

U.S. Urban Rail Transit Lines Opened From 1980

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1.) Introduction

This tabulation includes all heavy rail transit (HRT), light rail transit (LRT), automated guideway transit (AGT) and monorail segments opened or closed in the United States from 1980. It was prepared as an update of a similar tabulation presented by Pushkarev, Zupan and Cumella (1982). Additional information includes details of segments that are not grade separated (e.g. reserved track and street track).

The authors have added selected segments which were opened or closed prior to 1980. The authors have also added a companion tabulation covering urban rail transit in Canada and México (see "Urban Rail Transit in Canada and Mexico - Opening Dates").

The Federal Transit Administration (FTA), part of the United States Department of Transportation (USDOT), maintains the National Transit Database (NTB). In general, the authors have adhered to NTB mode categories and classifications (as established by FTA) but have made certain exceptions. As we have discussed previously, it is not possible to group all of the world's urban and suburban railways into mutually-exclusive categories such as "tramway" (or "streetcar"), "light rail," "heavy rail" and "suburban rail" (or "commuter rail"). No such distinctions can be applied uniformly to all countries (see our Special Report No. 7, [Rail Transit Systems Worldwide: Traffic Density & Related Statistics](#); scroll down to sections 5 through 8; pdf version is [here](#)). This is also true with reference to the U.S.

FTA, by administrative fiat, labels several categories of urban rail transit systems using electric traction as "light rail," e.g. street tramways (or "streetcar" systems), "heritage" and "vintage" operations, and light rail transit. This label is applied whether a given system is long-established or not, whether

the system has significant separation (e.g. tunnels, reserved track) or not, and whether the system is worked by "modern" rolling stock or not. (Long-established operations are sometimes referred to, informally, as "legacy" systems.)

The term "modern tramway" or ("modern streetcar") came into use from the early 2000s to describe lines using electric traction with characteristics distinct from "light rail" systems (see [Comparison of Modern Streetcar vs. Light Rail Transit](#) by the Tucson [Arizona, U.S.] Department of Transportation). In general, "modern tramway" lines are built to standards which preclude operation of full-scale "light rail" vehicles or trains (e.g. street track foundations excavated less deep than would be required to support the mass of light-rail vehicles). However, this practice is not "universal;" the Tacoma Link line was built with infrastructure suitable for operation of light-rail trains. Although not an "official" FTA category, the authors have used "modern tramway" ("modern streetcar") for the purpose of this tabulation.

The authors have not used the terms "diesel light rail" and "diesel light rail vehicle," which came into use from the late 1990s. The definitions of "light rail" adopted by the Transportation Research Board, National Research Council (TRB) and the American Public Transportation Association (APTA, the U.S. trade organization of public transport operators) both stipulate electric traction.

(See Gray, B. H. (ed.). 1989. *Urban Public Transportation Glossary*. Washington, DC: Transportation Research Board, National Research Council. See also [This Is Light Rail Transit](#), Transportation Research E-Circular Number E-C033, cosponsored by APTA and TRB; scroll down to Page 3.)

(See also [Glossary of Transit Terminology](#), APTA; scroll down to "Rail, Light;" pdf version, dated 1994, is [here](#); scroll down to "Rail, Light," Page 23.)

A small number of new U.S. rail systems have used diesel multiple unit (DMU) stock built by manufacturers such as Stadler, Siemens and Bombardier. Although used widely in Europe, such stock does not comply with passenger rail crashworthiness standards established and enforced by the Federal Railroad Administration (FRA), which is part of USDOT.

(See Tyrell, David C. 2001. [U.S. Rail Equipment Crashworthiness Standards](#). Cambridge (MA), US: Volpe National Transportation Systems Center, U.S. Department of Transportation.)

"Compliance" and "non-compliance" with FRA standards is an important planning and operating issue in the U.S., where use of "non-compliant" stock requires "temporal separation" from other rail traffic (e.g. operating hours for "non-compliant" passenger stock and other stock are limited to intervals that do not overlap). It is true that some services using "non-compliant" stock are marketed as "diesel light rail," but this label has not been used consistently. Furthermore "compliance" or

"non-compliance" with FRA standards is obviously not an issue outside the U.S. For these reasons, the authors have used the term "Lightweight DMU" rather than "diesel light rail."

(The authors note that "temporal separation" rules exist for lines using electric traction that share tracks with goods (freight) trains, e.g. the San Diego LRT South Line.)

FTA no longer uses the mode category "Downtown Peplemover" (DPM). These systems are classified as "AGT." The Jacksonville and Las Vegas monorails are also classified as "AGT," but the Seattle monorail is classified as "Monorail." The authors have not followed FTA practice, and have used the mode category "Monorail" for these three lines.

Sources consulted by the authors do not agree on the lengths of all segments or systems, because of differences in definition and other factors (e.g. rounding of segment lengths, confusion between "constructed length" and "operated length"). "Cumulative system length" statistics presented below may vary from total system length implied by NTD statistics.

"Cumulative system length" statistics include all rail transit operators serving the city, e.g. New York totals include New York City Transit (NYCT), Port Authority Trans-Hudson Corporation (PATH) and Staten Island Railway (SIRy). Each operator is counted once, and as a unit.

Memphis, New Orleans, Philadelphia (15-Girard Avenue) San Francisco (F Line) and Tampa operations with heritage rolling stock were included in "LRT" system length because of the scale of operation and levels of passenger traffic carried. Other dedicated heritage lines were excluded from "LRT" totals because of the limited scale of operation.

Additional information on heritage lines is available online. Sources include:

[APTA Heritage Trolley and Streetcar Site.](#)

[North American Vintage Trolley Systems.](#)

Information on the Morgantown Personal Rapid Transit System, which was completed prior to 1980, is available online. Sources include the [Personal Rapid Transit \(PRT\)](#) page of the Transportation and Parking Department, West Virginia University.

Information about the Seattle Center Monorail, which was completed prior to 1980, is available online. Sources include the [Seattle Monorail Official Website.](#)

Airport circulator systems and other "intramural transit systems" were excluded from this tabulation. Online sources include the following:

[Airport Transit System \(ATS\) at O'Hare.](#)

[AirTrain - Ground Transportation - John F. Kennedy International Airport.](#)

[AirTrain - Ground Transportation - Newark Liberty International Airport.](#)

[Intramural Transit Systems](#) (Jon Bell).

[San Francisco Airport AirTrain.](#)

The authors have included all lines and segments known to be under construction, and selected lines and segments that were under design or in planning at the time of writing. In brief, lines and segments for which opening dates had been announced or which large shares of estimated construction cost had been secured were described as "Under Construction, Under Design and In Planning." This was not intended to provide a comprehensive list of all urban rail projects in planning. Such information is available online. Sources include [The Transport Politic](#), [APTA Heritage Trolley and Streetcar Site](#) and [North American Vintage Trolley Systems](#).

Details of segments "Under Design and In Planning" are subject to change.

Line, station and stop names are those current at 2011 March.

Except as noted, all HRT and LRT lines are standard gauge ($1,435mm = 4' 8\frac{1}{2}"$).

Opening dates are the first day of commercial service. In some cases, service was offered without charge for a day or two prior to the formal start of commercial service (typically on the preceding Saturday and Sunday).

2.) Tables (scroll down):

Atlanta (HRT 1979)
Austin (Lightweight DMU 2010)
Baltimore (HRT 1983, LRT 1992)
Boston (HRT 1901, LRT 1897)
Buffalo (LRT 1984)
Camden - Trenton (Lightweight DMU 2004)
Charlotte (LRT 2007, Modern Tramway 2018)
Chicago (HRT 1892)
Cincinnati (Modern Tramway 2013)
Cleveland (HRT 1955, LRT 1920)

Dallas (LRT 1996, Modern Tramway 2015)
Denton (Lightweight DMU 2011)
Denver (LRT 1994)
Detroit (AGT 1987, LRT 2016)
Fort Worth (~~LRT 1963-2002~~, Modern Tramway 2015)
Honolulu (HRT 2012)
Houston (LRT 2004)
Jacksonville (~~AGT 1989-1996~~, Monorail 1997)
Jersey City (LRT 2000)
Las Vegas (Monorail 2004)
Los Angeles (HRT 1993, LRT 1990)
Memphis (LRT 1993)
Miami (HRT 1984, AGT 1986)
Milwaukee (Modern Tramway 2013)
Minneapolis-St. Paul (LRT 2004)
Monterey (Lightweight DMU 2015)
New Orleans (LRT 1835)
New York (HRT 1868)
Newark (LRT 1935)
Norfolk (LRT 2011)
Oceanside - Escondido (Lightweight DMU 2008)
Oklahoma City (Modern Tramway 2020)
Philadelphia (LRT 1905, HRT 1907; includes SEPTA, PATCO)
Phoenix (2008)
Pittsburgh (LRT 1904; "Stage 1" reconstruction completed 1987)
Portland (LRT 1986, Modern Tramway 2001)
Sacramento (LRT 1987, Modern Tramway in planning)
St. Louis (LRT 1994)
Salt Lake City (LRT 1999, Modern Tramway 2013)
San Antonio (Modern Tramway 2014)
San Diego (LRT 1981)
San Francisco (HRT 1972, LRT 1917)
San Jose (LRT 1987)
San Juan (Puerto Rico; HRT 2005)
Seattle (LRT 2009, Modern Tramway 2007)
Tacoma (Modern Tramway 2003)
Tampa (Vintage Trolley 2002)
Tucson (Modern Streetcar 2012)

Washington (HRT 1976, LRT 2016, Modern Tramway 2012)

Atlanta (HRT 1979)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1979	+(10.8) 6.7	East Line	Avondale – Georgia State	
"	+(8.2) 5.1	West Line	Georgia State – Hamilton E. Holmes	(19.0) 11.8
1980 System Length			(19.0 km) 11.8 mi	
1981	+(0.8) 0.5	South Line	Garnett – Five Points	
"	+(2.3) 1.4	North Line	Five Points – North Avenue	(22.1) 13.7
1982	+(1.8) 1.1	"	North Avenue – Arts Center	(23.9) 14.8
"	+(2.3) 1.4	South Line	West End – Garnett	(26.1) 16.2
1984	+(4.4) 2.7	North Line	Arts Center – Lindbergh Center	
"	+(5.5) 3.4	Northeast Line	Lindbergh Center – Brookhaven / Oglethorpe University	
"	+(4.2) 2.6	South Line	Lakewood / Fort McPherson – West End	(40.2) 24.9
1986	+(3.1) 1.9	"	East Point – Lakewood / Fort McPherson	(42.7) 26.5
1987	+(4.4) 2.7	Northeast Line	Brookhaven / Oglethorpe University – Chamblee	(47.1) 29.2
1988	+(4.2) 2.6	South Line	Airport – East Point	(51.3) 31.8
1992	+(3.2) 2.0	Northeast Line	Chamblee – Doraville	
"	+(2.4) 1.5	Proctor Creek Branch	Ashby – Bankhead	(56.9) 35.3
1993	+(5.5) 3.4	East Line	Indian Creek – Avondale	(62.4) 38.7
1996	+(12.7) 7.9	North Line	Lindbergh Center – Dunwoody	(75.2) 46.6
2000	+(3.2) 2.0	"	Dunwoody – North Springs	(78.4) 48.6

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning - Modern Streetcar:				
2013	+(4.2) 2.6	Atlanta Streetcar Downtown Loop	Centennial Olympic Park – Martin Luther King Historic Site	(4.2) 2.6

Notes: Five Points station opened 1981.

With the exception of the Atlanta Streetcar Downtown Loop, Atlanta had no rail transit expansion projects under construction or under design at 2011 August. However, the "Envision6 Regional Transportation Plan," prepared by the metropolitan planning organization (the Atlanta Regional Council), included the following transit projects:

High-Speed Bus Rapid Transit (BRT):

Interstate-75 North, Arts Center station – Marietta – Town Center (northwestward).

Interstate-20 West, Hamilton E. Holmes station – Fulton Industrial Boulevard (westward).

Interstate-20 East, Downtown Atlanta (Garnett station) – Stonecrest Mall (southward and eastward).

Interstate-285 North, Cumberland – Perimeter Center (eastward).

Arterial Bus Rapid Transit (BRT):

Memorial Drive, Kensington station – Goldsmith Road park-and-ride (eastward and northeastward), 8.1 km / 5.0 mi. Opened 2010 September 27.

Buford Highway, Lindbergh station – Pleasant Hill Road (northeastward).

Commuter rail: Atlanta – Jonesboro – Lovejoy, (42 km) 26 mi.

NOTE: The authors emphasize that the local share of financing for commuter rail has not been secured, and that significant political obstacles were raised at 2006 and 2007.

Light rail transit: *BeltLine*, peripheral line using railway alignments. Lindbergh Center station – Ponce de Leon – Edgewood – Inman Park-Reynoldstown station – Pryor – Rose Circle – West End station – Abernathy Boulevard – Ashby station – Hollowell – Northside – Peachtree Road – Lindbergh Center station. (35 km) 22 mi. Opening of initial segment planned for "between 2012 and 2015." Completion planned by "approximately 2030."

Modern Streetcar:

Atlanta Streetcar Peachtree Corridor, Five Points station (Downtown) – Arts Center station (Midtown). (10 km) 6 mi. Although promoted prior to the Downtown Loop, this line is now Phase 2 of the Atlanta Streetcar project.

Technology not specified: *Lindbergh to Emory Spur*. Lindbergh station – Emory University. Included in the *Envision6* plan as a "light-rail technology placeholder."

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Austin (Lightweight DMU 2010)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2010	+(52) 32	Capital MetroRail	Downtown (Austin) – Leander	(52) 32

Note: Capital MetroRail opened 2010 March 22. Not electrified.

This line is described as "commuter rail" because service is operated only Monday - Friday, during morning and evening peak periods. However, in common with the RiverLINE between Camden and Trenton (q.v. below), it has a short segment of street track in the business center, operates over track shared with railway goods (freight) trains (with "temporal separation") and uses lightweight DMU stock built by Stadler (Switzerland). The operator plans to increase service from the beginning of 2011, including midday service.

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Baltimore (HRT 1983, LRT 1992)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
HRT				

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1983	+(12.8) 8.0	Metro Subway Section A	Charles Center – Reisterstown Plaza	(12.8) 8.0
1987	+(9.6) 6.0	" " Section B	Reisterstown Plaza – Owings Mills	(22.6) 14.0
1994	+(2.4) 1.5	" " Section C	Charles Center – Johns Hopkins Hospital	(24.8) 15.5
LRT				
1992	+(36.3) 22.5	Central Light Rail Line	Cromwell Station / Glen Burnie – Timonium	(36.3) 22.5
1997	+(7.3) 4.5	Hunt Valley Light Rail Extension	Timonium – Hunt Valley	
"	+(0.5) 0.3	Pennsylvania Station Light Rail Extension	University of Baltimore / Mt. Royal – Penn Station	
"	+(4.4) 2.7	BWI Light Rail Extension	Linthicum – BWI Airport	(48.4) 30.0
Total HRT and LRT (at 2010)				(73.4 km) 45.5 mi
Under Construction, Under Design and In Planning - LRT:				
after 2016	+(23.5) 14.6	Red Line	Woodlawn – Johns Hopkins Bayview Campus	(71.9) 44.6

Notes: "Baltimore Region Rail System Plan" adopted 2002.

The plan outlines construction of (106 km) 66 mi of new rail lines during a 40-year interval. The rail lines serving the Baltimore metropolitan area would have a total system length of (176 km) 109 mi (exclusive of commuter rail services). The six lines recommended:

Red Line, Interstate-70 – Social Security – West Baltimore – Charles Center – East Baltimore – Johns Hopkins Bayview Medical Center Campus – Dundalk – Turners Station. (34 km) 21 mi, all new.

Green Line, Owings Mills – Charles Center – Johns Hopkins Hospital – Madison Square – Morgan State University – Overlea – White Marsh – Middle River – Martin State Airport, with branch White

Marsh – Interstate-95. Incorporates existing Metro Subway. Total system length (52 km) 32 mi, including new northeastward extension from Johns Hopkins station.

Blue Line, Cromwell Station / Glen Burnie – Linthicum – Camden Yards Camden Yards – Lexington Market – University of Baltimore / Mount Royal – Penn Station – Lutherville – Timonium – Hunt Valley. Incorporates most (42 km / 26 mi) of existing Central Light Rail line. Total system length (42.5 km) 26.5 mi, including new connection to planned Yellow Line (below).

Yellow Line, Columbia – BWI Business District – Linthicum – Camden Yards – Penn Station – Lutherville – Hunt Valley; branch BWI Airport – Linthicum. Shares most of Blue Line (today's Central Light Rail Line, above). Total system length, (68 km) 42 mi, includes (23 km) 14 mi shared with Blue Line, new segment Columbia – Dorsey – Arundel Mills – BWI Amtrak – BWI Business District, and Camden Yards – Charles Center– Penn Station – Johns Hopkins University – Towson – Lutherville.

Purple Line, new urban rail service on Amtrak Northeast Corridor railway line, with up to five new stations. Odenton – BWI Amtrak – Halethorpe – West Baltimore – Penn Station – Madison Square – East Baltimore – Martin State Airport – Edgewood. Total system length (61 km) 38 mi.

Orange Line, new urban rail service on MARC Camden Line commuter rail corridor. Dorsey – Camden Yards. Total system length (18 km) 11 mi.

Priority corridors identified were: Red Line, Green Line segment Johns Hopkins Hospital – Morgan State University, (6 km) 4 mi, and Purple Line segment Madison Square – Martin State Airport. The report did not specify mode choices.

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Boston (HRT 1901, LRT 1897)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
HRT				
1971	+(7.1) 4.4	Red Line South Shore Extension	JFK / Umass – Quincy Center	(46.3) 28.7
1975	-(4.0) 2.5	Orange Line Charlestown Elevated	Haymarket – Everett	

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
"	+(1.6) 1.0	Orange Line Haymarket North tunnel	Haymarket – Community College	
"	+(5.8) 3.6	Orange Line	Community College – Malden Center	(49.7) 30.8
1977	+(1.3) 0.8	Orange Line	Malden Center – Oak Grove	(51.0) 31.6
1980	+(4.8) 3.0	Red Line South Shore Extension	Quincy Center – Braintree	(55.8) 34.6
1980 System Length			(55.8 km) 34.6 mi	
1984	+(2.6) 1.6	Red Line Northwest Extension	Harvard – Davis	(58.4) 36.2
1985	+(1.6) 1.0	"	Davis – Alewife	(60.0) 37.2
1987	-(7.4) 4.6	Orange Line Washington Street Elevated	Chinatown – Forest Hills	
"	+(7.9) 5.6	Orange Line Southwest Corridor	Chinatown – Forest Hills	(61.6) 38.2
LRT				
1980 System Length			(43.4 km) 26.9 mi	
1985	-(4.0) 2.5 *	E-Arborway	Brigham Circle –Arborway	(39.4) 24.4
1989	+(1.0) 0.6 **	"	Brigham Circle –Heath Street	(40.3) 25.0
1994	***	A-Watertown	Brighton Avenue –Watertown	(40.3) 25.0
Total HRT and LRT (in operation)			(101.9 km) 63.2 mi	
Under Construction, Under Design and In Planning - HRT:				
	+(7.3) 4.5	Blue Line	Wonderland – Lynn	
	+(0.6) 0.4	Blue Line	Charles / MGH – Bowdoin	

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning - LRT:				
by 2015	+ (8) 5	Green Line	Lechmere – Somerville; branch to Union Square	

Notes: Cumulative system length ("HRT," and "Total HRT and LRT"), and system length for the Red Line South Shore extension (opened 1969) adjusted to avoid duplication of parallel Red Line segments (Andrew – JFK / Umass – south), (3.5 km) 2.1 mi.

HRT: Start of construction of HRT Blue Line Wonderland – Lynn extension projected for 2017.

LRT: 1980 LRT system length includes (23.7 km) 14.7 mi of separated alignment, (15.6 km) 9.7 mi of reserved-track alignment and (4.0 km) 2.5 mi of in-street alignment, but excludes (3.2 km) 2.0 mi of in-street alignment operated by bus from 1969 (A-Watertown).

* Operation suspended.

** Operation restored.

*** Operation suspended 1969; closure made permanent 1994.

Restoration of (3.1 km) 1.9 mi of in-street alignment (E-Arborway) ordered in 2001 by Executive Office of Environmental Affairs, Commonwealth of Massachusetts. The project was cancelled during 2008.

Ashmont-Mattapan LRT segment, (3.5 km) 2.2 mi, marketed as extension of HRT Red Line. Included in LRT totals.

Historic opening dates for in-street and reserved-track segments of LRT lines are presented in Part 4 (Appendices).

Urban Ring: Bus rapid transit (BRT) project, in planning. To extend Chelsea – Assembly Square – Sullivan Square – Lechmere – Kendall/MIT – Commonwealth Avenue / Boston University – Yawkey – Kenmore – Longwood Medical Area – Ruggles – Dudley Square – Broadway – World Trade Center – Logan International Airport – Airport station – Chelsea, (40 km) 25 mi, 36 stations.

To include operation in mixed traffic, in preferential lanes, and on fully-separated alignment. The line will include a tunnel ("Fenway - Longwood Medical Area Tunnel"), Yawkey – Ruggles, (2.4 km) 1.5 mi.

Start of construction planned for 2015. The line is planned for construction in three phases. During Phase 3, a rail line is planned for construction along the busiest segment of the corridor: Assembly Square – Sullivan Square – Lechmere – Kendall / MIT – Commonwealth Avenue / Boston University – Yawkey – Kenmore – Longwood Medical Area – Ruggles – Dudley Square, (14 km) 9 mi. This is planned for construction as a branch of either the LRT Green Line or the HRT Orange Line.

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Buffalo (LRT 1984)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1984	+(1.9) 1.2	Metro Rail	Erie Canal-Harbor –Theater	(1.9) 1.2
1985	+(5.2) 3.2	"	Theater – Amherst Street	(8.7) 5.4
1986	+(1.5) 0.9	"	Amherst Street – University	(10.0) 6.2

Note: System Length includes (1.9 km) 1.2 mi of reserved track (surface transit mall) and (8.2 km) 5.1 mi of separated (underground) alignment.

Additional (0.4 km) 0.2 mi of depot access line used for passenger service to “Special Events” station as required.

Buffalo had no rail transit expansion projects under construction, under design or in planning at 2011 August. Nor were any such projects contained in the Transportation Improvement Plan (TIP) for 2008-2012, prepared by the metropolitan planning organization (the Greater Buffalo-Niagara Transportation Council).

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Camden - Trenton (Lightweight DMU 2004)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2004	(55.6) 34.5	River LINE	Camden (Entertainment Center) – Trenton Transit Center	(55.6) 34.5
Under Construction, Under Design and In Planning:				
-	(2.1) 1.3	River LINE	Trenton Transit Center – State House	
-	(8.1) 5.0	"	State House – West Trenton	
by 2016	(29.8) 18.5	Glassboro-Camden Line	Camden (Walter Rand Transportation Center) Gloucester City – Woodbury – Glassboro	(85.5) 53.0

Note: River LINE opened 2004 March 14. Not electrified.

Most of line shared with goods (freight) trains (with "temporal separation").

The extension Trenton Transit Center – State House – West Trenton was not under active development at 2011 August.

See also Philadelphia.

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Charlotte (LRT 2007, Modern Streetcar 2018)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
LRT				
2007	(15.5) 9.6	Blue Line South Corridor (LYNX)	I-485 (Pineville) – 6 th Street	(15.5) 9.6

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning - LRT:				
by 2015	(23) 14	Blue Line Extension / Northeast Corridor (LYNX)	6 th Street – I-485/North Tryon	(39) 24
by 2026		LYNX Silver Line	Uptown/Gateway Station – CPCC Levine	
Under Construction, Under Design and In Planning - Modern Streetcar:				
by 2018		Center City Corridor (LYNX)	Rosa Parks Place – Presbyterian Hospital	
by 2023		"	Presbyterian Hospital – Eastland Community Transit Center	
by 2029		West Corridor (LYNX)	Charlotte Transit Center/Arena – Ashley	
by 2034		"	Ashley – Airport	

Note: Blue Line South Corridor opened 2007 November 26.

LYNX Silver Line planned for construction as bus rapid transit (BRT), (21.8 km) 13.5 mi, or LRT (20.5 km) 12.7 mi. Decision on technology planned during 2011.

Charlotte Streetcar Project (Center City Corridor), Rosa Parks Place – Eastland Community Transit Center, total segment length (16 km) 10 mi. Decisions about project staging and construction were pending at 2011 August.

The Charlotte Trolley, a heritage service, has a system length of (3.4 km) 2.1 mi. Most of this is shared by LRT trains but Trolley terminals are separate. Trolley service operates (0.3 km) 0.2 mi beyond the LYNX LRT 6th Street terminal, to 9th Street. Trolley terminal tracks at Atherton Mill parallel the LRT line for a short distance.

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Chicago (HRT 1892)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1964	+(7.9) 4.9	Yellow Line	Howard junction – Skokie	(116.6) 72.3
1969	+(1.0) 0.6	Green Line	Loomis – Ashland / 63 rd	
"	+(18.5) 11.5	Red Line	Tower 12 – 95 th / Dan Ryan	(136.1) 84.4
1970	-(0.2) 0.1	Blue Line	Linden Place – Logan Square	
"	+(8.2) 5.1	Blue Line	Linden Place – Jefferson Park	(144.2) 89.4
1980 System Length			(144.2 km) 89.4 mi	
1982	-(1.0) 0.6	Green Line	University – Jackson Park	(143.2) 88.8
1983	+(8.7) 5.4	Blue Line	Jefferson Park – Rosemont	(151.9) 94.2
1984	+(4.0) 2.5	Blue Line	Rosemont – O'Hare Airport	(156.0) 96.7
1993	+(1.2) 0.8	Red Line	Howard – Dan Ryan connection *	
"	+(14.8) 9.2	Orange Line	18 th St. junction – Midway Airport	(172.1) 106.7
1994	-(0.7) 0.4	Green Line	East 63 rd – Cottage Grove–University	(171.5) 106.3
2006	+(1.2) 0.8	Pink Line	Ashland – Polk	(172.7) 107.1

Notes: * 13th Interlocking – Cermak Junction.

System Length adjusted to avoid duplication of parallel Red Line and Brown Line segments (Armitage – Clark Junction), (2.8 km) 1.7 mi.

Today's Yellow Line was built by the Chicago North Shore and Milwaukee Railroad ("North Shore Line") as the south segment of its Skokie Valley Line. The Chicago Rapid Transit Company ("CRT") worked a local service, Howard – Skokie (then named Dempster Street). This was marketed as the CRT Niles Center branch, and was opened on 1925 March 28. North Shore Line trains worked on this line from 1926 June 5. CRT successor Chicago Transit Authority withdrew its Niles Center service from 1948 March 26. The North Shore Line was closed on 1963 January 20. Thereafter, CTA restored service to Dempster Street on 1964 April 20. This service was marketed as "Skokie Swift." The seven intermediate stations once served by CRT Niles Center trains were not reopened.

Green Line (Lake – Englewood / Jackson Park) closed for reconstruction 1994-1996. East 63rd - Cottage Grove – Dorchester segment, (1.1 km) 0.7 mi, not reopened, removed 1997.

Most service on the Cermak (Douglas) branch of the Blue Line was rerouted to the business center (the "Loop"), via a newly-reconstructed segment known as the "Paulina Connector," from 2006 June 25. Pink Line service was started for a 180-day trial period and was later made permanent. The "Paulina Connector" was built in 1895. Its previous scheduled service was withdrawn from 1958 June 21.

Chicago had no rail transit expansion projects under construction or under design at 2010 January. However, the "2030 Regional Transportation Plan for Northeastern Illinois," prepared by the metropolitan planning organization (the Chicago Metropolitan Agency for Planning), included the following:

Circle Line: Peripheral line west of the business center to permit operation of a new circular service. Ashland / Archer – 18th / Pilsen – Ashland / Lake – Division – North / Elston – North / Clybourn. Incorporates Paulina Connector, and includes (10.6 km) 6.6 mi of new line on viaduct ('L') and in tunnel ("subway").

Planned for construction in three phases. Phase I is the Paulina Connector. Phase II, connection between the Blue Line Cermak Branch (18th / Pilsen) and the Orange Line (Ashland / Archer). Phase III, connection between the Pink and Green lines (Ashland/Lake) and the Red Line (North / Clybourn).

Orange Line: Extension Midway – Ford City Mall, (3 km) 2 mi.

Yellow Line: Extension Skokie – Westfield Shoppingtown Old Orchard, (2.5 km) 1.5 mi.

Blue Line: Extension Forest Park – Oak Brook – Lombard (Yorktown Shopping Center, (21.4 km) 13.3 mi) – Lisle.

Long-standing plans for extension O'Hare – Schaumburg, (15.5 km) 9.5 mi, have been replaced by a suburban ("commuter") rail project (METRA STAR Line).

Red Line: 95th – 130th / Bishop Frd Freeway (10 km) 6 mi.

West Loop Transportation Center: New four-level underground tunnel below Clinton Street, with station adjacent to Union Station, (1.1 km) 0.7 mi. This would include a pedestrian mezzanine, a bus transitway, a rail-transit link and a suburban / intercity rail link. The rail transit link would connect the O'Hare and Forest Park branches of the 'L' Blue Line (below), permitting trains to serve Ogilvie Transportation Center and Union Station. The suburban / intercity rail link would provide a connection between Ogilvie Transportation Center and Union Station.

Mid-City Transitway: Not part of the regional transportation plan, but under study by the City of Chicago. Described as long-range concept for road or public transport. Planned for construction on

alignment Belt Railway of Chicago. This was once planned as the alignment of the Crosstown Expressway, a project now cancelled.

Planned to extend Jefferson Park or Montrose station (Blue Line) – Cicero stations (Green, Blue and Pink lines) – Midway station (Orange Line) – 87th station (Red Line) in Cicero Avenue and 74th Street. Decision on configuration (bus-only, truck-only, rail rapid transit) to follow, during subsequent planning stages.

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Cincinnati (Modern Streetcar 2013)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning:				
2013	+(5.4) 3.4	Cincinnati Streetcar	The Banks – Cincinnati Zoo	(5.4) 3.4

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Cleveland (HRT 1955, LRT 1920)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
HRT				
1955	+(12.9) 8.0	Red Line	Louis Stokes Station at Windermere – Tower City-Public Square	
"	+(8.5) 5.3	"	Tower City-Public Square – W.117 th -Madison	(21.5) 13.3
1958	+(2.9) 1.8	"	W.117 th -Madison – West Park	(24.4) 15.1
1968	+(6.8) 4.2	"	West Park – Cleveland Hopkins International Airport	(31.1) 19.3

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1980 System Length				(31.1 km) 19.3 mi
LRT				
1980 System Length				(16.9 km) 10.5 mi
1996	+(3.5) 2.2	Waterfront Line	Tower City-Public Square – South Harbor	(20.5) 12.7
Total HRT and LRT				(51.6 km) 32.0 mi

Notes: 1980 LRT system length includes (5.5 km) 3.4 mi of separated alignment and (11.4 km) 7.1 mi of reserved-track alignment.

Construction of initial Red Line segment ("East Side line") started at 1928 by private capital. Construction suspended 1930; line described at this time as "several months from completion." Project resumed by Cleveland Transit System (municipal undertaking) from 1952.

Initial segment of Red Line (HRT) incorporates (4.2-km) 2.6-mi segment of LRT line, Tower City-Public Square – E. 55th, opened in stages during 1920-1930. This was rebuilt for joint working by HRT and LRT stock. Single-end (PCC-type) LRT stock required left-hand running on this segment. This segment was changed to right-hand running following purchase of new LRT stock and rehabilitation of LRT lines (completed 1981).

LRT system length excludes the (4.2-km) 2.6-mi segment worked jointly with Red Line HRT trains, described above.

Historic opening dates for LRT lines are presented in Part 4 (Appendices).

Cleveland had no rail transit expansion projects under construction, under design or in planning at 2011 August. Nor were any such projects contained in the regional transportation improvement plan (*Connections 2030: A Framework for the 2030 Transportation System*), prepared by the metropolitan planning organization (the Northeast Ohio Areawide Coordinating Agency).

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Dallas (LRT 1996, Modern Streetcar 2015)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1996	+(13.7) 8.5	Red Line	Westmoreland – West End;	
	+(2.9) 1.8	Blue Line	Illinois – 8 th & Corinth	(16.6) 10.3
1997	+(4.0) 2.5	Blue Line	Ledbetter – Illinois;	
	+(11.6) 7.2	Red Line	West End – Park Lane	(32.2) 20.0
2001	+(5.5) 3.4	Blue Line	Mockingbird – White Rock	(37.7) 23.4
2002	+(5.6) 3.5	Blue Line	White Rock – LBJ / Skillman	
"	+(15.0) 9.3	Red Line	Park Lane – Galatyn Park	
"	+(6.6) 4.1	Blue Line	LBJ / Skillman – Downtown Garland	
"	+(5.1) 3.2	Red Line	Galatyn Park – Parker Road	(70.2) 43.5
2009	+(3.1) 1.2	Green Line (Northwest)	West End – Victory	
"	+(4.4) 2.7	Green Line (Southeast)	Pearl – MLK Jr.	(76.5) 47.4
2010 Dec	+(11.9) 7.4	"	MLK – Buckner	(88.4) 54.8
"	+(4.5) 2.8	Green Line (Northwest)	Victory – Inwood	
"	+(5.2) 3.2	"	Inwood – Bachman (Northwest Highway)	
"	+(7.9) 4.9	"	Bachman – Farmers Branch	
"	+(8.9) 5.5	"	Farmers Branch – North Carrollton / Frankford	(114.8) 71.2
Under Construction, Under Design and In Planning - LRT:				
2011 Dec	+(8.2) 5.1	Orange Line (Northwest)	Bachman – Las Colinas Urban Center	(123.1) 76.3

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2012 Dec	+(6.6) 4.1	"	Las Colinas Urban Center – Belt Line Road	
"	+(14.4) 4.5	Blue Line (Northeast)	Downtown Garland – Downtown Rowlett	(136.9) 84.9
2013 Dec	+(7.7) 4.8	Orange Line (Northwest)	Belt Line Road – DFW Airport	(144.7) 89.7
Under Construction, Under Design and In Planning - Modern Streetcar:				
2015	+(2.4) 1.5	Downtown Dallas Streetcar	Union Station – Methodist Dallas Medical Center	(2.4) 1.5

Note: Green Line segments West End – Victory and Pearl – MLK Jr. opened 2009 September 14. (West End – Victory opened 2004 November 12 for special event service only.)

Green Line extensions to Buckner and North Carrollton / Frankford opened 2010 December 6.

See also Denton.

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Denton (Lightweight DMU 2011)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2011	+(34) 21	A-train	Trinity Mills – Downtown Denton Transit Center	(34) 21

Note: A-train opening planned for 2011 June. Not electrified.

This line is described as "regional rail." It will connect with the Dallas (DART) LRT Green Line at Trinity Mills. Initial service will be operated by "RDC"-type DMU stock hired from Trinity Railway Express (Dallas-Fort Worth). New DMU stock built by Stadler is planned for delivery during 2012. Service planned

for operation Monday - Friday, during morning and evening peak periods, with possible late evening service on Friday and Saturday.

In common with other lines using lightweight DMU stock, the A-train will share tracks with goods (freight) trains (with "temporal separation").

See also Dallas.

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Denver (LRT 1994)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1994	+(8.5) 5.3	Central Corridor	30 th & Downing – I-25 & Broadway	(8.5) 5.3
2000	+(13.4) 8.3	Southwest Corridor	I-25 & Broadway – Littleton / Mineral	(21.9) 13.6
2002	+(2.9) 1.8	Platte Valley Spur	10 th & Osage – Union Station	(24.8) 15.4
2006	+(31.1) 19.3	T-REX (Southeast Corridor)	I-25 & Broadway – Lincoln; Bellevue – Nine Mile	(56.0) 34.7
Under Construction, Under Design and In Planning:				
2013	+(19.5) 12.1	West Corridor	Auraria West – JeffCo Government Center	(75.5) 46.8
2015	+(16.9) 10.5	I-225 Corridor	Nine Mile – Peoria / Smith	(92.4) 57.3
"	+(1.3) 0.8	Central Corridor	40 th & 40 th – 30 th & Downing	(93.7) 58.1
2017	+(3.7) 2.3	Southeast Corridor	Lincoln – RidgeGate Parkway	(97.4) 60.4
"	+(4.0) 2.5	Southwest Corridor	Littleton / Mineral – C-470 / Lucent Boulevard	(101.5) 62.9

Note: "T-REX" (Southeast Corridor) Project opened 2006 November 19.

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Detroit (AGT 1987, LRT 2016)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
AGT				
1987	+(4.7) 2.9	Detroit People Mover	Renaissance Center – Cadillac Center – Joe Louis Arena – Renaissance Center	(4.7) 2.9
Under Construction, Under Design and In Planning - LRT:				
	+(5.5) 3.4	M-1 Rail Line	Hart Plaza – New Center	(5.5) 3.4
2016	+(9.5) 5.9	Woodward Rail	New Center – Eight Mile Road	(15.0) 9.3

Note: Detroit People Mover is a one-way loop; worked anti (counter)-clockwise.

LRT: M-1 Rail project promoted from 2007 by private investors, who pledged to raise USD 125 million to pay the construction cost. This sum will also qualify as the "local match" for the extension to Eight Mile Road, to be built by the Detroit Department of Transportation (DDOT).

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Fort Worth (LRT 1963–2002, Modern Streetcar 2015)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
LRT (line now closed)				
1980 System Length				(1.9 km) 1.2 mi
2002	-(1.9) 1.2	Tandy Subway	Tandy Center Complex – Station 3	0.0
Under Construction, Under Design and In Planning - Modern Streetcar:				

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2015	+(5.2) 3.2	Fort Worth Streetcar	NE 5 th Street – W Magnolia Avenue	(5.2) 3.2

Note: Tandy Center Subway (built as Leonards M&O Subway), opened 1963 February 15, closed 2002 August 30.

Fort Worth Streetcar: initial segment planned to extend N Commerce Street / NE 5th Street – Fort Worth Intermodal Transit Center – S Main Street / W Magnolia Avenue

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Honolulu (HRT 2012)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning:				
2012	+(4.8) 3.0	Honolulu Rail Transit	West Loch – Pearl Highlands	(4.8) 3.0
2013	+(5.6) 3.5	"	East Kapolei – West Loch	(10.5) 6.5
2016	+(5.6) 3.5	"	Pearl Highlands – Aloha Stadium	(16.1) 10.0
2017	+(8.9) 5.5	"	Aloha Stadium – Middle Street	(25.0) 15.5
2019	+(7.3) 4.5	"	Middle Street – Ala Moana Center	(32.3) 20.0

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Houston (LRT 2004)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2004	+(12.1) 7.5	METRO Rail (Red)	UH-Downtown – Fannin South	(12.1) 7.5
Under Construction, Under Design and In Planning:				
2014	+(8.5) 5.3	North (Red) Corridor	Northline Transit Center – UH-Downtown	(20.6) 12.8
"	+(9.8) 6.1	Southeast (Purple) Corridor	Smith – Bastrop – Palm Center	(30.5) 18.9
"	+(5.3) 3.3	East End (Green) Corridor	Bastrop – Magnolia Transit Center	(35.8) 22.2
-	+(18.2) 11.3	University (Blue) Corridor	Hillcroft Transit Center – Newcastle – Wheeler – UH Central – Eastwood Transit Center	(54.0) 33.5
-	+(7.6) 4.7	Uptown (Gold) Corridor	Bellaire – Northwest Transit Center	(61.6) 38.2

Note: METRO Rail line opened 2004 January 1 (fare-free until 2004 January 5).

No construction schedule for the University and Uptown lines had been announced at 2011 August.

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Jacksonville (ACT 1989-1996, Monorail 1997)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1989	+(1.1) 0.7	JTA Skyway	Convention Center – Central	(1.1) 0.7

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1996	-(1.1) 0.7	"	Convention Center – Central	0.0
1997	+(1.5) 0.9	"	Convention Center – Hemming Plaza	(1.5) 0.9
1998	+(0.5) 0.3	"	Hemming Plaza – FCCJ	(1.9) 1.2
1998	+(1.5) 0.9	"	Central – San Marco	(3.4) 2.1
2000	+(0.6) 0.4	"	San Marco – Kings Avenue	(4.0) 2.5

Notes: Line opened 1989 with steel-wheel, linear-motor stock built by MATRA. Closed 1996. Replaced by monorail stock built by Bombardier, opened 1997.

Operates Monday – Saturday. Sunday service operates for special events.

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Jersey City (LRT 2000)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2000	+(10.0) 6.2 +(2.3) 1.4	Hudson-Bergen Light Rail	Exchange Place – East 34 th St; Liberty State Park – West Side Avenue	
"	+(1.6) 1.0	"	Exchange Place – Pavonia-Newport	(13.9) 8.6
2002	+(1.9) 1.2	"	Pavonia-Newport – Hoboken Terminal	(15.8) 9.8
2003	+(1.5) 0.9	"	East 34 th Street – East 22 nd Street	(17.3) 10.7
2004	+(3.5) 2.2	"	Hoboken Terminal – Lincoln Harbor	(20.8) 12.9
2006	+(4.7) 2.9	"	Lincoln Harbor – Tonnelle Avenue Park and Ride	(26.8) 16.6
2010	+(2.1) 1.3	"	East 22 nd Street – East 8 th Street	(28.9) 17.9

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning:				
	+ (5.5) 3.4	"	Tonnelle Avenue Park and Ride – Vince Lombardi Park and Ride	(34.3) 21.3

Notes: Hoboken Terminal – Lincoln Harbor extension opened 2004 September 7. Lincoln Harbor – Tonnelle Avenue Park and Ride opened 2006 February 25. East 22nd Street – East 8th Street opened 2011 January 31.

The project to extend the system to Vince Lombardi Park and Ride was not active at 2011 August. Other possible extensions were under study.

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Las Vegas (Monorail 2004)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2004	+ (6.3) 3.9	Las Vegas Monorail	Sahara – MGM Grand	(6.3) 3.9

Note: Line opened 2004 July 15.

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Los Angeles (HRT 1993, LRT 1990)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
HRT				

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1993	+(4.8) 3.0	Metro Red Line	Union Station – Westlake / MacArthur Park	(4.8) 3.0
1996	+(3.2) 2.0	"	Westlake / MacArthur Park – Wilshire / Western	(8.1) 5.0
1999	+(7.7) 4.8	"	Wilshire / Vermont – Hollywood / Vine	(15.8) 9.8
2000	+(10.2) 6.3	"	Hollywood / Vine – North Hollywood	(26.0) 16.1
LRT				
1990	+(31.5) 19.5	Metro Blue Line	Pico – Anaheim	(31.5) 19.5
"	+(1.9) 1.2	"	Anaheim – Transit Mall	(33.4) 20.7
1991	+(1.3) 0.8	"	7 th Street / Metro Center / Julian Dixon – Pico	(34.7) 21.5
1995	+(31.0) 19.2	Metro Green Line	Redondo Beach – Norwalk	(66.3) 41.1
2003	+(21.9) 13.7	Metro Gold Line	Union Station – Sierra Madre Villa	(87.7) 54.4
2009	+(9.5) 5.9	Eastside Metro Gold Line	Union Station – Beverly / Atlantic	(123.2) 76.4
Total HRT and LRT (at 2010)			(123.2 km) 76.4 mi	
Under Construction, Under Design and In Planning - HRT				
by 2022	+(15) 9	Metro Westside Subway Extension	Wilshire / Western – Westwood / VA Hospital	(40) 25
Under Construction, Under Design and In Planning - LRT				
by 2012	+(12.1) 7.5	Metro Expo Line	Washington Boulevard (junction) – Venice / Robertson	(135.3) 83.9
by 2014	+(18.2) 11.3	Metro Gold Line Foothill Extension	Sierra Madre Villa – Azusa-Citrus	(153.5) 95.2

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
by 2015	+(10.6) 6.6	Metro Expo Line	Venice / Robertson – 4 th / Colorado	(164.2) 101.8
by 2018	+(13.7) 8.5	Metro Crenshaw Line	Crenshaw / Expo – Metro Green Line (junction)	(177.9) 110.3
by 2019	+(20.3) 12.6	Metro Gold Line Foothill Extension	Azusa-Citrus – Montclair Transcenter	(198.2) 122.9
by 2019	+(2.9) 1.8	Metro Regional Connector	7 th Street / Metro Center / Julian Dixon – Little Tokyo	(201.1) 124.7
by 2035	+(4.4) 2.7	Metro Green Line South Bay Extension	Redondo Beach – South Bay Galleria	(205.5) 127.4

Note: Eastside Metro Gold Line (official title Edward R. Roybal Metro Gold Line Eastside Extension) was opened on 2009 November 16.

The Metro Westside Subway Extension was planned for construction in states at 2011 August, but details had not been announced.

The Metro Expo and Crenshaw lines will receive "line color" designations prior to opening, but no decisions had been made at 2011 August.

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Memphis (LRT 1993)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1993	+(4.0) 2.5	Main Street	Auction Avenue – Calhoun Avenue	(4.0) 2.5
1997	+(3.2) 2.0	Riverfront	Auction Avenue – Calhoun Avenue	(7.3) 4.5
2004	+(4.0) 2.5	Medical Center	Main Street – Cleveland Avenue	(11.3) 7.0

Notes: The MATA Trolley system is worked currently by vintage and replica stock. Infrastructure was designed and built to accommodate light-rail stock.

Main Street line includes (1.3 km) 0.8 mi of reserved-track alignment (transit mall) and (2.7 km) 1.7 mi of in-street alignment.

Riverfront line, single-track, operates in southward direction. Cars return northward on Main Street Line. Includes (2.7 km) 1.7 mi of reserved-track alignment and (0.5 km) 0.3 mi of in-street alignment.

Medical Center extension opened 2004 March 15.

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Miami (HRT 1984, AGT 1986)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
HRT				
1984	+(15.3) 9.5	Metrorail Green Line	Dadeland South – Overtown / Arena	(15.3) 9.5
1984	+(6.3) 3.9	"	Overtown / Arena – Earlington Heights	(21.6) 13.4
1985	+(11.5) 7.1	"	Earlington Heights – Okeechobee	(33.1) 20.5
2003	+(2.3) 1.4	"	Okeechobee – Palmetto	(35.3) 21.9
AGT				
1986	+(3.1) 1.9	Metromover Downtown Loop	Government Center – Bayfront Park – Government Center	(3.1) 1.9
1994	+(1.5) 0.9	" Omni Loop	Downtown Loop – School Board;	(7.1) 4.4
	+(2.6) 1.6	" Brickell Loop	Downtown Loop – Financial District	
Total HRT and AGT (at 2010)			(42.4 km) 26.3 mi	
Under Construction, Under Design and In Planning - HRT:				

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2012	+(3.5) 2.4	Metrorail Orange Line Earlington Heights - MIC Connection	Earlington Heights – MIC (Miami Intermodal Center)	(39.2) 24.3
2014	+(15.3) 9.5	Metrorail North Corridor	Dr. Martin Luther King, Jr., Plaza – Calder Race Course	(54.5) 33.8
2016	+(17.1) 10.6	Metrorail East-West Corridor	MIC – FIU (Florida International University)	(71.6) 44.4

Note: North and East-West corridor projects placed on "indefinite hold" during 2009 because of funding shortfall.

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Milwaukee (Modern Streetcar 2013)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning:				
2013	+(3) 2	Milwaukee Connector Streetcar Project	W. St. Paul Street / N. 4th Street – E. Ogden Avenue / N. Franklin Place	(3) 2

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Minneapolis-St. Paul (LRT 2004)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2004	+(12.6) 7.8	Hiawatha Line	Warehouse District / Hennepin Avenue – Fort Snelling	(12.6) 7.8
"	+(6.8) 4.2	"	Fort Snelling – Mall of America	(19.4) 12.0
Under Construction, Under Design and In Planning				
2014	+(18) 11	Central Corridor	Hiawatha Line (junction) – 4 th & Cedar	(37) 23

Note: Warehouse District / Hennepin Avenue – Fort Snelling (Phase I) opened 2004 June 26. Fort Snelling – Mall of America (Phase II) opened 2004 December 4.

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Monterey (Lightweight DMU 2015)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning:				
2015	+(16.4) 10.2	Monterey Peninsula Fixed Guideway Service	Customs House Plaza (Monterey) – Marina Green	(16.4) 10.2

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New Orleans (LRT 1835)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1980 System Length		12-St. Charles Streetcar Line	Carondelet-Canal – Carrollton-Clairborne	(10.5) 6.5
1988	+(2.4) 1.5	2-Riverfront Streetcar Line	Esplanade – Julia	(12.9) 8.0
1990	+(0.8) 0.5	"	Julia – * Thalia	(13.7) 8.5
1999	+(0.6) 0.4	Canal Streetcar Line	Riverfront – Baronne / Dauphine	(14.4) 8.9
2004	+(5.0) 3.1	Canal Streetcar Line	St. Charles – Cemeteries Terminal	(20.8) 12.9
	+(1.5) 0.9	City Park Branch	Canal – Beauregard Circle	
Under Construction, Under Design and In Planning:				
2012	+(1.3) 0.8	Loyola Avenue Loop	Canal – Union Passenger Terminal	(22.1) 13.7
-	+(3.1) 1.9 +(1.0) 0.6	French Quarter Loop	Canal – Press Street St. Claude Avenue – French Market Station (Riverfront Line)	(26.1) 16.2
-	+(2.9) 1.8	Convention Center Loop	Canal – * Thalia	(29.0) 18.0

Notes: St. Charles tramway ("streetcar") line opened 1835, electrified 1893, regauged from standard (1,435mm = 4' 8½") to (1,588 mm) 5' 2½" 1929.

* Riverfront Line Thalia Street terminal now named John Churchill Chase Station.

System length includes (9.0 km) 5.6 mi of reserved-track alignment in street medians ("neutral ground" and (1.5 km) 0.9 mi of in-street alignment.

Riverfront streetcar line built as standard gauge, regauged to (1,588 mm) 5' 2½" 1997. Reserved-track alignment.

Previous Canal Street line built 1861, electrified 1894, replaced by motorbus 1964.

Demonstration service on Canal Street between Riverfront and Dauphine Street from 1999.

Canal streetcar line and City Park branch (lines 42-Canal/Cemeteries and 45-Canal/City Park) opened 2004 April 18. Reserved-track alignment in street and road medians ("neutral ground").

Operation suspended 2005 August 28 because of tropical storm ("Hurricane Katrina"). Riverfront line, and Canal line between business center ("downtown") and Crozat Street, reopened 2005 December 18 using cars from St. Charles line fleet. Remainder of Canal line reopened 2006 April 2.

St. Charles line reopened 2006 December 19 between Canal Street and Lee Circle. Reopening of remainder delayed because of damage to overhead system, and decision to carry out previously-planned renewal of overhead system prior to reopening.

St. Charles line reopened 2007 November 11 between Lee Circle and Napoleon Avenue. Reopened 2007 December 23 between Napoleon Avenue and South Carrollton Avenue. Remainder reopened 2008 June 22.

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New York (HRT 1871)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1967	+(3.9) 2.4	IND Chrystie St	Houston St – Canal St	(431.3) 267.4
1968	+(0.6) 0.4	IND 6 th Av	53 St – 58 St	(431.9) 267.8
1968	+(0.5) 0.3	IRT Lenox Av	145 St – Harlem-148 St	(432.4) 268.1
1969	-(4.4) 2.7	Myrtle Av El	Bridge-Jay Sts – Broadway	(428.1) 265.4
1973	-(8.9) 5.5	Third Av El	149 St – Gun Hill Rd	(419.2) 259.9
1977	-(1.6) 1.0	Culver Shuttle	9 Av – Ditmas Av	(417.6) 258.9
1977	-(1.5) 0.9	BMT Jamaica Line (Jamaica Av El)	Queens Blvd – 168 St	(416.1) 258.0
1980 System Length			(416.1 km) 258.0 mi	
1985	-(0.6) 0.4	BMT Jamaica Line (Jamaica Av El)	Archer Avenue Subway junction – Queens Blvd	(415.5) 257.6

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1988	+ (2.4) 1.5 + (0.8) 0.5	Archer Avenue Subway	Van Wyck Blvd – Parsons Blvd; Connection to BMT Jamaica Line	(418.7) 259.6
1989	+ (3.5) 2.2 + (0.6) 0.4	63rd Street Tunnel	57 St – Queensbridge-21 St Connection to BMT Broadway Line	(422.9) 262.2
2001	+ (1.0) 0.6	63rd Street Connector	Queensbridge-21 St – 36 St	(423.9) 262.8
Under Construction, Under Design and In Planning:				
2013	+ (1.6) 1.0	7 Subway Extension	Times Sq – 34 St	(425.5) 263.8
2016	+ (3.1) 1.9	Second Avenue Subway	63 St / Lexington Avenue – 96 St	(428.5) 265.7
	+ (2.4) 1.5	"	96 St – 125 St	(431.0) 267.2
	+ (5.5) 3.4	"	72 St – Houston Street	(436.5) 270.6
2024	+ (2.7) 1.7	"	Houston Street – Hanover Square	(439.2) 272.3

Notes: Cumulative System Length statistic includes NYCT, PATH and SIRy.

Operation suspended 1985-1988 over portion of BMT Jamaica Line between 121 St and junction with new Archer Avenue Subway, (0.6 km) 0.4 mi.

Segment of Archer Avenue Subway shared by BMT Jamaica and IND Queens Boulevard lines has two levels; upper level is used by IND Queens Boulevard trains, and lower level by BMT Jamaica Line trains.

63rd Street Tunnel Line connection to BMT Broadway Line (59th St & 7th Av) had not been used for scheduled service (to 2011 August).

2004 system length includes segments with operation suspended temporarily for rehabilitation, and from 2001 September 11 because of damage caused by terrorist attack.

The Second Avenue Subway is planned for construction in four phases during a 16-year interval. Only Phase 1 was under construction at the time of writing (2011 March). Phase 2 is planned to incorporate two tunnel segments built during 1972-1975.

Newark (LRT 1935)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1980 System Length				(6.9 km) 4.3 mi
2002	+(1.3) 0.8	7-City Subway	Branch Brook Park – Grove Street	(8.2) 5.1
2006	+(1.6) 1.0	Newark Rail Link	Newark Penn Station – Broad Street Station	(9.8) 6.1

Note: Newark Rail Link opened 2006 July 7. Service marketed as "Newark Light Rail" from that date.

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Norfolk (LRT 2011)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2011	+(11.9) 7.4	The Tide	Medical Center – Newtown Road	(11.9) 7.4

Note: Commercial service opened 2011 August 29. Fare-free introductory service started 2011 August 19.

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Oceanside - Escondido (Lightweight DMU 2008)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2008	+(35) 22	Sprinter	Oceanside – Escondido	(35) 22

Note: Opening ceremony held 2007 December 28. Start of service planned for 2008 January 13; postponed to 2008 March 9. Not electrified. Previous passenger service withdrawn 1946.

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Oklahoma City (Modern Streetcar 2020)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning:				
2020	*	Modern Transit Project	*	*

Note: System length described as (8 to 10 km) 5 to 6 miles. Segments described as Union Station – Bricktown – State Capitol Complex, and Union Station – Myriad Gardens – Historic Neighborhoods.

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Philadelphia (LRT 1905, HRT 1907; includes SEPTA, PATCO)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
HRT - SEPTA				
1973	+(1.9) 1.2	Orange Line	Snyder – Pattison	(38.7) 24.0

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1977	-(1.9) 1.2	Blue Line	* (see Notes)	
1977	+(1.9) 1.2	"	* (see Notes)	
HRT - PATCO				
1969	+(17.6) 10.9	PATCO Speedline	Walter Rand Transportation Center – Lindenwold	(23.4) 14.5
1980 System Length				(62.1 km) 38.5 mi
LRT				
1970 System Length				(160.8 km) 99.7 mi
1975	-(1.6) 1.0	Route 36	Eastwick-80 th – Eastwick-88 th	(159.2) 98.7
1977	-(8.5) 5.3	Route 60	Allegheny-35 th – Richmond-Westmoreland	(150.6) 93.4
1980	-(18.7) 11.6	Route 50	6 th -Oregon – Rising Sun-Knorr	(131.9) 81.8
1986	-(4.8) 3.0	Route 6	Broad-Olney – City Line Loop	(127.1) 78.8
"	-(7.3) 4.5	Route 53	10 th -Luzerne – Wayne-Carpenter	(119.8) 74.3
1989	-(0.2) 0.1	Norristown Line	Norristown – Norristown Transportation Center (new station)	(119.7) 74.2
1992	-(20.8) 12.9	Route 23	12 th -Bigler – Germantown-Bethlehem Pike	(98.9) 61.3
"	-(12.3) 7.6	Route 56	23 rd -Venango – Torresdale-Cottman	(86.6) 53.7
"	-(13.7) 8.5	Route 15	63 rd -Girard – Richmond-Westmoreland	(72.9) 45.2
2005	+(13.7) 8.5	"	"	(86.6) 53.7
Total HRT and LRT (operating)				(148.7 km) 92.2 mi
Under Construction, Under Design and In Planning - LRT:				
2015	+ (4.6) 2.8 + (10.6) 6.6	Waterfront LRT	City Hall – Columbus Boulevard; Pier 70 – Penn's Landing – Girard Avenue	(101.8) 63.1

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
by 2022 but see Notes	+(20.8) 12.9	Route 23	12 th -Bigler – Germantown-Bethlehem Pike (restoration of rail service)	
by 2022 but see Notes	+(12.3) 7.6	Route 56	23 rd -Venango – Torresdale-Cottman (restoration of rail service)	

Notes:

* segment of line, north of Market Street – south of Girard station, relocated from viaduct ("elevated") to median of new motorway ("Delaware Expressway").

HRT Track Gauges:

Market-Frankford Subway-Elevated (SEPTA): (1,581 mm) 5' 2¼".

Broad Street Subway (SEPTA): standard (1,435 mm = 4' 8½").

Port Authority Transit Corporation (PATCO): standard.

LRT System Length Totals: 1970 LRT system length includes the following:

City Transit Division subway-surface tramway ("trolley") lines (10, 11, 13, 34 and 36), (35.5 km) 20.8 mi. Track gauge (1,581 mm) 5' 2¼". Includes (4.0 km) 2.5 mi of separated alignment, (1.6 km) 1.0 mi of reserved-track alignment, and (27.9 km) 17.3 mi of in-street alignment.

City Transit Division surface tramway ("trolley") lines (6, 15, 23, 50, 53, 56 and 60), (86.1 km) 53.4 mi. Track gauge (1,581 mm) 5' 2¼". In-street alignment.

Suburban Transit Division Norristown Line, (21.9 km) 13.6 mi. Separated alignment. Standard gauge.

Suburban Transit Division Media and Sharon Hill lines, (19.2 km) 11.9 mi. Track gauge (1,581 mm) 5' 2¼". Includes (16.6 km) 10.3 mi of reserved-track alignment, and (2.6 km) 1.6 mi of in-street alignment.

2004 LRT system length, (86.6 km) 53.7 mi includes:

- Subway-surface lines, (31.9 km) 19.8 mi.
- Route 15-Girard, (13.7 km) 8.5 mi; reopened 2005 September 4.
- Norristown Line, (21.8 km) 13.5 mi.
- Media and Sharon Hill lines, (19.2 km) 11.9 mi.

National Transit Database (NTD) Statistics:

NTD statistics reported by SEPTA combine:

--City Transit Division subway-surface tramway ("trolley") lines, surface tramway ("trolley") lines and Suburban Transit Division Media and Sharon Hill lines as "LRT." (Route 15-Girard (above) was the only surface tramway line in operation at 2011 August.)

--City Transit Division HRT lines (Market-Frankford Subway-Elevated and Broad Street Subway) and Red Arrow Division Norristown Line as "HRT."

Historic opening dates for in-street and reserved-track segments of "LRT" lines are presented in Part 4 (Appendices).

Waterfront LRT:

"Philadelphia Waterfront Transit Expansion," in planning by the Port Authority Transit Company (PATCO).

Restoration of tramway ("trolley") lines 23 and 56:

SEPTA has proposed to "program" capital funds for restoration of tramway ("trolley") service to lines 23 and 56. This proposal is exactly that - a proposal - and should not be interpreted as anything more. It appears, together with other proposals for capital expenditures, in annual capital budgets approved by the SEPTA board. No funds have been committed (at 2011 August); in fact, no funds have been identified for this or for other capital expenditures that might be described as "unfunded proposals."

U.S. public transport operators are required to prepare and publish four-year and twelve-year capital plans that coincide with the regional Transportation Improvement Program. The proposed expenditures described above appear in the "twelve-year" portion of each annual plan - that is, among the projects to be funded during "Years 5-12" (e.g. fiscal years 2015-2022) of the given capital plan (e.g. the current plan, which covers fiscal years 2011-2022). The stated purpose of the project descriptions and

budget allocations for "Years 5-12" is to provide "an overview of projects proposed for programming in future budget years."

Comparison of SEPTA's [Fiscal Year 2007 Capital Budget and Fiscal Years 2007-2018 Capital Program](#) (pdf format; scroll down to Page 71) and Fiscal Year 2011 [Capital Budget and Fiscal Years 2011-2022 Capital Program](#) (pdf format; scroll down to Page 71) reveals that the amounts of the "budget allocations" for the "restoration of trolley service to Routes 23 and 56" was not changed - USD 189 million for "Infrastructure Improvements, and USD 130 million for "Vehicle Purchase" (USD 130 million) needed for tramway reopening was not changed. However, the time frame was changed - from 2012-2018 (FY 2007 capital budget) to 2015-2022 (FY 2011 capital budget). This is not at all a "postponement;" it is not even a "change" from the perspective of the capital budgeting process. The project has been proposed for funding during "Years 5-12" of each successive capital budget back to 2007 (at least). This appears likely to continue until the project either receives funding or is removed from the list of proposed capital expenditures; the latter might have significant political repercussions.

See also Camden - Trenton.

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Phoenix (LRT 2008)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2008	+(32.0) 19.8	METRO Light Rail	Phoenix Christown Mall – Main at Sycamore (Mesa)	(32.0) 19.8
Under Construction, Under Design and In Planning:				
2016	+(5.0) 3.1	METRO Light Rail Central Mesa Extension	Main at Sycamore (Mesa) – Mesa Drive	(36.9) 22.9
2016	+(4.0) 2.5	* Tempe South	University (Tempe) – Southern Avenue (Tempe)	
2021	+(18) 11	* Phoenix West	79 th Avenue – ASU Downtown Campus	

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2023	+(5.2) 3.2	METRO Light Rail Northwest Extension	Dunlap Avenue – Phoenix Christown Mall	
2026	+(2.9) 1.8	"	Metrocenter Mall – Dunlap Avenue	
2026	+(8) 5	* Glendale	Downtown Glendale – Phoenix Christown Mall	
2031	+(19) 12	* Northwest Phoenix	Central Avenue – Paradise Valley Mall	

Note: Opened 2008 December 29.

* "Transit mode and route to be determined" for Tempe South, Phoenix West, Glendale and Northwest Phoenix corridors.

** Tempe South corridor was recommended for construction as a Modern Streetcar line at 2010 September.

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Pittsburgh (LRT 1904; “Stage I” reconstruction completed 1987)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1984	** +(3.7) 2.3 +(0.4) 0.3	South Hills Village line	Castle Shannon – Washington Junction – Dorchester Dorchester – South Hills Village	(27.9) 17.3
"	* +(7.6) 4.7	Library line	Washington Junction – Library	(35.5) 22.0
"	* -(8.7) 5.4	Dormont line	South Hills Junction – Castle Shannon	(24.4) 16.6
1985	** +(2.7) 1.7	52-Allentown	Smithfield Street Bridge – South Hills Junction	(29.5) 18.3

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
"	-(3.9) 2.4		Downtown surface track, Smithfield Street Bridge	
"	+(0.8) 0.5 +(1.9) 1.2	Subway Panhandle Tunnel and Bridge	Gateway Center – Steel Plaza Steel Plaza – Station Square	(28.7) 17.6
1986	* -(2.4) 1.5 ** +(2.1) 1.3	52-Allentown Drake branch	Panhandle Bridge –South Hills Junction Dorchester – Drake	(28.1) 17.4
1987	** +(8.7) 5.4	Dormont line	South Hills Junction – Castle Shannon	(36.8) 22.8
1988	+(0.5) 0.3	Penn Station branch	Steel Plaza – Penn Station	(37.3) 23.1
1993	** +(2.4) 1.5	52-Allentown	Panhandle Bridge – South Hills Junction	(39.7) 24.6
"	* -(8.9) 5.5	Overbrook line	South Hills Junction – Overbrook – Castle Shannon	(30.8) 19.1
1999	* -(2.1) 1.3	Drake branch	Dorchester – Drake	(28.7) 17.8
2004	** +(8.9) 5.5	Overbrook line	South Hills Junction – Overbrook – Castle Shannon	(37.6) 23.3
Under Construction, Under Design and In Planning:				
2012	+(1.9) 1.2	North Shore Connector	Gateway Center – Allegheny	(39.5) 24.5

Notes: *operation suspended. ** operation restored.

Most of the Pittsburgh LRT system was upgraded from segments opened prior to opening of initial "LRT" service on 1987 May 23. Details are presented in Part 4 (Appendices).

"Stage I" modernization includes (16.9 km) 10.5 mi: Gateway Center – Mount Lebanon – Castle Shannon – South Hills Village, and Steel Plaza – Penn Station, together with route 52-Allentown. Construction started 1980. Operation of Castle Shannon – Library and Washington Junction – Drake segments, and Allentown line, suspended 1982, leaving (27.9 km) 17.3 mi in operation.

Downtown subway, reconstructed Panhandle Tunnel, Panhandle Bridge and connection to Mount Washington Tunnel (Gateway Center – Steel Plaza – Station Square) opened 1985 July 7. Operation of new light rail vehicles confined to this segment until opening of reconstructed line South Hills Junction – Mount Lebanon – Castle Shannon on 1987 May 23.

"Stage II" modernization was outlined initially to include the remainder of the system: South Hills Junction – Overbrook – Castle Shannon – Library, and Dorchester – Drake. Overbrook line operation suspended 1993. Reconstruction started 2000, line reopened 2004 June 2. Operation of Dorchester – Drake segment suspended 1999. Financing had not been secured for reconstruction (at 2011 March).

Steel Plaza – Penn Station segment operated only during peak periods from 1993. All remaining service suspended from 2007 (except for that operated on occasion for special events).

52-Allentown line operated only during peak periods from 2005.

Operation of South Hills Junction – Traymore segment of Dormont line suspended for six months in 2007 to permit reconstruction of Palm Garden bridge. Peak-period service to Penn Station not resumed following reopening.

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Portland (LRT 1986, Modern Streetcar 2001)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
LRT - Metropolitan Area Express (MAX)				
1986	+(24.4) 15.1	Eastside MAX (Blue Line)	11 th Ave – Cleveland Ave	(24.4) 15.1
1997	+(0.8) 0.5	Westside MAX (Blue Line)	11 th Ave – Goose Hollow / SW Jefferson	(25.2) 15.6
1998	+(27.2) 16.9	"	Goose Hollow / SW Jefferson – Hatfield Government Center	(52.3) 32.5
2001	+(8.9) 5.5	Airport MAX (Red Line)	Gateway/NE 99th Ave TC – Portland International Airport	(61.3) 38.0

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2004	+(9.4) 5.8	Interstate MAX (Yellow Line)	Interstate / Rose Quarter – Expo Center	(70.6) 43.8
2009	+(2.9) 1.8	MAX Yellow Line	Portland State – Union Station (Portland Mall)	
"	+(10.5) 6.5	MAX Green Line	Gateway Transit Center – Clackamas Transit Center	(84.0) 52.1
Modern Streetcar - Portland Streetcar				
2001	+(3.8) 2.5	Portland Streetcar	Good Samaritan Hospital – Portland State	(3.8) 2.5
2005	+(1.0) 0.6	RiverPlace Extension	Portland State – RiverPlace	(5.0) 3.1
2006	+(1.0) 0.6	South Waterfront Extension	RiverPlace – SW Moody / Gibbs	(6.0) 3.7
2007	+(0.6) 0.4	SW Lowell Extension	SW Moody / Gibbs – SW Moody / Lowell	(6.6) 4.1
Total LRT and Modern Streetcar (at 2010)				(90.6 km) 56.2 mi
Under Construction, Under Design and In Planning - LRT:				
2015	+(11.8) 7.3	Milwaukie / South Corridor	PSU South / SW Jackson Street – SE Park Avenue	(95.8) 59.4
2018	+(4.7) 2.9	MAX Yellow Line	Expo Center – Marshall Center / Clark College	(100.5) 62.3
2007	+(0.6) 0.4	SW Lowell Extension	SW Moody / Gibbs – SW Moody / Lowell	(6.6) 4.1
Under Construction, Under Design and In Planning - Modern Streetcar:				
2012	+(5.3) 3.3	Eastside Streetcar Loop	Lovejoy Street – Oregon Museum of Science and Industry (OMSI)	(11.9) 7.4

Notes: Interstate MAX (Yellow Line) opened 2004 May 1.

Portland Streetcar RiverPlace Extension opened 2005 March 11.

Portland Streetcar South Waterfront Extension opened 2006 September 8.

Portland Streetcar SW Lowell Extension opened 2007 August 17.

Portland Mall segment opened 2009 August 30.

MAX Green Line opened 2009 September 12. Portland Mall worked by Yellow and Green lines from this date.

Portland Streetcar Eastside Loop service is planned to share the (planned) Caruthers Bridge (0.8 km, 0.5 mi) with MAX trains to Milwaukie, completing the loop between OMSI and RiverPlace.

The "Westside Commuter Express" suburban ("commuter") rail service is worked by DMU stock. However, the category "Lightweight DMU" is not appropriate because this stock is "compliant" with Federal Railroad Administration crashworthiness standards. This line was therefore excluded from this compilation.

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Sacramento (LRT 1987, Modern Streetcar in planning)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1987	+(15.3) 9.5	Northeast Line	Watt/I-80 – 13 th Street	(15.3) 9.5
1987	+(14.2) 8.8	East Line	13 th Street – Butterfield	(29.5) 18.3
1998	+(3.7) 2.3	"	Butterfield – Mather Field / Mills	(33.2) 20.6
2003	+(10.2) 6.3	South Line	16 th Street – Meadowview	(43.4) 26.9
2004	+(4.5) 2.8	Folsom Line	Mather Field / Mills – Sunrise	(47.9) 29.7
2005	+(11.9) 7.4	Folsom Line	Sunrise – Historic Folsom	(59.8) 37.1
2006	+(1.1) 0.7	Amtrak / Folsom Corridor	St. Rose of Lima Park – Sacramento Valley Station	(61.0) 37.8

Under Construction, Under Design and In Planning - LRT:

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2011	+(1.8) 1.1	Green Line	H Street – 7 th & Richards / Township 9	(62.7) 38.9
-	+(6.8) 4.2	South Line Phase 2	Meadowview – Cosumnes River College	(69.5) 43.1
2017	+(19.2) 11.9	Green Line	7 th & Richards / Township 9 – Sacramento International Airport	(88.7) 55.0
Under Construction, Under Design and In Planning - Modern Streetcar:				
-	+(3.5) 2.2	Riverfront Streetcar	West Sacramento City Hall – 15 th Street	(3.5) 2.2

Notes: Folsom Line initial stage (Mather Field/ Mills – Sunrise) opened 11 June 2004. Second stage (Sunrise – Historic Folsom) opened 2005 October 15.

Amtrak / Folsom Corridor opened 2006 December 8.

Green Line also known as Downtown-Natomas-Airport (DNA) Line. Extension to Sacramento International Airport might be built in stages as determined by financial considerations.

Construction for the South Line Phase 2 is planned to start between "Spring 2011 and 2013." No projected date for completion could be found at 2011 August.

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St. Louis (LRT 1994)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1993	+(25.0) 15.5	MetroLink	5 th & Missouri – North Hanley	(25.0) 15.5
1994	+(2.4) 1.5	"	North Hanley – Lambert Airport	(27.4) 17.0
2001	+(28.1) 17.4	"	5 th & Missouri – College	(55.5) 34.4

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2003	+(5.6) 3.5	" St. Clair Extension	College – Shiloh / Scott	(61.2) 37.9
2006	+(12.3) 7.6	Cross County MetroLink	Forest Park – Shrewsbury-Lansdowne I-44	(73.5) 45.5

Note: Cross County MetroLink opened 2006 August 28.

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Salt Lake City (LRT 1999, Modern Streetcar 2013)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1999	+(24.2) 15.0	Salt Lake / Sandy Line	Arena – Sandy Civic Center	(24.2) 15.0
2001	+(4.0) 2.5	University Line	Main St & 400 South – Stadium	(28.2) 17.5
2003	+(2.4) 1.5	"	Stadium – University Medical Center	(30.6) 19.0
2008	+(1.4) 0.8	SL Intermodal Line	Central Station – Arena	(32.0) 19.8
2011	+(8.2) 5.1	West Valley Line	Central Pointe – West Valley City Center	(40.2) 24.9
2011	+(17.1) 10.6	Mid-Jordan Line	Fashion Place West – Daybreak South	(57.3) 35.5
Under Construction, Under Design and In Planning - LRT:				
by 2014	+(10) 6	Airport Line	W South Temple & N 400 West – Salt Lake International Airport	(67) 41.5
-	+(5.6) 3.5	Draper Line	Sandy Civic Center – Draper	(73) 45

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning - Modern Streetcar:				
by 2014	+(4.4) 2.7	Sugar House Streetcar	Central Pointe – Granite Blocks	(4.4) 2.7

Note: Delta Center renamed EnergySolutions Arena in 2006. Station name changed to Arena.

Extension to Central Station opened 2008 April 28.

West Valley Line and Mid-Jordan Line opened 2011 August 7.

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San Antonio (Modern Streetcar 2014)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning:				
2014	+(3.5) 2.2	Inner-City Rail Streetcar	Josephine Street – South St. Mary's Street	(3.5) 2.2

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San Diego (LRT 1981)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1981	+(25.6) 15.9	South Line	Santa Fe Depot – San Ysidro	(25.6) 15.9

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1986	+(7.1) 4.5	East Line	12 th & Imperial Transfer Station – Euclid Avenue	(32.7) 20.3
1989	+(17.9) 11.1	"	Euclid Avenue – El Cajon Transit Center	(50.6) 31.4
1990	+(2.6) 1.6	Bayside Line	Santa Fe Depot – 12 th & Imperial Transfer Station	(53.2) 33.0
1995	+(5.6) 3.5	"	El Cajon Transit Center – Santee Town Center	(58.9) 36.5
1996	+(5.3) 3.3	North Line	Santa Fe Depot – Old Town Transit Center	(64.2) 39.8
1997	+(9.8) 6.1	Mission Valley West Line	Old Town Transit Center – Mission San Diego	(74.0) 45.9
2005	+(9.4) 5.8	Mission Valley East Line	Mission San Diego – Grossmont Center	(83.4) 51.7
Under Construction, Under Design and In Planning:				
2015	+(9.4) 11	Mid-Coast Line	Old Town Transit Center – University Towne Center	(102) 63

Note: Mission Valley East Line opened 2005 July 10.

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San Francisco (HRT 1972, LRT 1917)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
HRT				
1980 System Length			(114.5 km) 71.0 mi	
1995	+(3.5) 2.5	Pittsburg / Bay Point Extension	Concord – North Concord / Martinez	(118.5) 73.5

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1996	+(2.6) 1.6	Colma Extension	Daly City – Colma	(121.1) 75.1
1996	+(7.7) 5.3	Pittsburg / Bay Point Extension	North Concord / Martinez – Pittsburg / Bay Point	(129.7) 80.4
1997	+(23.7) 14.7	Dublin / Pleasanton Extension	Bay Fair – Dublin / Pleasanton	(153.4) 95.1
2003	+(14.0) 8.7	SFO Airport Extension	Colma – San Francisco International Airport – Millbrae	(167.3) 103.7
LRT				
1980 System Length			(39.0 km) 24.2 mi	
1980	+(1.5) 0.9	M Ocean View	Broad & Plymouth – Balboa Park	(40.5) 25.1
1991	+(3.7) 2.3	J Church	Church & 30 th – Balboa Park	(44.2) 27.4
1995	* +(5.0) 3.1	F Market	17 th & Castro – Transbay Transit Terminal	"
1998	+(3.4) 2.1	N Judah	Embarcadero – 4 th & King	(47.6) 29.5
2000	+(4.0) 2.5 -(0.5) 0.3	F Market	First & Battery (Market St.) – Fisherman's Wharf (Jones Street) Loop line to Transbay Transit Terminal	(51.1) 31.7
2007	+(8.7) 5.4	Third Street Light Rail	4 th & King – Sunnydale Avenue	(59.4) 36.8
-	(0.5) 0.3	"	Sunnydale Avenue – CalTrain Bayshore Station	
Total HRT and LRT (at 2010)			(217.9 km) 135.1 mi	
Under Construction, Under Design and In Planning - HRT:				
2014	+(8.7) 5.4	Warm Springs Extension	Fremont – Warm Springs	(176.0) 109.1

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2018	+(16) 10	Berryessa Extension	Warm Springs – Berryessa	(192) 119
2025	+(10) 6	BART Silicon Valley	Berryessa – Downtown San Jose – Santa Clara	(202) 125
Under Construction, Under Design and In Planning - DMU:				
2015	+(16) 10	eBART	Pittsburg / Bay Point – Hillcrest Avenue (Antioch)	(16) 10
Under Construction, Under Design and In Planning - AGT:				
2014	+(5.2) 3.2	Oakland Airport Connector	Coliseum / Oakland Airport – Oakland International Airport	(5.2) 3.2
Under Construction, Under Design and In Planning - LRT:				
2016	+(3.1) 1.9	Central Subway	4 th & King – Washington Square	(62.4) 38.7
-	+(1.4) 0.8	F-Market	Fisherman's Wharf (Jones Street) – Fort Mason Center	(63.8) 39.5

Notes: * Full-time service restored.

HRT Track Gauge: San Francisco Bay Area Rapid Transit District: (1,676mm) 5' 6".

LRT System Length Totals:

1980 LRT system length includes (8.9-km) 5.5-mi subway from Embarcadero portal to West Portal station (incorporates (3.5-km) 2.2-mi Twin Peaks Tunnel, opened 1917), and (1.3-km) 0.8-mi Sunset Tunnel. Remainder includes (3.1 km) 1.9 mi of reserved-track alignment and (25.8 km) 16.0 mi of in-street alignment.

1980 LRT system length includes Market Street surface tracks. Not in use on weekdays from 1980 because of opening of Market Street subway and beginning of weekday Muni Metro service. Weekend Muni Metro service began 1982, Market Street surface tracks out of use thereafter. Summer-only Trolley Festival operation 1983-1987. Full-time service restored 1995.

2004 LRT system length includes (11.0 km) 6.8 mi of separated alignment, (11.0 km) 6.8 mi of reserved-track alignment and (29.2 km) 18.1 mi of in-street alignment.

Historic opening dates for in-street and reserved-track segments of LRT lines are presented below (Part 3).

The "Westside Commuter Express" suburban ("commuter") rail service is worked by DMU stock. However, the category "Lightweight DMU" is not appropriate because this stock is "compliant" with Federal Railroad Administration crashworthiness standards. This line was therefore excluded from this compilation.

See also San Jose.

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San Jose (LRT 1987)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1987	+(3.5) 2.2	Tasman West Light Rail	Old Ironsides – Tasman	(10.6) 6.6
	+(7.1) 4.4	Guadalupe Light Rail	Tasman – Younger Street *	
1988	+(3.4) 2.1	"	Civic Center – Convention Center	(14.0) 8.7
1990	+(2.6) 1.6	"	Convention Center – Tamien	(16.6) 10.3
1991	+(13.9) 8.6	"	Tamien – Santa Teresa;	(32.4) 20.1
	+(2.0) 1.2	Almaden Light Rail	Ohlone/Chynoweth – Almaden	
1999	+(0.5) 0.3	Tasman West Light Rail	Baypointe – Tasman;	(45.2) 28.0
	+(12.3) 7.6		Old Ironsides –Mountain View	
2001	+(3.1) 1.9	Tasman East Light Rail	Baypointe – I-880 / Milpitas	(48.2) 29.9
2004	+(4.7) 2.9	"	I-880 / Milpitas – Hostetter	(58.5) 36.3
	+(5.6) 3.5	Capitol Light Rail	Hostetter – Alum Rock	
2005	+(1.6) 1.0	Vasona Light Rail	Children's Discovery Museum – San Jose Diridon	(60.2) 37.3
"	+(6.9) 4.3	"	San Jose Diridon – Winchester	(67.1) 41.6

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning:				
-	+(4.2) 2.6	Capitol Expressway Light Rail to Eastridge	Alum Rock – Eastridge Transit Center	(71.3) 44.2

Notes: * Temporary terminal.

I-880 / Milpitas – Hostetter – Alum Rock segment opened 2004 June 23. Children's Discovery Museum – San Jose Diridon opened 2005 August 1. San Jose Diridon – Winchester segment opened 2005 October 1.

See also San Francisco.

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San Juan (Puerto Rico; HRT 2005)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2005	+(17.2) 10.7	Tren Urbano	Sagrado Corazón – Bayamón	(17.2) 10.7

Note: Opened 2004 December 19 for trial service, fare-free operation, Saturday and Sunday only. Weekday fare-free service added from 2005 April 19. Commercial service started on 2005 June 6.

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Seattle (LRT 2009, Modern Streetcar 2007)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
LRT				
2009 July	+(22.4) 13.9	Central Link (LRT)	Westlake – Tukwila International Boulevard	(26.6) 16.5
2009 Dec	+(2.7) 1.7	"	Tukwila International Boulevard – SeaTac / Airport	(29.4) 18.2
Modern Streetcar				
2007	+(4.2) 2.6	Seattle Streetcar, South Lake Union Line	Pacific Place – Fred Hutchinson Cancer Research Center	(4.2) 2.6
Total LRT and Modern Streetcar (at 2010)			(33.5 km) 20.8 mi	
Under Construction, Under Design and In Planning - LRT:				
2016	+(5.1) 3.1	University Link	Westlake – University of Washington	(34.4) 21.3
2020	+(6.6) 4.1	North Link	University of Washington – Northgate	(41.0) 25.4
2020-2021	+(23.4) 14.5	East Link	International District / Chinatown – Overlake	(64.4) 39.9
2012	+(3.2) 2.0	Airport Link Extension	SeaTac / Airport – South 200 th Street	(67.6) 41.9
2020-2023	+(7.7) 4.8	South Link	SeaTac / Airport – Redondo / Star Lake	(75.4) 46.7
2023	+(13.2) 8.2	North Link Lynnwood Extension	Northgate – Lynnwood	(88.6) 54.9
-	+(5.5) 3.5	East Link Redmond Extension	Overlake – Redmond	(94.3) 58.4

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
-	+(20) 12	South Link Tacoma Dome Extension	Redondo / Star Lake – Tacoma Dome	(113) 70
-	+(21) 13	North Link Everett Extension	Lynnwood – Everett	(134) 83
Under Construction, Under Design and In Planning - Modern Streetcar:				
2013	+(3.5) 2.2	First Hill Link Connector	International District / Chinatown – Capitol Hill	+(7.7) 4.8

Note: Central Link, Westlake – Tukwila / International Boulevard segment, opened 2009 July 20.

Tukwila / International Boulevard – SeaTac / Airport segment opened 2009 December 19.

Central Link LRT line incorporates Downtown Seattle Transit Tunnel, Westlake – International District / Chinatown, (2.1 km) 1.3 mi. The "DSTT" was opened 15 September 1990. It was worked by "dual-mode" buses, which used electric traction in the tunnel and diesel traction elsewhere, to 24 January 2005. Dual-mode buses were then replaced by diesel-battery ("hybrid") buses. The tunnel was closed for reconstruction from 2005 September 24 to 2007 September 24.

Seattle Streetcar, South Lake Union Line opened 2007 December 12. Previous tramway line (in Westlake Avenue North) built 1907, closed 1941.

See also Tacoma.

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Tacoma (Modern Streetcar 2003)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2003	+(2.6) 1.6	Tacoma Link	Theater District / S 9 th – Tacoma Dome	(2.6) 1.6

Note: The Tacoma Link line is worked currently by modern streetcar stock of the type used in Portland. Infrastructure was designed and built to accommodate light-rail trains.

Opened 2003 August 22. Fare-free operation.

See also Seattle.

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Tampa (Vintage Trolley 2002)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
2002	+(3.7) 2.3	TECO Line	Centennial Park – HSBC	(3.7) 2.3
2003	+(0.2) 0.1		HSBC – Dick Greco Plaza	(3.9) 2.4
2010	+(0.5) 0.3		Dick Greco Plaza – Whiting	(4.4) 2.7

Note: TECO Line Streetcar System added to this list because of passenger traffic carried (in excess of 400,000 per year, from opening).

Initial segment opened 2002 October 21. Completed to Dick Greco Plaza on 2003 January 30.

Extension Dick Greco Plaza – Whiting opened 2010 December 19.

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Tucson (Modern Streetcar 2012)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
Under Construction, Under Design and In Planning:				
2012	+(6.3) 3.9	Tucson Streetcar	Congress Street – Campbell Avenue	(6.3) 3.9

Note:

The Tucson Streetcar will incorporate the Old Pueblo Trolley, a (1.3-km) 0.8-mi heritage operation. This was opened on 1993 April 13. Of the system length, (0.8-km) 0.5-mi was built by the former tramway (streetcar) operator, Tucson Rapid Transit Company. This segment was closed with the remainder of the system on 1930 December 31, and uncovered in 1985. The remainder of the Old Pueblo Trolley line was built new. The existing single-track Old Pueblo Trolley line will be rebuilt and doubled.

A short (0.6-km) 0.3-mi Old Pueblo Trolley extension to the business center was opened on 2009 April 20.

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Washington (HRT 1976, LRT 2016, Modern Streetcar 2012)

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1980 System Length				(60.0 km) 37.2 mi
1983	+(5.3) 3.3	Yellow Line	Gallery Pl-Chinatown – Pentagon	(65.3) 40.5
"	+(8.4) 5.2	"	Reagan Washington National Airport – Huntington	(73.7) 45.7
1984	+(11.0) 6.8	Red Line	Van Ness-UDC – Grosvenor-Strathmore	(84.7) 52.5
"	+(11.1) 6.9	"	Grosvenor-Strathmore – Shady Grove	(95.8) 59.4
1986	+(14.7) 9.1	Orange Line	Ballston – Vienna / Fairfax-GMU	(110.5) 68.5
1990	+(5.2) 3.2	Red Line	Silver Spring – Wheaton	(115.6) 71.7
1991	+(2.7) 1.7	Green Line	Gallery Pl-Chinatown – U Street / African-American Civil War Memorial / Cardozo	(118.4) 73.4
"	+(6.1) 3.8	Blue Line	King Street – Van Dorn Street	(124.5) 77.2
"	+(4.7) 2.9	Green Line	L'Enfant Plaza – Anacostia	(129.2) 80.1
1993	+(12.8) 7.9	"	Fort Totten – Greenbelt	(141.9) 88.0
1997	+(5.3) 3.3	Blue Line	Van Dorn Street – Franconia-Springfield	(147.3) 91.3

Year	Segment Length (km / mi)	Line	Segment	Cumulative System Length (km / mi)
1998	+(2.3) 1.4	Red Line	Wheaton – Glenmont	(151.1) 93.7
1999	+(4.7) 2.9	Green Line	U Street / African-American Civil War Memorial / Cardozo – Fort Totten	(155.8) 96.6
2001	+(10.5) 6.5	"	Anacostia – Branch Avenue	(166.3) 103.1
2004	+(5.0) 3.1	Blue Line	Addison Road- Seat Pleasant – Largo Town Center	(171.6) 106.4
Under Construction, Under Design and In Planning - HRT:				
2013	+(18.9) 11.7	Dulles Corridor	East Falls Church – Wiehle Avenue (Reston)	(190.5) 118.1
2016	+(18.5) 11.5	"	Wiehle Avenue (Reston) – Dulles International Airport – Route 722	(209.9) 129.6
Under Construction, Under Design and In Planning - LRT:				
2016	+(26) 16	Purple Line	Bethesda – Silver Spring – College Park – New Carrollton	(26) 16
Under Construction, Under Design and In Planning - Modern Streetcar:				
2012	+(1.2) 0.7	DC Streetcar	Anacostia (Metrorail station) – Naval Annex	(1.2) 0.7
2012	+(3) 2	"	Union Station – Oklahoma Avenue	(5) 3
2016	+(8) 5	Columbia Pike Streetcar	Pentagon City – Bailey's Crossroads / Skyline	(13) 8

Note: Addison Road – Seat Pleasant – Largo Town Center opened 2004 December 18.

The Dulles Corridor line is known officially as the Dulles Corridor Metrorail Project

DC Streetcar: Opening of the Anacostia Initial Line Segment (Anacostia Metrorail station – Naval Annex) and H Street / Benning Road segment (Union Station – Oklahoma Avenue) planned for 2012 March. (60-km) 37-mi system planned for construction in three phases.

3.) Appendix: Historic Opening Years (scroll down):

Boston
Cleveland
Philadelphia
Pittsburgh
San Francisco

The following information for surface tramway ("streetcar" or "trolley") lines is presented to complement similar data for separated HRT and LRT lines presented by Pushkarev et al. (1982).

Boston

Ashmont-Mattapan (Red Line; also known as "Mattapan High Speed Trolley Line"), (3.5 km) 2.2 mi: Dorchester and Milton Branch Railroad opened 1847. To Old Colony Railroad Company in 1886, to New York, New Haven & Hartford Railroad Company in 1893. Closed 1926. "High Speed Trolley Line" opened 1929.

Green Line branches (Clarke and Cummings 1997).

A-Watertown (now closed): Commonwealth Avenue & Brighton Avenue – Union Square, Allston, opened 1896.

Union Square, Allston – Oak Square, Brighton opened 1858; horse traction. Electrified 1889.

Oak Square, Brighton – Newton Corner opened 1896. Newton Corner – Watertown Square opened 1900. Routed into subway by 1912. Operation suspended 1969; closure made permanent 1994.

B-Boston College: Segment to Chestnut Hill Avenue opened 1900. Chestnut Hill Avenue – Lake Street (Boston College) opened 1896.

C-Cleveland Circle: Segment to Coolidge Corner (Harvard Street) opened 1888, horse traction. Extended to Cleveland Circle 1889. Electrified 1889. Routed into subway from 1897.

D-Riverside: Brookline Branch of Boston & Worcester Railroad Company opened 1847 between a point near today's Kenmore Square station and today's Brookline Village station. Charles River Branch Railroad opened 1852 between Brookline Village and today's Newton Highlands station.

Newton. Owned by Boston & Albany Railroad Company from 1882, Newton Highlands – Riverside opened 1886. Known as "Highland Circuit," and later as "Highland Branch," of the B&A RR Co (New York Central System). Closed 1958. Rebuilt; reopened as LRT from 1959.

E-Arborway: Segment to Huntington Avenue & Tremont Street opened ca. 1883; horse traction. Electrified 1894.

Huntington Avenue, Tremont Street – South Huntington Avenue, opened 1859; horse traction. Electrified 1894. South Huntington Avenue, Huntington Avenue – Centre Street, opened 1906.

Centre and South Streets, Huntington Avenue – McBride Street (Jamaica Plain Carhouse), opened 1857; horse traction. Electrified 1891. Jamaica Plain Carhouse – Forest Hills opened 1902. Routed into subway from 1903.

Operation suspended, Brigham Circle – Arborway, 1985. Restored, Brigham Circle – Heath Street, 1989. Restoration of Heath Street – Arborway ordered in 2001 by Executive Office of Environmental Affairs, Commonwealth of Massachusetts.

Cleveland

Blue and Green lines (Toman 1990):

Tower City – East 34th -Campus, (2.4 km) 1.5 mi, opened 1930.

East 34th-Campus – Shaker Square, (7.3 km) 4.5 mi, opened 1920.

Green Line:

Shaker Square – Coventry, (0.5 km) 0.3 mi, opened 1920.

Coventry – Fontenay Road, (2.6 km) 1.6 mi, opened 1913.

Fontenay Road – Courtland, (0.8 km) 0.5 mi, opened 1920.

Courtland – Warrensville, (0.6 km) 0.4 mi, opened 1928.

Warrensville – Green, (1.6 km) 1.0 mi, opened 1936.

Blue Line:

Shaker Square – Lynnfield, (4.4 km) 2.7 mi, opened 1920.

Lynnfield – Warrensville, (1.0 km) 0.6 mi, opened 1930.

Philadelphia

Surface Tramway ("Trolley") Lines (Cox 1982): *All surface tramway lines operated currently by motorbus, except for Route 15:*

6-Ogontz Avenue. Opened 1905. Closed 1986, together with (2.9 km) 1.8 mi of depot access track in Old York Road.

15-Girard Avenue. Girard Avenue, 2nd Street – 31st Street, opened 1859, horse traction. Palmer Street – 2nd Street opened 1866. Norris Street – Palmer Street opened 1875. Electrified; 31st Street – 60th Street opened 1900. 60th Street – 63rd Street and Allegheny Avenue – Norris Street opened 1903.

Operation suspended 1992. Reopening scheduled for 2004 June 13; postponed "indefinitely" because of a political dispute (over on-street parking for private autos at the west end of the line). The operator announced at 2005 June that reopening would take place by 2005 September. A subsequent announcement, at 2005 August, stated that the reopening would take place on 2005 September 4; this was carried out as planned. Segment Length (above) includes (0.2 km) 0.1 mi shared with subway-surface route 10.

23-Germantown Avenue – 11th & 12th Streets. 11th Street, Wharton Street – Colona Street (one block north of Susquehanna Avenue), and Germantown Avenue, 11th Street – Church Lane (two blocks east of Cheltenham Avenue), opened 1858, horse traction. Electrified, Church Lane – Bethlehem Pike (Chestnut Hill) opened 1894. 12th Street segment opened 1897.

Operation suspended 1992. Weekend-only service over north extremity of line (Germantown Depot – Bethlehem Pike) to 1996.

New (0.2-km) 0.1-mi track segment in Noble Street built 1994 for "Welcome Line" loop service in the Philadelphia business center ("Center City"). Regular "Welcome Line" service operated from summer 1995 to 1995 December. "Holiday Trolley" operation during winter holiday season (Thanksgiving - Christmas), 1996 - 2000.

50 Lawndale – 4th & 5th Streets. 5th and 6th streets, Berks Street – Jackson Street, opened 1858, horse traction. Electrified 1894. Remainder opened 1896.

Operation suspended 1980, closure made permanent 1986. Segment Length (above) includes peak-period northern extension from Olney loop to Knorr loop, (3.1 km) 1.9 mi and alternate peak-period south terminal at 4th Street and Ritner Street, (0.5 km) 0.3 mi.

53-Wayne Avenue-Erie Avenue. Wayne Avenue, Pulaski Street – Mannheim Street, horse traction, 1859 - 1860 or 1861. Steam traction, 1862; service ended by 1863. 13th Street & Erie Avenue – Wayne Avenue & Washington Lane opened 1894. Wayne Avenue, Washington Lane – Carpenter Lane, opened 1904.

Operation suspended 1985, closure made permanent 1989. Segment Length (above) includes (0.8 km) 0.5 mi shared by Route 15.

56-Erie Avenue – Torresdale Avenue. Torresdale Avenue, Margaret Street – Cottman Avenue, opened 1903. Erie Avenue opened 1905. Connected 1928. Operation suspended 1991; some segments of track paved over subsequently. A report current at 2004 October stated that all track was paved over and overhead wires removed, but closure had not been made permanent.

60-Allegheny Avenue. Opened 1906; Allegheny Avenue, 17th Street – 23rd Street, opened 1923.

Operation suspended 1977, closure made permanent 1983. Segment Length (above) includes (0.2 km) 0.1 mi shared with route 15.

Subway-Surface Tramway ("Trolley") Lines: Segment Lengths, and Historic Opening Years (from Cox 1985):

10-Overbrook – Center City (Lancaster Avenue – Subway): (9.5 km) 5.9 mi.

Lancaster Avenue, Haverford Avenue – 52nd Street, opened 1859, horse traction. Electrified 1894. Subway-surface line from 1908. Lancaster Avenue & 52nd Street – 63rd Street & Malvern Avenue opened 1926.

11-Darby – Center City (Woodland Avenue – Subway): (10.8 km) 6.7 mi.

Opened 1859, horse traction. Electrified 1894. Subway-surface line from 1906.

13-Yeadon and Darby – Center City (Chester Avenue – Subway):

(11.3 km) 7.0 mi. Includes peak-period extension, Yeadon Loop – Darby Loop, (1.5 km) 0.9 mi.

Chester Avenue, Woodland Avenue – 49th Street, opened 1895. Woodland Avenue & 49th Street – Kingsessing Avenue & 65th Street opened 1905. Kingsessing Avenue & 65th Street – Darby opened 1902-1907. Subway-surface line from 1956.

34-Angora – Center City (Baltimore Avenue – Subway): (7.9 km) 4.9 mi. Opened 1908 as subway-surface line.

36-Eastwick – Center City (Elmwood Avenue – Subway): (11.8 km) 7.3 mi. Opened 1900. Subway-surface line from 1908.

Subway-Surface Division Segment Lengths, Less Duplications:

(4.0 km) 2.5-mile of separated alignment (Subway, Juniper Street – 40th & Woodland Avenue Portal), route 10 uses (3.2 km) 2.0 mi to 36th & Market Street portal.

(1.6 km) 1.0 mi of reserved-track alignment (Route 36, Elmwood Avenue Loop – 80th & Eastwick Avenue Loop).

(27.9 km) 16.3 mi of in-street alignment. Subway-surface division also has (2.4 km) 1.5 mi of track used during Monday early am ("owl service") hours when the subway is closed.

Suburban Tramway ("Trolley") Lines (DeGraw 1985):

Sharon Hill Line:

69th St Terminal – Baltimore Pike (Clifton), (5.3 km) 3.3 mi, opened 1906.

Baltimore Pike (Clifton) – Clifton-Aldan, (0.8 km) 0.5 mi, opened 1907.

Clifton-Aldan – Providence Road, (0.3 km) 0.2 mi, opened 1907.

Providence Road – Collingdale, (1.6 km) 1.0 mi, opened 1907.

Collingdale – Sharon Hill, (0.5 km) 0.3 mi, opened 1917.

Media Line:

Drexel Hill Junction (Shadeland Ave) – Orange Street, (10.5 km) 6.5 mi, opened 1913.

Pittsburgh

The Pittsburgh LRT system incorporates many segments built prior to opening of the downtown subway on 1985 July 7, and opening of "LRT" service (worked by new light rail vehicles) on 1987 May 23. Summary:

Pittsburgh Business Center:

The segment between Penn Station, Steel Plaza and Station Square, (2.3 km) 1.4 mi, incorporates former railway formations, including the Panhandle Tunnel. The underground segment between Gateway and Steel Plaza (0.8 km) 0.5 mi was built new. Details:

--Pittsburgh horse tramway ("horsecar") service opened 1859; first electric tramway ("trolley") line opened 1888. Last in-street alignments used by tramway services, primarily in Wood Street, Smithfield Street, Grant Street and Liberty Avenue, closed 1985.

--Panhandle Tunnel opened 1863. Built by Pittsburgh & Steubenville Extension Railroad Co., later absorbed by Pennsylvania Railroad Company (PRR). Freight service withdrawn by Consolidated Rail Corporation ("Conrail") in 1980. Rebuilt 1983-1985 for LRT use. Reopened 1985.

Original length (0.3 km) 0.2 mi; length following extensions and reconstruction, (0.4 km) 0.3 mi.

Monongahela River Crossing:

Smithfield Street Bridge used by tramway services until 1985; LRT services use a former railway bridge (Panhandle Bridge, below). Details:

--Smithfield Street Bridge, (*0.4 km*) 0.2 mi opened 1883 with rails for horse trams in deck. Enlarged 1889 (east or "upstream" side); upstream side widened to provide reserved-track alignment for streetcars in 1911. Closed to tramcars 1985; tracks removed. Former tramcar reservation opened as a single lane for road traffic following 1994-1995 rehabilitation.

--Panhandle Bridge, (*0.4 km*) 0.2 mi 1903. Built by Pittsburgh & Steubenville Railroad Co., later absorbed by PRR. Freight service withdrawn by Conrail in 1980. LRT use from 1985.

Under, and Over, Mt. Washington:

--Mt. Washington Transit Tunnel, (*1.1 km*) 0.7 mi opened 1904. Opened to joint operation by buses and tramcars following 1974-1975 reconstruction. Renovated 1993. (The tunnel has a gradient of 6 percent, or 1 in 17, ascending from the Monongahela River valley.)

--Route 49 Arlington-Warrington, (*4.0 km*) 2.5 mi, created in 1971 from portions of former 47 Knoxville (48 Arlington) and 49 Beltzhoover tramway lines. Used as bypass route during reconstruction of Mt. Washington tunnel in 1974-1975.

Operation suspended 1982-1985 to permit reconstruction (of Carson Street segment). Used as bypass in 1985 during construction to connect Mt. Washington Tunnel and new ramp to Panhandle Bridge. Reopened thereafter (in 1985) as route 52-Allentown.

Operation suspended 1986 because track in New Arlington Avenue was declared unsafe. Rebuilt with double track throughout, except at the ramp to the Panhandle LRT bridge; Conrail refused to permit construction of a ramp sufficiently wide to carry two tracks over its railway line. Restored 1993; again used as bypass during renovation of Mt. Washington tunnel (1993); operation of 52-Allentown service suspended during tunnel renovation.

South Hills Junction to Castle Shannon via Dormont:

--South Hills Junction – Dormont, (*5.5 km*) 3.4 mi, opened 1904; eventually became route 42-Dormont.

--Dormont – Mount Lebanon, (*1.0 km*) 0.6 mi, and Mount Lebanon – Castle Shannon, (*2.3 km*) 1.4 mi opened 1903. Dormont – Mount Lebanon eventually became route 38-Mount Lebanon, and Mount Lebanon – Castle Shannon eventually became route 38A Mount Lebanon Extension. Route 42/38 established 1963, because of closure of route 38-Mount Lebanon between South Hills Junction and Dormont.

Operation suspended for reconstruction 1984-1987.

--Mount Lebanon Transit Tunnels, Dormont Junction – Shady Drive, (1.0 km) 0.6 mi, opened 1987.

South Hills Junction to Castle Shannon via Overbrook:

--Narrow-gauge mining railway built southward from vicinity of today's South Hills Junction from early 1860s. South Hills Junction – Overbrook – Castle Shannon opened 1871 by Pittsburgh & Castle Shannon Railroad Co. Passenger service opened 1874. Line leased to Pittsburgh Railways Co. in 1905. Electrified, third running rail installed 1908 to permit operation of (1,588 mm) 5' 2½" gauge interurban cars. Beginning of service to Pittsburgh business center delayed to 1909 because of dispute between company and the municipal authority. Narrow-gauge freight service (coal trains) operated during night hours after 1909, and was withdrawn in 1912. Operation suspended 1993 because of landslides and poor condition of bridges; restored 2004 following reconstruction. (8.9 km) 5.5 mi.

Library Branch:

Castle Shannon – Library, (9.0 km) 5.6 mi, opened 1903. Operation suspended 1982-1984 because of reconstruction of Castle Shannon – Washington Junction (– Dorchester) segment. Operation suspended for two months in 1988 for rehabilitation to permit light rail vehicles to serve Library.

Drake and South Hills Village Branches:

--Washington Junction – Dorchester – Drake line, (4.4 km) 2.7 mi opened 1909. Operation suspended from 1982 during reconstruction of Washington Junction – Dorchester segment, (2.3 km) 1.4 mi.

--Washington Junction – Dorchester segment reopened, and new Dorchester – South Hills Village branch opened, in 1984.

--Dorchester – Drake segment reopened 1986. Operation suspended 1999 because remaining PCC-type cars had become life-expired. Reconstruction and reopening pending availability of funds.

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San Francisco

(Hilton 1971 and Perles et al. 1981)

Market Street, Third Street – Valencia Street, opened 1860, steam traction. Extended to waterfront 1863. Horse traction from 1868. Cable traction, Ferry Building – Valencia Street, 1883. Valencia Street – Castro Street opened 1886. Operation with cable traction ended 18 April 1906 because of earthquake damage. Service restored 6 May 1906, using electric traction.

J-Church line opened 1917.

K-Ingleside line opened 1918 via Twin Peaks Tunnel to St. Francis Circle. Completed 1919; incorporated existing line opened 1895-1896.

L-Taraval line opened 1919; incorporated existing line (opened ca. 1907), 20th Avenue – 33rd Avenue. Extended to Taraval Street & 48th Avenue 1923. Extended to Zoo 1937.

M-Ocean View line opened 1925. Replaced by motorbus 1939, rail service restored 1944.

N-Judah line opened 1928.

T-Third: Introductory service, weekends only, fare-free, started 2007 January 13. Full-time service opened 2007 April 7.

Construction of segment between Sunnydale Avenue and CalTrain Bayshore Station deferred.

Previous tramway line opened 1867 to Carroll Avenue, extended thereafter to Jamestown Avenue. Electrified 1895 to Palou Avenue, extended thereafter to Jamestown Avenue and southward to the county line (a short distance south of Sunnydale Avenue).

Sunday service replaced by bus from June 1940. Line closed 1941 September 12. Track removed south of Mariposa Avenue because of road widening. Peak-period service restored 1943 May 15 (?) to serve Bethlehem Steel Shipyard. This operated from Townsend Street, southward in Third Street to Mariposa Avenue, westward on temporary track, then southward in Illinois Street to 19th Avenue. Illinois Street had a railway goods (freight) line (Atchison, Topeka and Santa Fe Railway), and this was electrified temporarily. Tramway service withdrawn 1946 October 7.

4.) Acknowledgments

The authors express sincere appreciation to the following persons who provided information and feedback during preparation of this tabulation: Maurice M. Carter, Darrell Clarke, Roger Christensen, Allen Drake, William Lieberman, Charles J. Lietwiler, Thomas G. Matoff, Frank S. Miklos, Russell Olson, Edson L. Tennyson, P.E., David Warren and Julian Wolinsky. Van Wilkins reviewed the initial draft of this tabulation and kindly provided extensive commentary and feedback.

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6.) Document History

Original Posting 2004 March 30.

Revised 2004 June 6.

Revised 2004 August 23.

Revised 2004 October 6.

Revised 2004 December 20.

Revised 2005 March 28.

Revised 2005 June 22.

Revised 2005 August 23.

Revised 2005 October 18.

Revised 2006 May 19.

Revised, links checked 2007 April 15.

Revised 2007 August 16.

Revised 2007 November 25.

Revised 2008 February 5.

Revised, Chicago table corrected, "Passenger Traffic Statistics" separated, 2009 January 20.

Revised, selected segments opened or closed prior to 1980 added, 2009 July 20.

Revised, lines "under construction, under design and in planning" added, Appendix 1 deleted, Appendix 2 renumbered, Raleigh-Durham deleted, links checked, 2010 October 25.

Revised 2011 March 17.

Revised 2011 August 30.