTA)**

Soon after its inception in 1964, MBTA began subsidizing the commuter rail system to the north and west of Boston operated by B&M. This represented a change in policy because the MBTA predecessor agency, the Metropolitan Transit Authority (MTA), refused a request in 1950 to subsidize service south of Boston operated by the New Haven Railroad.<sup>3</sup>

In 1972, MBTA purchased the lines and rolling stock used in commuter rail service south and west of Boston from the bankrupt Penn Central Transportation Company (Penn Central). In 1976, in a similar transaction, the MBTA acquired the rail lines and rolling stock used in the service north and west of the city from the failing B&M. As part of the B&M acquisition, the MBTA contracted to continue the provision of the north and west service with B&M under a 5-year agreement. In 1977, MBTA used this same contracting model to take the commuter rail service from Penn Central successor Conrail

and turn the service over to the B&M under a parallel agreement. In 1982, MBTA converted the two agreements with B&M to a single agreement for both commuter rail services.

- **Long Island Rail Road (LIRR)**

The LIRR was incorporated as a privately held railroad company in 1834. In 1966, the New York Metropolitan Transportation Authority (New York MTA) acquired all of the capital stock of the LIRR from its parent, the Pennsylvania Railroad Company. In February 1980, the LIRR's certificate of incorporation was amended to convert the LIRR into a subsidiary of the New York MTA.

This era of change also affected many of the other legacy systems, which in most cases took on new models for service delivery. In many cases, these new models involved a transfer of the ownership of assets from the private to the public sector in the decade following NRSA. Successor service providers included

- **Metro-North Railroad (Metro-North)**

Metro-North Railroad was incorporated by the New York MTA in September 1982 as a subsidiary public benefit corporation. New York MTA assumed operational responsibility from Conrail for commuter rail service into Grand Central Station from north and east of New York on January 1, 1983, as an outcome of NRSA.

- **New Jersey Transit Rail Operations**

The New Jersey Public Transportation Corporation created New Jersey Transit Rail Operations, Inc., on January 1, 1983, to assume operations of commuter rail in the state of New Jersey from Conrail pursuant to NRSA.

- **Southeastern Pennsylvania Transportation Authority (SEPTA)**

Soon after the Commonwealth of Pennsylvania established SEPTA in 1964, the agency began subsidizing commuter rail lines operated by the Pennsylvania Railroad (PRR) and the Reading Company (RDG). On February 1, 1968, the PRR merged with the New York Central Railroad to form Penn Central Railroad (Penn Central), which took over the operation of the commuter lines operated by the PRR. In 1976, Conrail took over bankrupt Penn Central and RDG and continued to operate commuter rail through 1982. On January 1, 1983, SEPTA assumed operational responsibility from Conrail following NRSA.

<sup>2</sup>PATH is a heavy rail system, considered as part of the commuter rail family because PATH is subject to oversight by FRA for safety of rail operations. All PATH employees are subject to the Railroad Retirement Tax Act (RRTA) and the Railroad Unemployment Insurance Act (RUIA), as are private railroads that operate commuter rail service.

<sup>3</sup>By 1958, the New Haven Railroad announced commuter rail services would cease running. A subsidy from the Commonwealth of Massachusetts kept trains running until 1959 when the Southeast Expressway opened and the New Haven Railroad abandoned commuter rail service on three lines.

- **MARC Train Service**

Commuter rail service from Maryland to Union Station in Washington, DC, has operated since the 1830s on the Camden Line, and since the mid to late 1800s on the Penn and Brunswick Lines. The Maryland Department of Transportation (MDOT) began to subsidize the Baltimore and Ohio (B&O) Railroad to operate the Camden and Brunswick Lines in 1974. The state then entered into an operating agreement with the B&O in 1975 to cover the full operating deficit, rolling stock, and station maintenance. The state entered into a similar operating agreement with Conrail to subsidize the Penn Line in 1976. The MARC brand was first used in 1983 when the Maryland State Railroad Administration (MSRA) took over the Camden and Brunswick Lines from an independent private freight entity following NRSA. MSRA also took the commuter rail service on the Penn Line from Conrail and contracted with the Amtrak Commuter subsidiary. MSRA merged with the Maryland Transit Administration (MTA), Maryland Department of Transportation in 1992.

- **Metropolitan Rail Corporation (Metra)**

Metra is the commuter rail division of the Regional Transportation Authority (RTA), serving the Chicago metropolitan area. Created in 1974, RTA assumed financial responsibility for the commuter operations of several private railroads in the Chicago metropolitan region, eventually buying the tracks of some of those railroads. RTA created a commuter rail division to operate the rail lines in 1982. Two major exceptions to this model were the services operated by the Burlington Northern Railroad (now Burlington Northern Santa Fe [BNSF]) on one line and the Chicago & North Western Railroad (C&NW) (later purchased by Union Pacific Railroad) on three lines. These two private railroads retained ownership of the rail lines and rolling stock, and Metra contracted with the private railroad for commuter rail service through purchase of service agreements.

The Commuter Rail Service Board was created in 1983 to oversee commuter rail operations. Given the complicated and patchwork nature of commuter rail at the time, the Commuter Rail Service Board approved Metra as a service mark for the entire system (short for Metropolitan Rail) in 1984. The idea was to bring a

unifying identity to all the various components, no matter who owned or operated them.

- **South Shore Line**

The South Shore Line is an electrically powered interurban commuter rail line operated by the Northern Indiana Commuter Transportation District (NICTD) between Millennium Station in downtown Chicago and South Bend International Airport in South Bend, Indiana. Service began in September 1903. Over the years, the service transferred hands from one private railroad to another. NICTD was formed in 1977 to fund the service and took over operation in December 1989.

- **Caltrain**

The original peninsula railroad corridor between San Francisco and San Jose was constructed in 1863 by the San Francisco and San Jose Rail Road. Southern Pacific Railroad (SP) purchased the corridor in 1870. The California Department of Transportation (Caltrans) began to subsidize the SP operation in 1980. In 1987, the Peninsula Corridor Joint Powers Board (PCJPB) was formed to manage the line. PCJPB purchased the railroad right-of-way from SP in 1991. The service was branded as Caltrain in 1997.

The two Canadian legacy commuter rail transit services are the following:

- **GO Transit**

GO Transit is the regional public transit service for the Greater Toronto and Hamilton Area, part of the Greater Toronto Transportation Authority (Metrolinx). GO Trains and GO Buses serve a population of 7 million in an 11,000-square-kilometre area. GO Transit connects with every municipal transit system in the Greater Toronto and Hamilton areas, including the Toronto Transit Commission. GO Transit began regular rail passenger service in 1967. Prior to 1967, the Canadian National Railway Company (CN) provided commuter rail service in the region.

- **Agence métropolitaine de transport (AMT) (Metropolitan Transportation Agency)**

AMT is a regional public transportation provider in the Greater Montreal region in Canada and coordinates the commuter rail system composed of six lines and 71 stations. From 1982 to 1997, the commuter rail service was managed by



the Montreal Urban Community Transit Commission, which continues to oversee Montreal's Metro (a rubber-tired, underground rail system) and bus routes. Prior to 1982, the legacy commuter rail system was operated by CN and the Canadian Pacific Railway (CP).

The modern era of commuter rail was born in the period after NRSA, as the commuter rail systems that transitioned from private to public ownership had the option of either contracting with other entities to operate the commuter rail service or bringing operations in house. During this period, Metro-North, New Jersey Transit, and SEPTA chose to transition to in-house operations. MBTA chose a different strategy. As mentioned previously, MBTA contracted the maintenance and operation of Conrail-operated lines in Boston to B&M prior to NRSA (Wilcock and Stoetzel 2013). Metra in the Chicago area directly operates commuter rail service on its own lines and also contracts for commuter rail service through purchase of service agreements with the Union Pacific Railroad (three lines) and BNSF (one line).

Commuter rail experienced its first real growth in the United States between 1989 and 1999. In January 1989, the Tri-Rail commuter rail service began operation between West Palm Beach and Miami, FL. This was the first New Start commuter rail service in the United States. Within a few years, additional New Start systems had begun operations in Los Angeles and Northern Virginia, both as contract operations. Seven U.S. commuter rail systems and one Canadian commuter rail system are grouped as New Starts 1989–1999:

- **Tri-Rail**

The Tri-County Commuter Rail Authority (TCRA) in South Florida began commuter rail service from West Palm Beach to Miami in January 1989. Tri-Rail was the first New Start commuter rail service in the United States. The Florida Legislature passed legislation transforming the TCRA into the South Florida Regional Transportation Authority (SFRTA) in 2003. SFRTA was authorized to develop and implement regional transportation solutions in South Florida and assumed responsibility for the Tri-Rail commuter service in 2003.

- **Shore Line East (SLE)**

Operated by the Connecticut Department of Transportation (CTDOT), SLE is a commuter rail service between New Haven and New Lon-

don with select trains continuing to Bridgeport and Stamford. SLE commuter operations began in 1990.

- **Metrolink**

The Southern California Regional Rail Authority (SCRRA) governs Metrolink. SCRRA is a joint powers authority that formed in 1991 and comprises five county agencies tasked with reducing highway congestion and improving mobility throughout Southern California. The five agencies are Los Angeles County Metropolitan Transportation Authority (Metro), Orange County Transportation Authority (OCTA), Riverside County Transportation Commission, San Bernardino Associated Governments, and Ventura County Transportation Commission.

SCRRA opened the Metrolink regional commuter rail system on three lines in 1992. Four additional lines opened between 1993 and 2002. Metrolink operates on lines owned by member local governments and two private railroads, BNSF Railway and Union Pacific Railroad (UPRR). The freight railroads provide track and maintenance right-of-way on the lines they own, and Metrolink contracts for these functions on the remaining lines.

- **Virginia Railway Express (VRE)**

VRE is a transportation partnership of the Northern Virginia Transportation Commission and the Potomac and Rappahannock Transportation Commission. VRE provides commuter rail service from the Northern Virginia suburbs to downtown Washington, DC. VRE opened service on two lines in 1992.

- **COASTER**

COASTER is the North County Transit District (San Diego County, CA) commuter rail service from Oceanside to San Diego, CA. COASTER opened in 1995.

- **West Coast Express (WCE)**

TransLink in Vancouver, BC, opened WCE in 1995. The commuter rail links Mission, Maple Ridge, Pitt Meadows, Port Coquitlam, Coquitlam, and Port Moody with Waterfront Station in downtown Vancouver. Commuters can transfer between WCE and SkyTrain rapid transit, SeaBus, and other public transportation services at the Waterfront Station.

- **Trinity Railway Express (TRE)**

The Trinity Railway Express (TRE) is a 36-mile commuter rail service linking down-

town Dallas and Fort Worth, TX. The Fort Worth Transportation Authority (FWTA) and Dallas Area Rapid Transit (DART) jointly own and operate the rail service. TRE opened in 1996.

- **Altamont Corridor Express (ACE)**

ACE service starts in Stockton, CA, in San Joaquin County, travels through Alameda County, and terminates in San Jose, CA, in Santa Clara County. ACE service operates under the governance of the San Joaquin Regional Rail Commission (SJRRC). ACE began operations in 1998.

The 21st century ushered in another era for commuter rail New Starts. Between 2000 and 2016, 11 New Starts have begun service in states from Florida to Washington and from Texas to Minnesota:

- **Souder**

Central Puget Sound Regional Transit Authority, commonly known as Sound Transit, began operating the Souder commuter rail service in 2000. Souder commuter rail operates from Lakewood in Pierce County through Seattle in King County, to Everett in Snohomish County in the State of Washington.

- **New Mexico Rail Runner Express (Rail Runner)**

The New Mexico Rail Runner Express (Rail Runner) is that state's first commuter rail service. Inaugurated in 2006, Rail Runner operates from Belen to Albuquerque to Santa Fe, providing service to 14 stations in Valencia, Bernalillo, Sandoval, and Santa Fe Counties. Rio Metro RTD (Rio Metro) manages day-to-day service.

- **Music City Star**

The Music City Star connects downtown Nashville to Lebanon in Wilson County, TN. The Music City Star was launched in 2006 by the Regional Transportation Authority of Middle Tennessee.

- **FrontRunner**

FrontRunner is a commuter rail system operated by the Utah Transit Authority (UTA). UTA began operating FrontRunner in 2008 to connect Provo and Orem in Salt Lake County (south), Pleasant View and Ogden in Weber County (north), and towns in Davis County (north) to Salt Lake City, UT.

- **Westside Express Service (WES)**

WES is a commuter rail line operated by the Tri-County Metropolitan Transportation District

of Oregon (TriMet). WES connects suburban cities Wilsonville, Tualatin, Tigard, and Beaverton to the regional TriMet bus and light rail service at the Beaverton Transit Center. The commuter rail corridor does not go to downtown Portland. TriMet opened WES service in 2009.

- **Northstar**

Northstar is a commuter rail system operated by the Northstar Corridor Development Authority, a public entity established to plan and deliver commuter rail services between St. Cloud and Minneapolis, MN. Northstar opened for service in 2009 and now operates between Minneapolis and Big Lake with plans to extend to St. Cloud.

- **MetroRail**

The Capital Metropolitan Transportation Authority (Capital Metro) in Austin, TX, began operating MetroRail commuter rail in 2010 from Leander to downtown Austin.

- **A-train**

The A-train is a commuter rail service provided by the Denton County Transportation Authority (DCTA) from Denton and Lewisville in Denton County, TX, to Carrollton in Dallas County, TX. In Carrollton, commuter rail passengers can transfer to DART light rail and bus transit at the DART Trinity Mills Station. DCTA began A-train operations in 2011.

- **SunRail**

FDOT, in cooperation with Volusia, Seminole, Orange, and Osceola Counties; the Central Florida Regional Transportation Authority (LYNX); and the City of Orlando, is providing SunRail commuter rail service in the four-county corridor that extends north and south of Orlando. SunRail service began in 2014. FDOT will manage SunRail for the first 7 years of revenue operation. In 2021, FDOT will transition the operations and management of SunRail to the Central Florida Commuter Rail Commission composed of five members representing Volusia, Seminole, Orange, and Osceola Counties and the City of Orlando.

- **Denver RTD Commuter Rail**

The Denver RTD opens a new commuter rail system in 2016. When complete, the commuter rail system will have four lines that converge at Denver Union Station. The East Rail Line (opening in April 2016 as the University of Colorado A Line) will operate between Denver International

Airport and Union Station. Two additional rail lines will open in 2016 and a fourth in 2018.

- **SMART**

The Sonoma-Marín Area Rail Transit (SMART) District is the regional transportation district established in 2002 to oversee the development and implementation of passenger rail service in Sonoma and Marin Counties in California. A passenger rail and bicycle-pedestrian pathway will follow a 70-mile corridor along

the historic Northwestern Pacific Railroad alignment. The first 43-mile segment is scheduled to open in late 2016.

## Scale of Operations

Table 3 provides data on the size of the commuter rail systems according to the number of commuter rail lines, and the unlinked passengers, passenger rail car revenue miles, and operating

**Table 3** Commuter Rail Systems – Scale of Operations

Commuter Rail System	Age	Number of Rail Lines	2014 Unlinked Passengers in 000s	2014 Passenger Car Revenue Miles in 000s	2014 Operating Expenses in 000s	2014 Operating Expense/Passenger
LIRR	Legacy	Multi (11)	97,870	66,616	\$1,302,985	\$19.56
Metro-North	Legacy	Multi (5)	84,464	68,059	\$1,154,912	\$16.97
NJ TRANSIT	Legacy	Multi (10)	85,639	62,875	\$961,805	\$15.30
Metra	Legacy	Multi (11)	74,382	43,187	\$678,128	\$15.70
PATH	Legacy	Multi (4)	83,070	13,290	\$391,723	\$28.26
Go Transit	Legacy	Multi (7)	56,000	21,000	\$274,000	\$4.89
SEPTA	Legacy	Multi (13)	37,690	19,048	\$252,456	\$13.25
MBTA	Legacy	Multi (14)	35,252	23,332	\$380,941	\$16.33
AMT	Legacy	Multi (6)	17,569	5,970	\$139,717	\$7.95
Caltrain	Legacy	Single	17,760	6,776	\$109,320	\$16.13
Metrolink	1990s	Multi (7)	13,429	13,214	\$197,419	\$14.94
MARC	Legacy	Three (3)	9,168	5,864	\$136,203	\$23.23
VRE	1990s	Two (2)	4,432	2,090	\$65,764	\$31.46
Tri-Rail	1990s	Single	4,401	3,423	\$64,520	\$18.85
FrontRunner	2000s	Single	4,469	5,333	\$43,095	\$8.08
South Shore Line	Legacy	Single	3,614	3,695	\$44,361	\$12.01
Sounder	2000s	Single	3,361	1,604	\$40,140	\$25.03
WCE	1990s	Single	2,750	920	\$32,100	\$11.67
TRE	1990s	Single	2,284	1,152	\$25,886	\$22.47
COASTER	1990s	Single	1,674	1,395	\$19,308	\$13.84
Rail Runner	2000s	Single	1,083	1,384	\$27,443	\$19.83
ACE	1990s	Single	1,076	950	\$15,523	\$16.33
SLE	1990s	Single	922	1,870	\$30,962	\$16.56
MetroRail	2010s	Single	764	280	\$15,810	\$56.51
Northstar	2000s	Single	721	529	\$15,239	\$28.82
A-train	2010s	Single	568	624	\$12,403	\$19.87
WES	2000s	Single	512	163	\$6,813	\$41.70
Music City Star	2000s	Single	243	200	\$4,332	\$21.68
SunRail*	2010s	Single	170	99	\$25,134	\$252.72
Denver RTD	2010s	Multi (3 in 2016, 4 in 2018)				
SMART	2010s	Single (2016)				

SOURCE: For U. S. systems, data are from 2014 NTD. For Canadian systems, data are from Canadian Urban Transit Association or the transit agency reports for Canadian systems. GO Transit data are from 2012 and 2013 reports. AMT data are from 2013 report.

\*SunRail service began May 1, 2014. Data are for a partial year.

expense as reported to the 2014 National Transit Database (NTD) for U.S. systems and either the Canadian Urban Transit Association or agency publications for Canadian systems. The final data point is the calculated operating expense per passenger (2014) to provide a measure of cost-effectiveness. The age of each system (by generation) is provided as relevant context.

A profile for each of the 31 commuter rail systems in the United States and Canada is available at <http://tti.tamu.edu/group/transit-mobility/?p=1379>

## CHAPTER 3 REGULATORY ENVIRONMENT FOR COMMUTER RAIL IN THE UNITED STATES

Three federal agencies in the U.S. DOT are responsible for different aspects of passenger rail service in the United States: the Federal Railroad Administration (FRA), the Federal Transit Administration (FTA), and the Surface Transportation Board (STB). The following is a brief description of each agency's role:

- **FRA**—FRA requires and ensures compliance with safety regulations established for the transportation of passengers on the general railroad system (49 CFR Part 200 through Part 299). FRA regulations are designed to promote safety on railroads, including track maintenance, inspection and equipment standards, and operating practices. All freight railroads, intercity passenger rail (Amtrak), and commuter rail operations on this system are subject to FRA regulations (GAO 2009).
- **FTA**—In the United States, commuter rail systems are under the jurisdiction of FRA, but receive substantial capital funding from FTA. Through the terms and conditions placed on grants for urbanized area formula funding (49 U.S.C. Section 5307), major capital projects (49 U.S.C. Section 5309), and the state of good repair program (49 U.S.C. Section 5337), FTA works actively with commuter railroads to ensure safety in design, engineering, construction, operation, and procurement of commuter rail vehicles. Both FRA and FTA provide technical assistance and training to commuter rail professionals on safety and security issues (FTA 2006).

- **STB**—STB is responsible for the economic regulation of interstate surface transportation within the United States. The agency's primary focus is on the freight railroad industry; however, STB has the authority to mediate compensation and access disputes between freight railroads and Amtrak. Additionally, the Passenger Rail Investment and Improvement Act (PRIIA) of 2008 gives STB authorization to mediate track use disputes between public transit authorities, including commuter rail agencies and host railroads (GAO 2009).

The following sections detail the regulatory responsibilities for each of the above federal agencies.

### FRA

FRA's mission is to enable the safe, reliable, and efficient movement of people and goods. FRA accomplishes this mission primarily through issuance, implementation, and enforcement of safety regulations; selective investment in rail corridors across the country; and research and technology development. FRA regulates 640 freight railroads, 8 switching terminals, Amtrak intercity passenger rail service, the Alaska Railroad, and 28 commuter rail systems. FRA also provides oversight for tourist, scenic, excursion, and historic railroads in the United States (FRA 2015).

#### *Role and Regulatory Responsibility*

The primary role of FRA is to enforce rail safety regulations on all rail operations in the United States. The U.S. Congress authorized FRA to exercise safety jurisdiction over all railroad operations through the Federal Railroad Safety Act (the Safety Act) of 1970 (49 U.S.C. §20109), with further clarification of FRA's jurisdiction in the 1982 and 1988 amendments to that act. U.S. Federal Railroad Safety Enforcement Procedures are codified as 49 CFR 209.

*Regulatory Jurisdiction: General Railroad System.* The primary determinant that triggers FRA's regulatory jurisdiction is whether the railroad operations are part of or connected to the general railroad system. The general railroad system of transportation refers to the network of standard gauge track over which goods may be transported throughout the nation, and passengers may travel between cities

and within metropolitan and suburban areas. Much of this network is interconnected, so that a rail vehicle can travel across the nation without leaving the system (49 CFR Appendix A to Part 209, 2014).

Even if a portion of a rail network lacks a physical connection, FRA may determine that portion of the rail network is still part of the general railroad system by virtue of the nature of operations and thus will be subject to FRA's regulatory jurisdiction (49 CFR Appendix A to Part 209, 2014). Two examples of railroad operations that are part of the general system, even though they lack a physical connection, are the Alaska Railroad and intercity high-speed rail systems with their own right-of-way.

The types of railroad operations that will trigger FRA regulatory jurisdiction, regardless of a connection to the general system include movement of the following:

- Freight cars in trains outside the confines of an industrial installation
- Intercity passenger trains
- Commuter trains within a metropolitan or suburban area

An exception is the Port Authority Trans-Hudson Corporation. PATH is a heavy-rail urban transit system, considered a part of the commuter rail family because PATH is subject to oversight by the FRA for safety of rail operations. All PATH employees are subject to the Railroad Retirement Tax Act (RRTA) and the Railroad Unemployment Insurance Act (RUIA), as are private railroads that operate commuter rail service.

*Intercity Passenger Rail Operations (Amtrak).* FRA exercises jurisdiction over all intercity passenger operations. Due to the nature of the service and the standard gauge, intercity operations are all considered part of the general railroad system, even if not physically connected to other portions of the general railroad system (49 CFR Appendix A to Part 209, 2014).

*Commuter Rail Operations.* FRA exercises jurisdictional authority over all commuter rail operations. A commuter rail system's connection to other railroads is not relevant under the rail safety statutes because FRA considers commuter rail to be part of the general railroad system regardless of such connections. FRA will presume that an operation is a commuter railroad if there is a statutory determination that Con-

gress considers a particular service to be commuter rail (i.e., defined as such in NRSA, where Congress listed specific commuter authorities) or if the operation has the following characteristics:

- The system serves an urban area, its suburbs, and more distant outlying communities in the greater metropolitan area.
- The system's primary function is moving passengers back and forth between their places of employment in the city and their homes within the greater metropolitan area, and moving passengers from station to station within the immediate urban area is, at most, an incidental function.
- The vast bulk of the system's trains are operated in the morning and evening peak periods with few trains at other hours (49 CFR Appendix A to Part 209, 2014).

*High-Speed Rail.* FRA's safety jurisdiction includes high-speed ground transportation systems that connect metropolitan areas, regardless as to whether they use new technologies not generally associated with traditional railroads.

*Urban Rapid Transit Operations Excluded from FRA Jurisdiction.* Only short-haul passenger services classified as urban rapid transit that are not connected to the general railroad system are excluded from FRA's jurisdiction and fall under regulatory jurisdiction of the FTA (49 CFR Appendix A to Part 209, 2014). An exception is PATH, as explained above. PATH is a heavy-rail urban transit system, subject to oversight by FRA because the rail system was once a part of the general railroad system.

#### *FRA Office of Railroad Safety*

FRA's Office of Railroad Safety regulates safety throughout the nation's railroad industry. The Office has staff, assigned to 14 divisions, that serve as technical experts on matters of railroad safety, provide technical assistance to field personnel, and help develop regulations and evaluate waiver submittals.

The divisions within the Office of Railroad Safety reflect the scope of the FRA safety oversight responsibility:

- Hazardous Materials Division
- Highway-Rail Crossing and Trespasser Programs Division

- Industrial Hygiene Division
- Motive Power and Equipment Division
- Operating Practices Division
- Passenger Rail Division
- Rail and Infrastructure Integrity Division
- Railroad Safety Information Management Division
- Railroad Safety Program Management Division
- Railroad Safety Technical Training Standards Division
- Risk Reduction Program Division
- Safety Regulatory Analysis Division
- Signal and Train Control Division
- Track Division

FRA's Passenger Rail Division provides technical expertise and direction in the development and implementation of rail safety programs applicable to commuter and passenger railroads, as well as advice and oversight in the following areas: system safety; passenger train emergency preparedness; shared use; New Start commuter and passenger railroads; procurement of rolling stock; high-speed rail; and tourist, scenic, excursion, and historic railroads. The Division also provides technical support to regional staff regarding enforcement matters affecting commuter and passenger railroads.

The FRA Rail and Infrastructure Integrity Division is responsible for bridge and structure safety oversight. Through its field enforcement staff, the Division participates in bridge accident investigations, performs bridge assessments and bridge management program reviews, and provides direction and technical advice in bridge inspection, maintenance, and management. In addition, the Bridge and Structures Section provides guidance on Railroad Bridge Worker Safety.

FRA executes its regulatory and inspection responsibilities through a staff of about 400 safety inspectors in eight regional offices. Each regional office employs FRA safety managers and safety inspectors for six safety disciplines focusing on compliance and enforcement in the following areas:

- Hazardous materials
- Motive power and equipment
- Operating practices
- Signal and train control
- Track
- Grade crossing safety

### *Recent Legislation*

Recent national legislation that addresses the regulatory role and responsibilities of FRA include the following acts.

*Passenger Rail Investment and Improvement Act of 2008.* PRIIA 2008 reauthorizes the National Railroad Passenger Corporation (Amtrak) and strengthens the U.S. passenger rail network by tasking Amtrak, the U.S. DOT, FRA, states, and other stakeholders to improve service, operations, and facilities. PRIIA focuses on intercity passenger rail, including Amtrak's long-distance routes and the Northeast Corridor, state-sponsored corridors throughout the nation, and the development of high-speed rail corridors.

*Rail Safety Improvement Act of 2008 (RSIA).* In response to several fatal rail accidents between 2002 and 2008, Congress passed the Rail Safety Improvement Act of 2008. RSIA directs FRA to, among other things, promulgate new and/or revised safety regulations. These new regulations govern various areas related to railroad safety, including amended hours of service requirements for railroad workers, positive train control implementation, enhanced standards for track inspections, certification of conductors, and a greater emphasis on safety at highway-rail grade crossings.

### **FTA**

FTA, an agency within the U.S. DOT, provides financial and technical assistance to local public transportation systems. Public transportation includes buses, subways, light rail, commuter rail, monorail, passenger ferry boats, trolleys, inclined railways, and people movers. The federal government, through FTA, provides financial assistance to develop new transit systems and improve, maintain, and operate existing systems. FTA oversees grants to state and local transit providers, primarily through its 10 regional offices. These grantees are responsible for managing their programs in accordance with federal requirements, and FTA is responsible for ensuring that grantees follow federal mandates along with statutory and administrative requirements (FTA 2015).

### *Role and Regulatory Responsibility of FTA*

FTA's primary role is to provide financial and technical assistance to states and local public transportation agencies in order to develop new transit systems and improve, maintain, and operate existing systems. FTA provides federal funding for passenger rail through various grants made to state and local transit providers (grantees). The state and local transit providers are responsible for managing their public transportation programs in accordance with federal requirements. FTA, which finances a significant portion<sup>4</sup> of the capital expenditure for transit systems nationwide, is responsible for ensuring that grantees follow federal mandates along with statutory and administrative requirements.

Each grant recipient must sign an FTA Master Agreement that includes obligations for how the transit agency will administer and manage federal funds and also how the transit agency will meet additional statutory and administrative requirements. Responsibilities addressed in the Master Agreement include, but are not limited to, the following topics:

- Approved Project Budget
- Federal Funding
- Local Share
- Payments to the Recipient
- Project Records and Reports
- NTD
- Record Retention
- Civil Rights
- Americans with Disabilities Act (ADA)
- Planning
- Private Enterprise
- Preference for U.S. Products and Services
- Procurement
- Leases
- Patent Rights
- Rights in Data and Copyrights
- Transit Asset Management
- Use of Real Property, Equipment, and Supplies
- Insurance
- Relocation
- Real Property
- Construction
- Employee Protections

- Environmental Protections
- Energy Conservation
- State Management and Monitoring Systems
- Charter Service
- School Bus Operations
- Public Transportation Safety Program
- Motor Carrier Safety
- Safe Operation of Motor Vehicles
- Freedom of Information Act (FOIA)

### *FTA's Regulatory Jurisdiction for Safety of Public Transportation*

Prior to the 2012 passage of the federal authorization bill to fund surface transportation, Moving Ahead for Progress in the 21st Century Act (MAP-21), FTA had been prohibited by law from issuing basic safety standards to protect rail transit passengers and rail workers. The passage of MAP-21 granted FTA the authority to establish and enforce a new comprehensive framework to oversee the safety of public transportation *not* under the explicit jurisdiction of FRA throughout the United States (FTA 2014). The safety program in MAP-21 was reauthorized in the Fixing America's Surface Transportation (FAST) Act in 2015.

Under MAP-21 and the FAST Act, FTA is responsible for ensuring compliance with the following:

- Vehicle safety performance standards (for transit vehicles not regulated by any other federal agency).
- A public transportation safety certification training program that applies to transit grantees, regardless of mode. The program is required for all personnel who conduct audits and employees of agencies responsible for safety oversight.
- Transit agency safety plans for all FTA grant recipients. At a minimum, these plans must include
  - Strategies for identifying risks and minimizing exposure to hazards.
  - An adequately trained safety officer to report directly to the general manager or equivalent.
  - Performance targets based on the safety performance criteria above.
  - A staff training program.
- State Safety Oversight (SSO) program for each state with rail systems *not* FRA regulated.

The expanded regulatory authority for FTA regarding safety oversight of public transportation

<sup>4</sup>In the 2014 NTD, transit systems in the United States reported \$17.5 billion in capital funds applied, of which \$7.3 billion or 42% were federal funds. Approximately \$6.7 billion of the federal funds were made available through FTA.

does not include passenger rail services explicitly under the regulatory authority of FRA (FTA 2014, 49 U.S.C. Section 5329, and MAP-21 § 20021 2014).

*FTA State Safety Oversight for Rail Fixed Guideway.* On March 16, 2016, FTA published the State Safety Oversight Program final rule (SSO rule) to increase oversight responsibilities of State Safety Oversight Agencies (SSOAs) for rail transit systems. Reflecting the new statutory safety authority established by MAP-21, the SSO rule replaces existing regulations and significantly strengthens an SSOA's authority to prevent and mitigate accidents and incidents on rail transit systems to help ensure the safety of riders and workers. Each SSOA is now required to have the enforcement authority, legal and financial independence from the agencies it oversees, and human resources necessary for overseeing the number, size, and complexity of the rail transit agencies within its jurisdiction. In addition, SSOAs must train and certify personnel responsible for performing safety oversight activities and will continue to conduct triennial audits of the safety programs established by each rail transit system.

*FTA Public Transportation Safety Plan.* On August 14, 2015, FTA announced a proposed rule to establish a Public Transportation Safety Plan that would create an overall framework for FTA to monitor, oversee, and enforce safety in the public transit industry, based on the principles and practices of Safety Management Systems (SMS) that focus on organization-wide safety policy and accountability, proactive hazard identification, and risk-based decision making. As of April 2016, FTA has not issued final rulemaking.

The proposed rule will implement FTA's authority to conduct inspections, audits, and examinations, including testing of equipment, facilities, and rolling stock; and the authority to take appropriate enforcement actions, including directing the use or withholding of federal funds and issuing directives and advisories. The rule will establish SMS as the foundation for FTA's safety program and identify the proposed contents of a National Public Transportation Safety Plan (National Safety Plan). The National Safety Plan includes safety performance criteria for all modes of public transportation, minimum safety performance standards for transit vehicles used in revenue operations, the definition of "state of good repair," a Safety Certification Training Program, and other content determined by FTA.

## STB

The primary role of STB is to provide economic oversight of the nation's rail system. STB, which is bipartisan and independent, has regulatory jurisdiction over the following areas:

- Railroad rate reasonableness
- Mergers
- Line acquisitions
- New rail line construction
- Abandonments of existing rail lines
- Conversion of rail rights-of-way into hiking and biking trails (Elliott et al. 2013)

Although most of STB's jurisdiction revolves around freight rail, STB has some oversight for passenger rail operations and the intercity bus industry. One area of oversight that STB exercises pertains to on-time performance. Section 207 of PRIIA 2008 provided both FRA and STB with increased powers and responsibilities in the area of performance monitoring. STB, along with FRA and Amtrak, has been tasked with developing performance measures for intercity passenger rail service. Additionally, Section 213 of PRIIA states that STB may investigate service quality on any corridor where on-time performance is in violation of those established performance standards (Bing et al. 2010). As on-time performance continues to be an area of great importance to the economic well-being of the passenger rail industry, STB announced in May 2015 that the agency will begin proceeding to define on-time performance with regard to intercity passenger rail following a series of events surrounding the constitutionality of Section 207 of PRIIA in the federal courts, as well as a petition filed by the Association of American Railroads (AAR) requesting a rulemaking on this matter (STB 2015).

In addition to oversight regarding on-time performance, PRIIA Section 401 empowers STB to conduct non-binding mediation if a commuter rail agency and host railroad cannot reach agreement regarding access terms on their own (Bing et al. 2010).

STB has no regulatory jurisdiction or responsibility regarding safety of passenger rail operation in the United States.

## Related Topics

Any public agency that receives funds from FTA is subject to that agency's federal requirements for managing and operating the transit system, including



reports to NTD. If an agency provides commuter rail services, that agency must also meet FRA regulations, including reports to the Rail Accident/ Incident Reporting System. The following discussion highlights topics that distinguish FRA-regulated passenger rail operations (commuter rail included) from other forms of urban transit rail largely subject to the statutory and regulatory requirements of FTA.

### *Coordination of FRA and FTA Programs*

FRA and FTA have developed a policy concerning safety issues related to light rail transit operations that share use of the general railroad system track with conventional trains. The joint policy acknowledges that the shared use of conventional rail lines, which falls within FRA's broad safety jurisdiction, poses significant safety issues. Additionally, FTA provides a substantial share of the funding for many of these passenger operations, some of which straddle the jurisdictional line between FRA's and FTA's statutory safety authority. In order to ensure that FRA and FTA exercise jurisdiction over these shared use operations in a complementary way, the two agencies jointly developed a policy concerning safety issues and regulatory jurisdiction related to passenger rail operations that share use of the general railroad system with conventional trains (*Federal Register* July 10, 2000).

The joint policy states that FTA's rules on rail fixed guideway systems apply to any urban rapid transit systems not subject to FRA's rules. On urban rapid transit systems connected to the general system, such that they trigger FRA's exercise of jurisdiction, only the portions of the rapid transit system connected to the general system will be subject to FRA's regulations (49 CFR Appendix A to Part 209, 2014).

### *Reporting Safety Data*

Between 1991 and 2001, commuter railroads receiving funding from FTA reported summary accident data to FTA through NTD and detailed accident/incident reports to FRA through the Rail Accident/ Incident Reporting System as required in 49 CFR Part 225. However, when significant revisions were made to NTD in 2001, placing an additional burden on safety reporters, U.S. DOT determined that commuter railroads no longer needed to report safety data to FTA, given that they were already required by federal law to file detailed accident and incident

reports with FRA. In support of this change, FRA agreed to share its commuter rail safety data with FTA for analysis.

Commuter rail operators report only security events (e.g., suicides, attempted suicides, security-related evacuations, and assaults) to NTD and do not submit monthly safety reports. Commuter rail operators report safety events to FRA.

### *Positive Train Control (PTC) Implementation*

PTC systems are integrated command, control, communications, and information systems designed to prevent train accidents by controlling train movements. PTC systems can improve railroad safety by significantly reducing the probability of collisions between trains, casualties to roadway workers, damage to equipment, and over speed accidents.

The Rail Safety Improvement Act of 2008 mandated certain railroads to implement PTC by December 31, 2015. According to FRA, 40 railroads are required to implement PTC on over 68,000 miles of track nationwide. However, a 2010 report from the Government Accountability Office (GAO) found that publicly funded commuter railroads may have difficulty in covering the \$2 billion that PTC is estimated to cost them. The report stated that delays in meeting the 2015 deadline could occur if funding is not available, or that agencies may have to divert funding from other critical areas, such as maintenance (U.S. GAO 2010; U.S. Congress 2008).

The Surface Transportation Extension Act of 2015 extends the deadline for Class I railroads and entities providing regularly scheduled intercity or commuter rail passenger transportation to submit a plan for implementing PTC for 3 years, from December 31, 2015, to December 31, 2018. The act also provides for an additional 2 years at the discretion of the Secretary of the Department of Transportation based on good faith efforts and circumstances that may be beyond a railroad's control (Surface Transportation Extension Act of 2015, Pub. L. 114-73, October 29, 2015). The FAST Act includes \$199 million for fiscal year 2017 to assist in financing installation of PTC (FAST Act of 2015, Pub. L. 114-94, December 4, 2015).

*Hours of Service Requirements for Railroad Workers.* RSIA also directed FRA to establish new safety regulations that govern the hours of service requirements for railroad workers and certification of conductors for all railroad operations under FRA jurisdiction. The Hours of Service Law, amended in

2008 as part of RSIA, was first enacted in 1907 to control how many hours that train employees, dispatching service employees, and signal employees were allowed to work. The statute provides maximum on-duty periods for each group and establishes guidelines on how to calculate hours worked. The statute also contains limitations on the consecutive days and monthly hours. RSIA gave FRA the authority to establish hours of service limitations for train employees providing commuter and intercity rail passenger transportation service. In 2011, FRA published its final rule providing new limitations, based on the limits in the original Hours of Service Law. The regulation also adds a requirement to analyze employee work schedules using fatigue modeling tools and distinguishes between work done during daylight hours and work done during nighttime hours.

In addition to the above requirements provided in RSIA, 49 C.F.R. § 209.301 subpart D provides detail about disqualification procedures of railroad employees (including managers and supervisors) and agents of railroads who demonstrate that they are unfit to perform safety-sensitive functions by violating any FRA safety rules or regulations.

Employees who fall under FRA jurisdiction include

- Railroad employees who are assigned to perform service subject to the Hours of Service Act.
- Railroad employees or agents who inspect, install, repair, or maintain track and roadbed; conduct training and testing of employees; or perform service subject to the Transportation of Hazardous Materials laws.
- Railroad managers, supervisors, or agents when they perform or supervise safety-sensitive functions or are in a position to violate FRA safety rules and regulations.

### *Railroad Retirement System*

The Railroad Retirement and Carriers' Taxing Act of 1937 established the railroad retirement system. Railroad employees who have spent time in the employment of the private railroads are eligible for this retirement system (public agency employees who have not worked for private railroads are not eligible). The railroad retirement system is based on three federal laws: the Railroad Retirement Act, the Railroad Unemployment Insurance Act, and the

Railroad Retirement Tax Act. The first two of these acts are administered by the Railroad Retirement Board (RRB), and the third, by the Internal Revenue Service of the U.S. Treasury. RRB also participates in the administration of the federal Medicare health insurance program.

In the 1930s, amid concern about the ability of existing pension programs to provide former railroad workers with adequate assistance in old age, Congress established a national railroad retirement system. The program provides retirement, survivor, unemployment, and sickness benefits to individuals who have spent a substantial portion of their career in railroad employment and these workers' families. This system is primarily administered by RRB, which is an independent federal agency charged with providing benefits to eligible employees of the railroad industry and their families.

Legislation was enacted in 1934, 1935, and 1937 to establish a railroad retirement system separate from the social security program legislated in 1935. Such legislation, taking into account the particular circumstances of the rail industry, was not without precedent. Numerous laws pertaining to rail operations and safety had already been enacted since the Interstate Commerce Act of 1887. Since passage of the Railroad Retirement acts of the 1930s, numerous other railroad laws have subsequently been enacted, as previously discussed in this report.

A companion bill, RUIA provides benefits for qualified railroad employees. The Act is designed to restore part of an individual's wage loss arising from unemployment or sickness (including maternity). Payments are made for days of unemployment or sickness in a benefit year.

### *FRA Passenger Vehicle Requirements*

FRA has set requirements for passenger and commuter vehicles. The safety regulations that FRA has developed address concurrent and comingled use of different vehicle types on the general railroad systems (Fazio et al. 2011). For example, Diesel Multiple Unit (DMU) cars have gained popularity especially in passenger service on more lightly used intercity routes that would not be economical to operate using more conventional locomotive-hauled trains. However, some European DMU cars introduced into commuter rail services in the United States did not meet FRA standards for weight and buff strength for crashworthiness. For example, MetroRail in Austin, TX, features DMU

equipment that is not FRA-compliant. If a commuter rail system uses a non-compliant rail vehicle, FRA is likely to require separation of light and heavy vehicles either by time (meaning day versus night for instance) or space (meaning light vehicles may only operate in an area that no heavy vehicles will, and vice versa.) Most of the passenger rail projects in operation or proposed to operate in conjunction with freight traffic are on rails owned by a party besides the transit agency. The disruption to normal services required to meet FRA requirements may make it difficult for the railroad and transit agency to operate successfully together.

Recently, however, vehicle manufacturers have developed a new, FRA-compliant DMU that is available as an option for agencies wishing to use this approach to their rolling stock requirements. At present, this vehicle is only in service on the new Airport Line in the GO Transit system in Toronto, Ontario, but the same vehicle has been acquired for the new SMART commuter rail in Sonoma and Marin Counties in Northern California. SMART starts service in 2016, potentially ushering in a new era for DMUs in U.S. commuter rail services.

### *Liability and Indemnity Provisions*

Sharing rights-of-way can lead to risks for both commuter and freight rail, including accidents and financial risk. In many cases, freight railroads seek liability protections against potential risks in exchange for access to the right-of-way. Liability and indemnity are key issues to be considered when negotiating these agreements. Two publications provide significant guidance for the liability and indemnity provisions in contracting commuter rail service:<sup>5</sup>

- U.S. GAO. 2009. *Commuter Rail: Many Factors Influence Liability and Indemnity Provisions, and Options Exist to Facilitate Negotiations* (GAO-09-282).
- Bing et al. 2010. *NCHRP Report 657: Guidebook for Implementing Passenger Rail Service on Shared Passenger and Freight Corridors*.

<sup>5</sup>Pending publication December 2015, National Cooperative Rail Research Program (NCRPP) Project 12-01/Topic 2: Issues that Emerge when Public Entities Acquire a Real Property Interest in Rail Lines by Allison Fultz and Charles Spitulnik, Kaplan Kirsch Rockwell, LLP.

The following section summarizes the guidance contained in these two reports.

U.S. GAO provides definitions of liability and indemnity in the context of contracting for commuter rail. According to U.S. GAO, liability is defined as the legal obligation to pay claims that arise from damages to property or injury to passengers (GAO 2009). U.S. GAO defines indemnity as a provision in the contract that allocates financial responsibility (GAO 2009). An indemnity provision often involves one party agreeing to protect another party against loss or damages it may sustain under the contract (GAO 2009).

Bing et al. and U.S. GAO explain the federal context that necessitates liability and indemnity negotiations. Historically, private companies owned and operated both passenger and freight services on U.S. rail corridors. When Congress passed the Rail Passenger Service Act of 1970, which created Amtrak and removed the obligation for private freight railroads to operate intercity passenger rail, Amtrak trains were given priority to access freight rail tracks at a discounted rate. However, this does not extend to public commuter rail agencies, which must instead negotiate agreements with the freight agencies to purchase, lease, or pay to access the right-of-way (Bing et al. 2010, U.S. GAO 2009).

In 1997, Congress enacted the Amtrak Reform Accountability Act (ARAA) limiting overall damages from passenger claims to \$200 million and authorizing passenger rail providers to enter into indemnification agreements (Bing et al. 2010, U.S. GAO 2009). Bing et al. and U.S. GAO explain that in addition to federal regulations and oversight, state laws can influence the negotiation of indemnity and liability provisions. In some states, laws restrict public agencies, such as commuter rail agencies, from indemnifying a private party. Additionally, statutes prohibiting Amtrak from cross-subsidizing commuter rail or freight rail in the Northeast Corridor limit Amtrak's ability to assume additional liability for those parties (Bing et al. 2010, U.S. GAO 2009).

In *Commuter Rail*, U.S. GAO explains that liability and indemnity agreements between freight and commuter rail agencies are primarily no-fault agreements, which assign liability regardless of fault. For example, depending on the agreement, a commuter rail agency or freight agency could be held responsible for claims associated with accidents caused by the other party. No-fault agreements are considered to be the industry standard and allow agencies to

avoid costly litigation to determine fault in the event of an accident (GAO 2009).

U.S. GAO and Bing et al. found that several factors influence the negotiation of liability and indemnity provisions in contracts between passenger and freight railroads. These factors can include the freight railroads' business perspective, the freight railroads' financial health, level of awareness or concern about liability, and views on sufficient amounts of insurance. The U.S. GAO study offers several options for facilitating the negotiation of liability and indemnity provisions in contracts between freight and passenger rail agencies. These options include amending ARAA; exploring alternatives to traditional commercial insurance; providing commuter rail agencies with more leverage in negotiations; separating passenger and freight traffic, physically or by time of day; and setting up an independent authority to manage the rail service structured so that legal barriers do not apply (Bing et al. 2010, GAO 2009).

Overall, liability and indemnity agreements in contracts between commuter and freight railroads differ from agency to agency. U.S. GAO found that, in general, the liability and indemnity provisions in agreements differ, but commuter rail agencies tend to assume most of the financial risk involved for commuter operations (GAO 2009).

#### *Regulatory Environment Related to Food Service and Sanitation Procedures*

Multiple agencies at the federal and state level may have oversight of food service and sanitation procedures on commuter rail service. Factors that determine jurisdiction include the scope of service, whether service is intrastate or interstate, and the particular contracting arrangement involved. In general, the Food and Drug Administration (FDA) regulates providers of food service interstate, while state departments of health govern intrastate. The Environmental Protection Agency (EPA) regulates waste disposal in general, which is also subject to FRA requirements. State departments of environment or ecology may impose requirements. Although standardized industry procedures establish the safe handling of food and human waste, regulatory authority over commuter rail operators depends on the operating characteristics of the particular service.

#### *Performance Monitoring and Service Quality*

Performance monitoring and service quality can be handled implicitly through general strategies

employed by transit agencies or explicitly in contractual agreements. The following implicit strategies, outlined in *NCHRP Report 657: Guidebook for Implementing Passenger Rail Service on Shared Passenger and Freight Corridors*, provide general strategies for transit authorities to implement in order to increase service quality:

- The transit authority should monitor service quality in real time and be ready to take action in case of a one-time or chronic service problem. In particular, this recommendation requires a clear definition of agency responsibilities versus those of a train operations contractor regarding communication with the host railroad and the level at which decisions should be referred to the agency.
- The transit authority agency should be responsible for public communications on all matters affecting the service, whether a minor short-term emergency (like canceling a train) or ongoing efforts to resolve a chronic service problem. In these communications, it is critical that the transit authority not blame problems on other parties or blindside the contractor or host railroad by releasing statements that have not been discussed in advance. Public discussion of disputes among the agency, host railroad, and contractor should be avoided.
- Chronic service problems should be addressed cooperatively by the agency, host railroad, and contractor. The goal should be to identify the root causes of the problem and work out solutions that make sense for all parties. Often, it is possible to develop win-win solutions that benefit both freight and passenger operators. Some freight railroads have commented that respecting passenger schedules results in more operating discipline and reduced costs in operating the freight service (Bing et al. 2010).

Poole and Wilcock and Stoetzel explain that performance monitoring represents an explicit approach to ensuring service quality and is a crucial component of contracts between transit authorities and private contractors for commuter rail service. Transit authorities that use private contractors to operate commuter rail lines are encouraged to establish evaluation and enforcement requirements to ensure service quality. These can include performance standards, monitoring and evaluation requirements, and enforcement methods. Performance standards can provide insight

into key questions that agencies need to consider when evaluating the options for the operation of their service, including how the contractor's scope of services is established, how the transit authority knows that work is being completed, and how to evaluate the effectiveness of new service delivery models (Poole 2014, Wilcock and Stoetzel 2013).

Wilcock and Stoetzel discuss that, historically, the direct operating grants and purchase of service agreements between agencies for passenger rail services were fairly basic. These agreements were typically a commitment of funds from the agency to the railroad in exchange for continued operation of the passenger rail service. These agreements lacked oversight and did not include performance standards or requirements. As a result, service tended to deteriorate under the purchase of service agreement model (Wilcock and Stoetzel 2013).

The modern era of contracting for commuter rail services contrasts starkly with the early purchase of service agreements, as discussed by Bing et al. and Wilcock and Stoetzel. The contracts among transit authorities and third-party service providers tend to be longer and more robust and will typically include the following areas for performance monitoring and service quality (Bing et al. 2010, Wilcock and Stoetzel 2013):

- Reporting obligations, including level of staffing, service performance metrics such as delay minutes, analysis of delay causes and responsibilities, on-time performance, requirements for special reports on unusual delays and events, and arrangements for communicating information to the public, as required.
- Detailed performance standards such as the number of coaches and locomotives available for each service day, on-time standards, and revenue collection standards.
- Mandated staffing levels based on train size, anticipated ridership, and other factors.
- Incentives, contractually enforceable standards, and detailed penalty regimes.

Poole's review of performance standards, monitoring and evaluation requirements, and enforcement methods of several commuter rail service contracts in the Northeast United States found variation among agencies (Poole 2014). Poole and Wilcock and Stoetzel discuss that, in general, key performance indicators (KPIs) cover areas such as per-

formance (generally measured in terms of on-time performance); safety (generally measured in terms of accidents, injuries, incidents, regulatory violations, etc.); improved customer service (generally measured through customer satisfaction surveys); cost-effectiveness; and improved asset utilization. (Poole 2014, Wilcock and Stoetzel 2013).

Nelson and O'Neil note that on-time performance stands out as a key service characteristic for commuter rail and should be considered a central KPI for measuring operator performance and service quality for the following reasons:

- The number of passengers and the trip distances for commuter rail trips are relatively larger than those of other transit modes, so a long delay can have detrimental effects on the efficiency and effectiveness of the entire system. That is, the primary service must work well because the fallback option is particularly unattractive.
- Commuter rail has smaller windows in which to operate if it is sharing tracks with other users (especially on a single track).
- Due to the long headways of commuter rail service, a missed trip can result in extreme delays for passengers, resulting in poor customer satisfaction (Nelson and O'Neil 2000).

Nelson and O'Neil explain that running reliable commuter service can have significant financial implications, so careful attention should be paid to monitoring, maintaining, and managing on-time performance. When developing contractual incentives and penalty regimes for on-time performance, provisions for excusable delays for issues beyond the control of operators and careful reporting to substantiate claims should be carefully considered (Nelson and O'Neil 2000).

Lundberg (2006) and Wilcock and Stoetzel (2013) explain that provisions for performance standards can take the form of incentives or penalties, with agencies often employing both in their contracts. Having a mutual goal of quality service delivery is considered to be central to a successful partnership between the agency and the contractor (Lundberg 2006). This arrangement is seen as encouraging constant service improvement and helps agencies to avoid past issues with simpler purchase of service agreements that contained no oversight or provisions for performance evaluation (Lundberg 2006, Wilcock and Stoetzel 2013).

Poole explains that likewise, methods for enforcing performance standards range across agencies and can include financial incentives or strict financial penalties for under-performance. In most cases, failure to meet performance standards can result in termination of the contract (Poole 2014).

## CHAPTER 4 REGULATORY ENVIRONMENT FOR COMMUTER RAIL IN CANADA

The following section describes the rail transport industry in Canada and identifies the regulatory responsibilities for commuter rail.

### Overview

Canadian National Railway (CN) and Canadian Pacific Railway (CP) are the two dominant freight rail operators in Canada and are both Class I railways. Together, CN and CP represent more than 75% of the industry's tracks and three-quarters of overall tonnage carried by the rail sector (Transport Canada 2011).

Passenger railways include intercity rail operators, urban rail transit, and heritage railways. VIA Rail Canada (a Crown corporation established in 1977) is Canada's dominant intercity rail passenger service operator. VIA Rail Canada is also a Class I railway and operates passenger rail services mainly over CN and CP track. Cross-border passenger rail connections are possible in Vancouver through Amtrak's Cascades service, in Toronto through Amtrak's Maple Leaf service, and in Montreal through Amtrak's Adirondack service (Transport Canada 2011 and Addendum 2014).

As described previously in this report, commuter rail service is provided by TransLink in Metro Vancouver (West Coast Express), GO Transit in the Greater Toronto and Hamilton Area, and Agence métropolitaine de transport (Metropolitan Transportation Agency) in the Greater Montreal area (Transport Canada 2015).

### Regulatory Framework

The regulatory framework for railway safety encompasses federal and provincial legislation, regulations, rules, and standards that provide the structure in which railway companies can operate safely. Some 34 Canadian railways have interprovincial or Canada–United States operations and are regulated

by federal law. These include the two major freight-carrying railways (CN and CP), VIA Rail, and more than 30 short line companies. Railways that operate entirely within a single province are regulated by provincial governments.

Each of the commuter rail systems operates at least in part on CN and/or CP track and falls under the jurisdiction of the regulatory authority of Transport Canada.

### *Federal Legislation Affecting Railway Safety*

Several federal statutes play a role in the regulation of railways, the most important of which is the Railway Safety Act, together with the regulations and rules made pursuant to it. Other relevant federal legislation affecting railway safety includes the Canadian Transportation Accident Investigation and Safety Board Act, the Canada Labour Code, and the Canada Transportation Act.

The Railway Safety Act (RSA), implemented in 1989, gave responsibility to Transport Canada for overseeing railway safety. RSA separated the role for railway safety from the roles of the Canadian Transportation Agency (for economic regulation and dispute resolution) and the Transportation Safety Board (for accident investigations). The basic principle introduced by the RSA was that railway companies must be responsible and accountable for the safety of their own operations, while the regulator must retain the power to protect people, property, and the environment by ensuring that the railways operate safely within a national framework. The RSA reinforces this principle by providing for government regulations and rules, as well as the development of operating rules and engineering standards by the industry that can be legally recognized as equivalent to regulations through approval by the Minister of Transport. Rules and engineering standards may be adapted to the needs of different railways and may be developed more quickly than regulations.

The Canadian Transportation Accident Investigation and Safety Board Act deals with accident and incident reporting and investigation for all modes of transport under federal jurisdiction, including rail. The Canada Labour Code deals with on-the-job occupational health and safety of workers in federally regulated workplaces, including railways under federal jurisdiction.

The Canada Transportation Act provides an overall economic framework for the national transport

tation system that is “competitive, economic and efficient” and “meets the highest practicable safety and security standards.” This act came into effect in 1996 and established the Canadian Transportation Agency.

### *Provincial Railway Safety Legislation*

The role of provincial governments in regulating railway safety has increased in importance since the creation of many short line railways in the 1990s. Differences in regulation and enforcement among provinces and between the provincial and federal regimes are inevitable. Most provinces, including British Columbia, Alberta, Manitoba, Nova Scotia, and New Brunswick, have incorporated by reference into their own legislation, some or all of the provisions of the Railway Safety Act, regulations, and rules, ensuring that the same rules apply to provincial railways.

Most provinces with provincially regulated railways also have a memorandum of understanding (MOU) with Transport Canada under which federal railway safety inspectors provide inspection services to the province on a cost-recovery basis. The terms of these MOUs and the extent to which each province uses the services of federal railway inspectors vary from one jurisdiction to another. Federal inspectors apply the rules and regulations adopted by each province when inspecting provincial railways, but generally do not have enforcement powers. In most provinces, provincial enforcement officers carry out enforcement. British Columbia is an exception, performing its own inspections and enforcement activities.

### **Safety Regulation**

The three commuter rail services that operate in Canada (AMT in Montreal, GO Transit in Toronto, and WCE in Vancouver) to varying degrees operate on lines owned by freight rail companies. In the case of AMT and GO Transit, CN and CP own part of the system that the commuter services run on, although GO Transit has, in recent years, acquired ownership of the preponderance of its system. In the case of WCE, CP is the host railroad for the commuter rail service.

Transport Canada has jurisdictional authority over railways that operate in more than one province. CN and CP operate in numerous Canadian

provinces, and the commuter operations in Montreal, Toronto, and Vancouver fall under the jurisdiction of Transport Canada.

Transport Canada has regulatory oversight over rail safety and rigorously enforces legislation, rules, and regulations, such as those related to train securement, speed limits, and track and equipment inspection and maintenance.

## **CHAPTER 5 CONTRACTING COMMUTER RAIL**

The research team describes each commuter rail agency as either an agency-operated or a contracted commuter rail service (each agency that contracts is further described as either bundled or unbundled). These terms are defined below:

- Agency operated – Agency personnel perform the primary functions of train operations, maintenance of equipment, and maintenance of way. The agency may contract for support services to outside vendors, but the primary functions are the responsibility of the agency personnel.
- Contracted – The commuter rail agency contracts one or more of the primary functions to a third-party contractor, excluding functions required to be performed by the host railroad as a condition of access to the railroad.\*

\* An agreement with the host railroad to perform certain functions (such as train dispatching or maintenance of way) as a condition of access to the railroad is not considered a third-party contract. A trackage rights agreement (TRA) with the host railroad is not considered a third-party contract in this context.

Each contracted commuter rail system is then categorized as bundled or unbundled:

- Bundled – The commuter rail agency combines, at a minimum, train operations and maintenance of equipment into one contract with a prime contractor. Other individual, specific functions may be included in the bundled contract. The commuter rail agency may have a separate TRA with the host railroad.
- Unbundled – The commuter rail agency has two or more separate contracts, not including required agreements with the host railroad, to provide the primary functions of train opera-

tions, maintenance of equipment, and maintenance of way. \*\*

\*\*A purchase of service agreement with the host railroad not required as a condition of access to the railroad is included as a contracted service.

There are also commuter rail agencies that both operate directly and contract for services. This is referred to as

- Mixed – Agency personnel perform some of the primary functions and contract other essential services.

When commuter rail services are unbundled, contracts typically cover three broad service areas: (1) train operations, (2) maintenance of way (rail infrastructure), and (3) maintenance of equipment. Each of these service areas include various additional services that can be further unbundled (e.g., station maintenance). The following is a brief description of the components of each service area (Wilcock and Stoetzel 2013):

- Train operations include train and engine crew to staff trains and dispatching functions.
- Maintenance of way includes the systematic maintenance of the track, signals, power, catenary, bridges, structures, and station platforms. Facilities outside of the right-of-way (e.g., parking) are generally not part of this service area.
- Maintenance of equipment includes daily service and maintenance of coaches and locomotives. This may include maintenance of non-revenue equipment. Partial and full overhauls are generally not part of this service area and are handled separately.

Table 4 illustrates how each commuter rail system either has bundled or unbundled the primary service functions and which entity is responsible for each functional area. Four basic types of entities provide these services:

- Public agency
- Host railroad (may include freight railroad or other owner of the rail line)
- Intercity passenger rail operator (Amtrak [United States] or VIA Rail [Canada])
- Contractor (private company, including joint venture, special purpose company, and other

entity formed to specifically provide a service or services)

## Agency-Operated Services

Six legacy commuter rail agencies and one New Start directly operate and maintain all major functions:

- PATH
- LIRR
- Metro-North
- NJ TRANSIT
- SEPTA
- South Shore Line
- SMART (located in Marin and Sonoma counties, CA, and opening in 2016)

## Bundled Contracted Services

Eleven commuter rail systems contract commuter rail services in a bundled arrangement, and one New Start rail system is a public-private partnership:

- MBTA
- Caltrain
- MARC
- TRE
- COASTER
- Rail Runner
- ACE
- SLE
- MetroRail
- A-train
- Music City Star
- RTD

For this documentation, these properties are considered to be bundled because most of the operation is under one entity. Variations in the case of specific commuter rail systems are as follows:

- **MBTA** has an agreement with Amtrak for maintenance of way and dispatching of trains in the Northeast Corridor.
- **Caltrain** has a contract with the host railroad to dispatch trains and maintain infrastructure on a portion of the corridor.
- **MARC** has two bundled contracts, each for different lines. The MARC Brunswick and Camden Lines operate under a trackage rights agreement with the host railroad and other functions are bundled in a contract with a private



**Table 4** Commuter Rail Systems – Service Delivery Models

System	Service Area	Year	Train Operations	Maintenance of Way	Maintenance of Equipment
<b>Agency-Operated and Maintained Commuter Rail (6) + 1 New Start 2016</b>					
PATH	NYC – New Jersey	1921	[Purple]	[Purple]	[Purple]
LIRR	NYC – Long Island, NY	1966			
Metro-North	NYC – North and East NY	1983			
NJ TRANSIT	New Jersey – NYC	1983			
SEPTA	Philadelphia, PA	1983			
South Shore Line	South Bend, IN – Chicago, IL	1989			
SMART	Sonoma – Marin Counties, CA	2016			
<b>Contracted Commuter Rail – Bundled (11) + 1 New Start 2016</b>					
MBTA	Boston, MA	1964	[Yellow]	[Blue]	[Yellow]
MARC	Brunswick and Camden Lines and Penn Line, Baltimore, MD	1983		[Blue]	[Blue]
SLE	New Haven – New London, CT	1990		[Red]	[Red]
Caltrain	San Francisco – San Jose, CA	1992		[Red]	[Red]
COASTER	San Diego County, CA	1995		[Red]	[Red]
TRE	Dallas – Fort Worth, TX	1996		[Red]	[Red]
ACE	Stockton – San Jose, CA	1998		[Red]	[Red]
Rail Runner	Albuquerque – Santa Fe, NM	2006		[Red]	[Red]
Music City Star	Nashville, TN	2006		[Red]	[Red]
MetroRail	Austin, TX	2010		[Red]	[Red]
A-train	Denton County, TX	2011		[Red]	[Red]
RTD	Denver, CO	2016	[Red]	[Red]	
<b>Contracted Commuter Rail – Unbundled (8)</b>					
GO Transit	Toronto, ON, Canada	1967	[Yellow]	[Red]	[Yellow]
Tri-Rail	Palm Beach-Broward-Miami-Dade, FL	1989	[Yellow]	[Red]	[Yellow]
Metrolink	Los Angeles, CA	1992	[Blue]	[Red]	[Blue]
VRE	Northern VA – Washington, DC	1992	[Yellow]	[Red]	[Blue]
WCE	Vancouver, BC, Canada	1995	[Yellow]	[Red]	[Blue]
AMT	Montreal, QB, Canada	1997	[Red]	[Red]	[Blue]
Sounder	Tacoma – Seattle – Everett, WA	2000	[Yellow]	[Red]	[Blue]
SunRail	Central FL – Orlando, FL	2014	[Yellow]	[Red]	[Blue]
<b>Mixed-Agency-Operated and Contracted Commuter Rail (4)</b>					
Metra	Chicago, IL	1984	[Purple]	[Red]	[Purple]
FrontRunner	Ogden – Salt Lake City – Provo, UT	2008	[Purple]	[Red]	[Yellow]
Northstar	St. Cloud – Minneapolis, MN	2009	[Red]	[Red]	[Purple]
WES	Wilsonville – Beaverton, OR	2009	[Red]	[Red]	[Purple]

Agency/In-house	Amtrak or VIA Rail
Host Railroad	Contractor

- company. The MARC Penn Line operates under a fully bundled contract with Amtrak.
- SJRRC bundles train operations and maintenance of equipment for **ACE** in a single contract with a private company. SJRRC also enters into trackage rights agreements with the host railroads for use of the rail lines.
  - RTA of Middle Tennessee contracts with a private company to provide bundled operations and maintenance for the **Music City Star**, and the agency has a trackage rights agreement with the host railroad.
  - Although **SLE** has a fully bundled agreement with Amtrak east of New Haven, for those SLE trains continuing west of New Haven, Metro-North dispatches trains and maintains the rail infrastructure between New Haven and Stamford.
  - **Denver RTD** plans to open the East, Gold, and Northwest rail lines in 2016 and the North Metro rail line in 2018. RTD developed the commuter rail system in partnership with Denver Transit Partners (DTP), a public-private partnership called Eagle P3. DTP will operate all four commuter rail lines and maintain rail vehicles and infrastructure.

### Unbundled Contracted Services

Eight commuter rail systems contract for unbundled services. Several are fully unbundled where each separate service area is provided by a different entity; others are partially unbundled for various reasons.

The eight commuter rail systems that unbundle contracts for services are

- GO Transit
- AMT
- Metrolink
- VRE
- Tri-Rail
- Sounder
- WCE
- SunRail

### Mixed-Agency-Operated and Contracted Services

Four commuter rail agencies follow a mixed model, both directly operating and contracting services:

- Metra
- FrontRunner
- Northstar
- WES

Each agency directly operates some part of the operation and contracts other functions in unbundled agreements with private companies or service agreements with the host railroad.

- The operating subsidiary for **Metra** owns and/or operates 7 of 11 commuter rail lines. The train dispatching and/or maintenance of infrastructure are performed by the host railroad in these corridors. For the remaining four commuter rail lines, Metra has purchase of service agreements with the host railroad (UPRR in three corridors, and BNSF in one corridor). Metra provides the rolling stock. Under a purchase of service agreement, the railroad company provides the service using railroad employees and either owns or controls the rights-of-way. Metra provides the rolling stock and, along with the local municipalities, is responsible for the stations.
- UTA owns most of the **FrontRunner** railroad tracks and performs most service in house. For that portion of the FrontRunner corridor owned by a host railroad (UPRR), UTA entered into a trackage rights access agreement to provide commuter rail service. UTA contracts to private companies for locomotive maintenance and major repair of tracks.
- Metro Transit (the operations division of the Metropolitan Council in Minneapolis-St. Paul) maintains the rolling stock for **Northstar**. Under a service agreement, the host railroad, BNSF, provides locomotive engineers and onboard train crews. BNSF is also responsible for transit dispatch and infrastructure maintenance.
- TriMet owns and maintains the rolling stock for **WES** using in-house staff. TriMet contracts with the host railroad (P&W) to operate the trains and maintain the tracks.

### Profiles for Commuter Rail Systems

The research team gathered information from each of the 31 commuter rail systems in the United States and Canada and created a profile for each. The

commuter rail system profiles, provided online, include the following information:

- History of the commuter rail service
- Background of the operating environment for context
- Governance (statutory framework, policy authority)
- Recent significant project events (e.g., expanded levels of service, recent procurement)
- General information about contracted services
- Information about oversight and reporting responsibilities
- Performance statistics from NTD 2009–2014 or available data from the Canadian Urban Transit Association (e.g., annual operating cost, directional route miles, revenue miles, annual unlinked passenger trips, annual passenger miles)
- Table to illustrate the entity responsible for major service functions (train operations, maintenance of way, and maintenance of equipment)

The profiles are available at the following webpage: <http://tti.tamu.edu/group/transit-mobility/?p=1379>

There are three options to view the profiles on the webpage:

1. Interactive map. Click on the city for the profile.
2. Standard PDF with a menu on left with all 31 profiles (requires Adobe Reader, a link is provided on the webpage).
3. Individual system standard PDF for each profile in a list.

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