



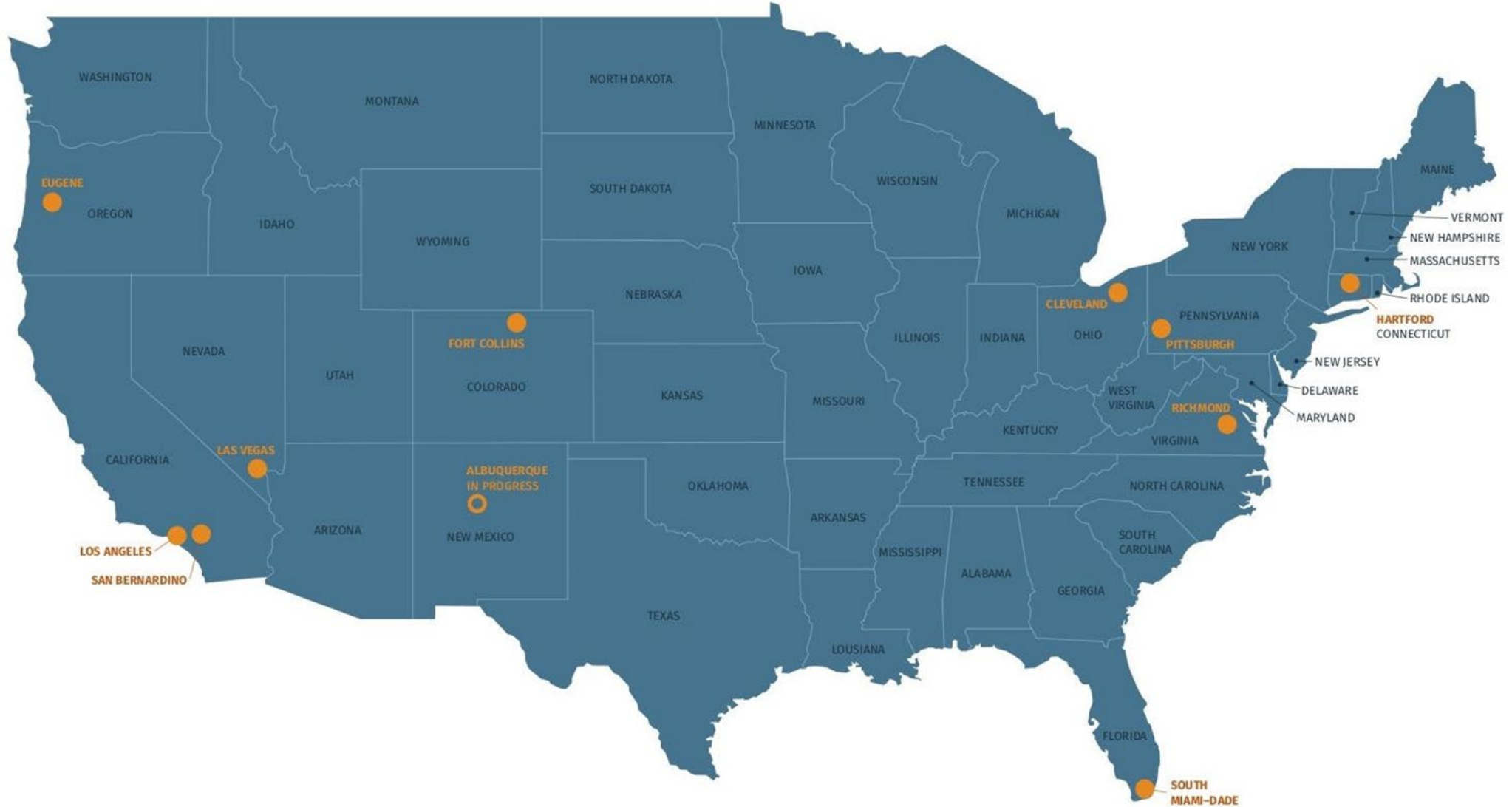
Getting to BRT

Implementation Guide for U.S. Cities

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July 31, 2019

10 cities, 12 corridors



What is BRT?

Defining BRT



**Dedicated bus lanes
at least 1.9 miles long**

[The BRT Standard online](#)

5 BRT Basics

- 1. Dedicated right-of-way**
- 2. Busway alignment**
- 3. Intersection treatments**
- 4. Platform-level boarding**
- 5. Off-board fare collection**

US BRT corridors

Albuquerque Rapid Transit (ART)*

Cleveland, HealthLine

Eugene, EmX, Green Line

Fort Collins, MAX**

Hartford, CTfastrak

LA Metro, Orange Line

Las Vegas, Strip & Downtown Express (SDX)

Pittsburgh, MLK Jr. East, South & West Busways

Richmond, The Pulse

San Bernardino, sbX

South Miami-Dade Busway**

*Only ART's design, was certified, not its operations.

**Fort Collins and South Miami-Dade have not been officially certified by the *BRT Standard* Technical Committee but are included here as at least basic BRT based on ITDP's assessment.

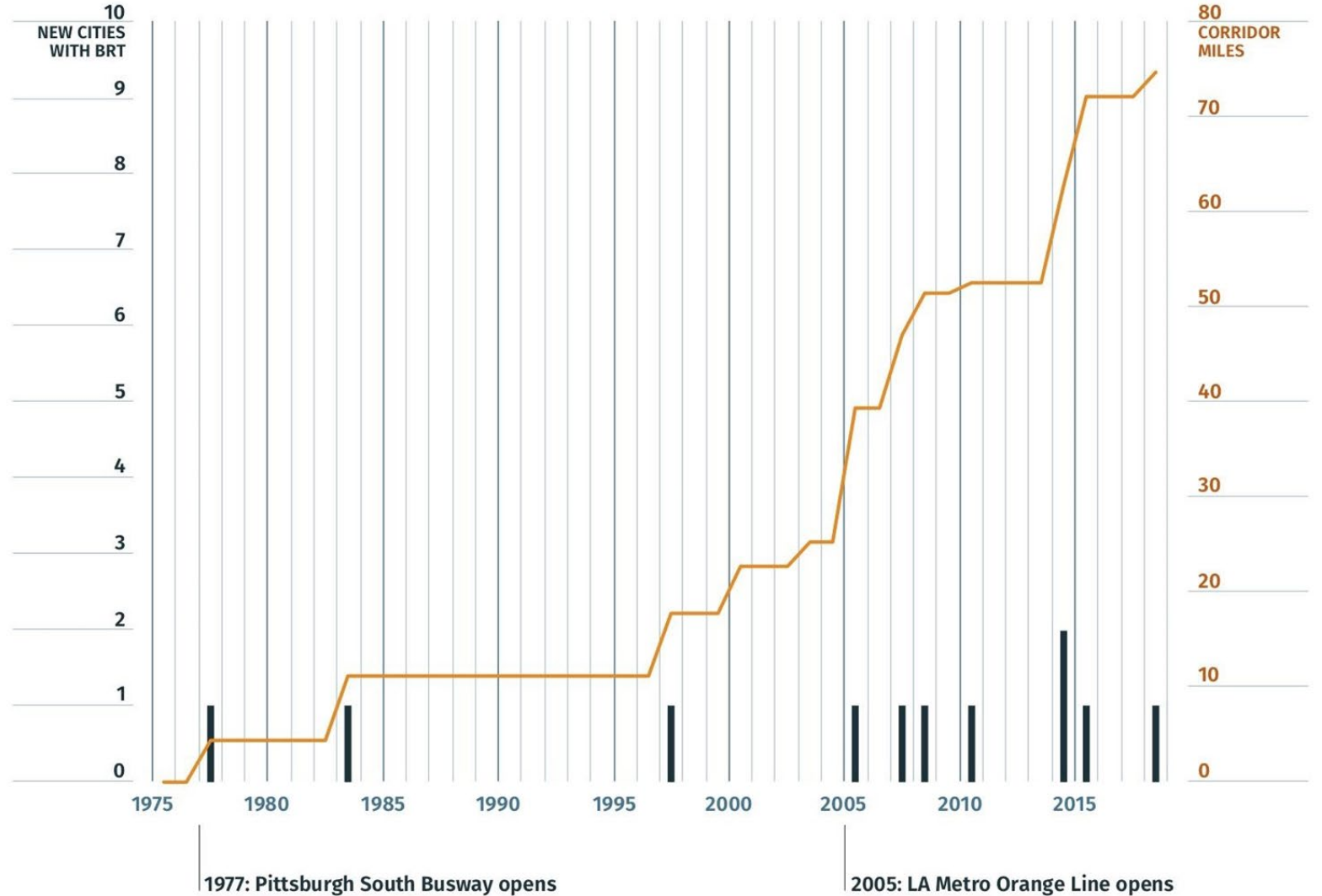
U.S. BRT expansion

Steady growth over 4 decades

**12 corridors
73 miles**

1977 - 1997: 2 cities added 3 corridors

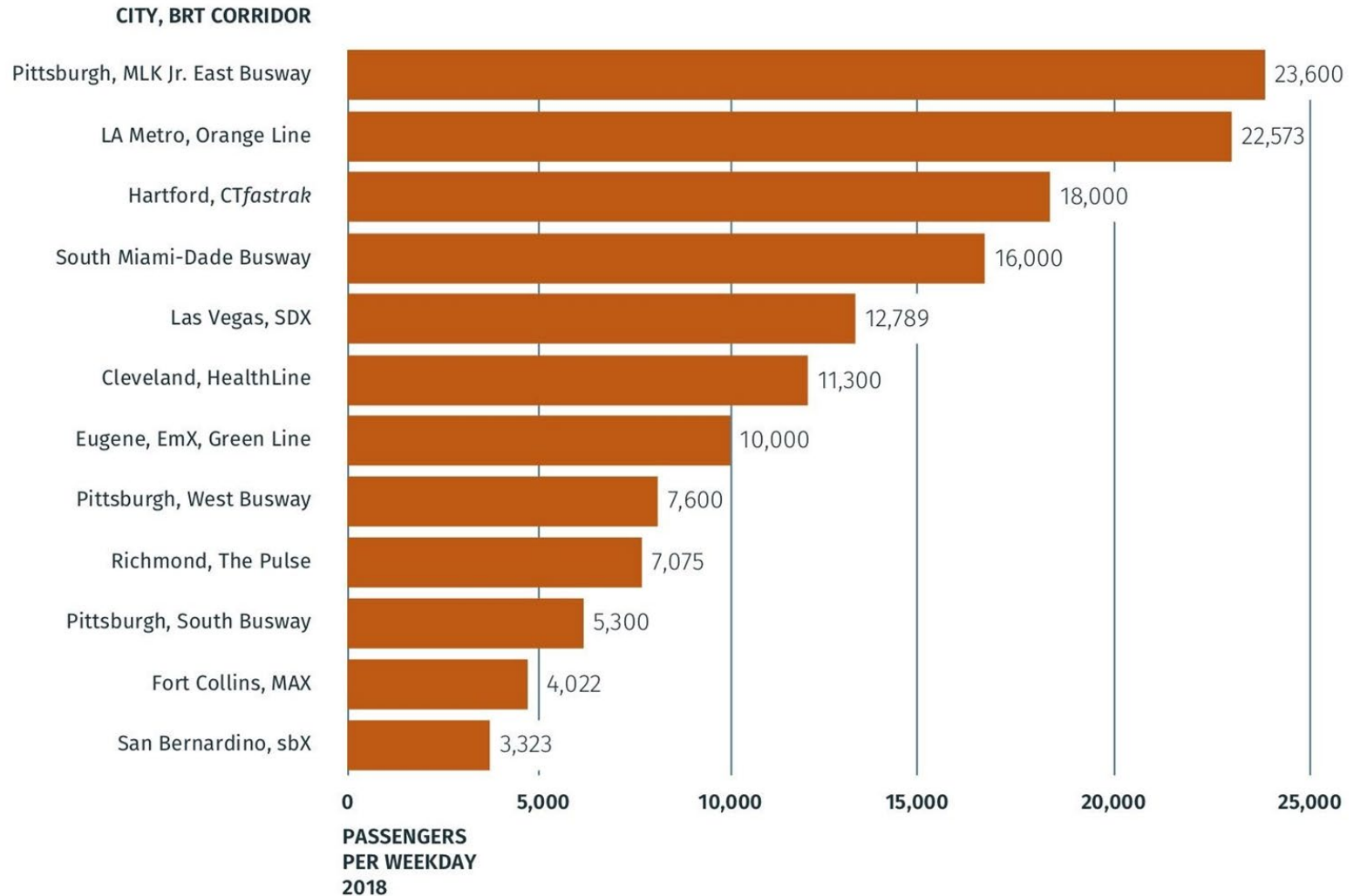
1998 - 2018: 8 new cities & 9 new corridors



12 U.S. BRT corridors

More than
142,000
passengers each
weekday

Ridership data is for the entire BRT route, not just the BRT-rated corridor section.



Notes: Ridership is for whole corridor, not just the BRT-rated segment. Sources: Cleveland (Schmitt 2018b); Eugene 2013 data (BRT+ Centre of Excellence & WRI 2019); Fort Collins (Coltrain 2019); Hartford 2019 data (CTDOT 2019); Las Vegas (RTCSNV 2019); Los Angeles (Metro 2019); Pittsburgh (Deto 2019); Richmond 2019 data (GRTC 2019d); San Bernardino 2017 data (Omnitrans 2018); South Miami-Dade 2016 data (Miami-Dade County DTPW 2018).

Why write this guide?

**Help cities get to high-
quality BRT**

How 3 cities implemented BRT

Hartford, CT *fastrak*

Richmond, Pulse

Albuquerque, ART*

* ART construction is complete and launch of operations is pending arrival of new fleet

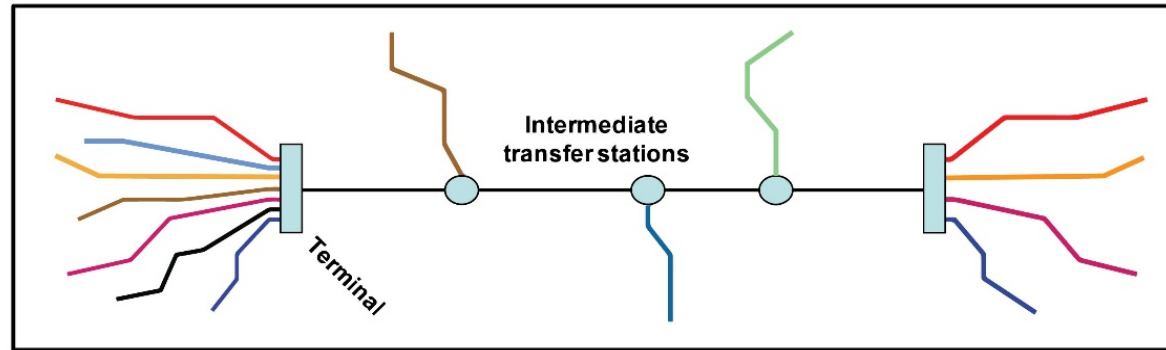
Hartford's CTfastrak



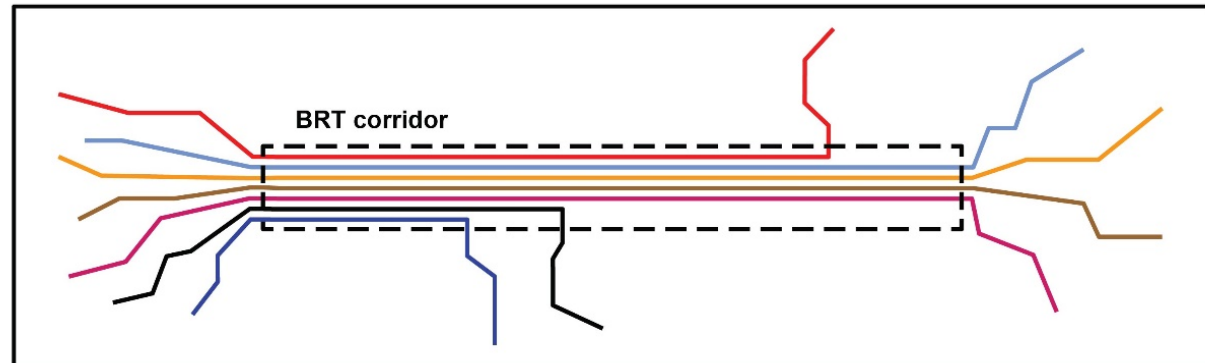
Hartford's CTfastrak

9.4-mile
busway

Direct service
model



Trunk-and-feeder services



Direct services

Hartford's CTfastrak

From
abandoned
rail corridor to
regional BRT



Source: CTDOT

Trend: Converting rail corridors

7 US BRT
corridors are
former rail
rights-of-way

Use Keywords

CTfastrak Parkville Station
situated adjacent to the
active Amtrak right-of-way



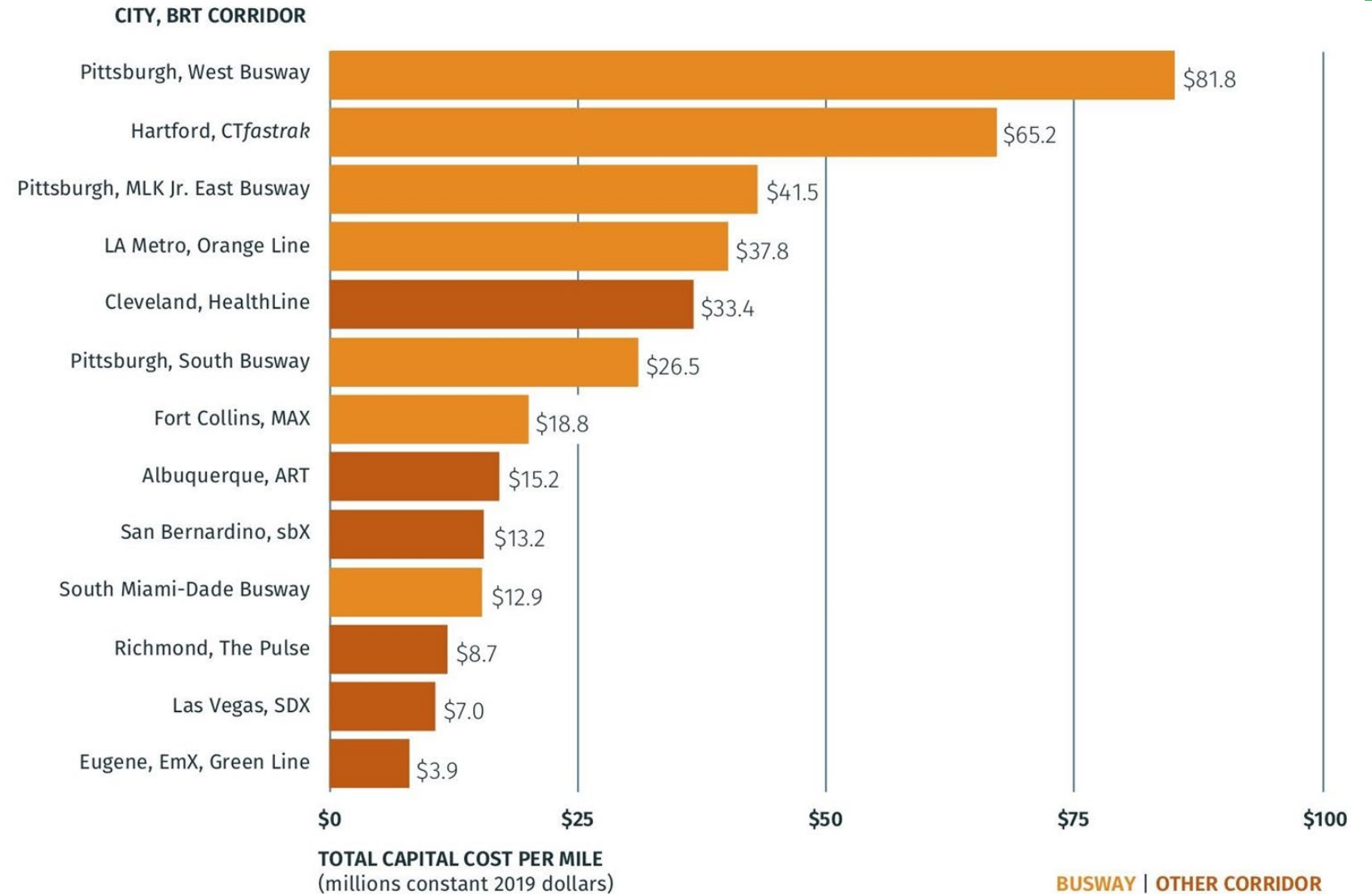
Source: CTDOT

Capital costs

\$4 to \$82 million per mile to implement BRT

Busways along rail rights-of-way have higher costs.

Right-of-way acquisition
Extensive civil engineering



Notes: Capital costs include fleet. Costs were converted to 2019 dollars assuming launch year as year of expenditure. Total length of the constructed corridor is used which may underestimate the cost per mile of the BRT-rated segment. *Sources:* Cleveland (RTA 2018); Eugene (Thole et al. 2009); Fort Collins (Transfort 2019b); Hartford (Frisman 2012); Las Vegas (BRT+ Centre of Excellence & WRI 2019); Los Angeles costs exclude 2012 extension, and include an estimated \$73 million (1991 USD) for prior right-of-way acquisition (Flynn et al. 2011, Perry 2017); Pittsburgh South Busway costs exclude right-of-way acquisition

Richmond's Pulse



Greater
Richmond's
first rapid
transit

2.6-mile BRT
corridor



Source: GRTC

Preserve
efficient
boarding

Decriminalize
fare evasion



Albuquerque Rapid Transit (ART)



Transforming Route 66

9-mile Central Avenue corridor



Source: Samat Jain via Flickr

Trend: Bi-directional BRT lanes

One lane used
one direction at a
time

Bi-directional BRT
lanes:
ART
EmX Green Line
Fort Collins MAX



Trend: electric BRT buses



Trend: electric BRT buses



3 steps towards BRT

- 1. Set the table**
- 2. Arrange funding**
- 3. Cultivate support**

1. Set the table

Invite all
necessary
parties to the
table

Corridors
through multiple
jurisdictions, rail
rights-of-way
require more
coordination



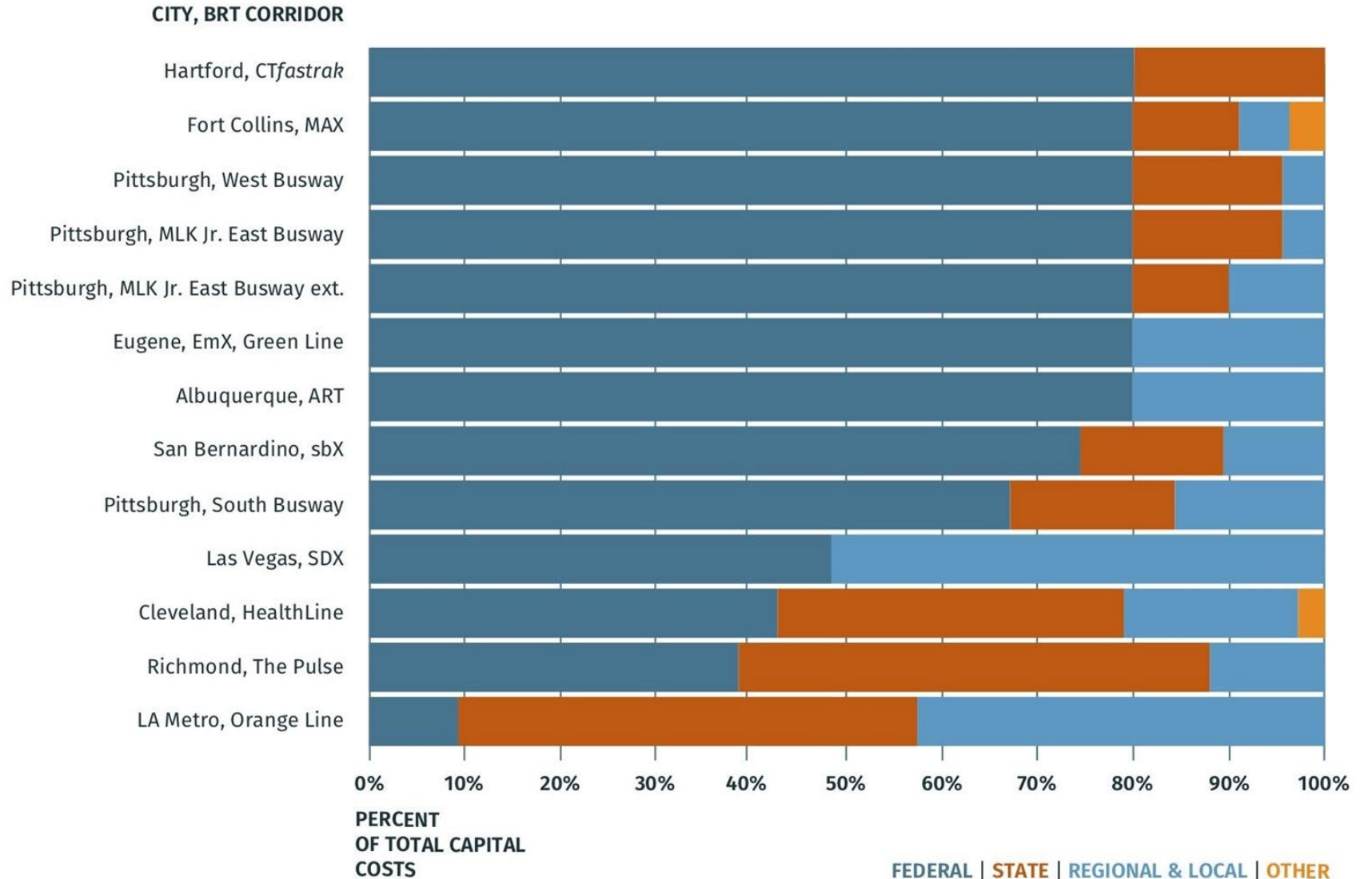
Source: GRTC via Twitter

2. Arrange funding

60% of U.S. BRT capital cost funded with federal \$

Diverse state & local sources

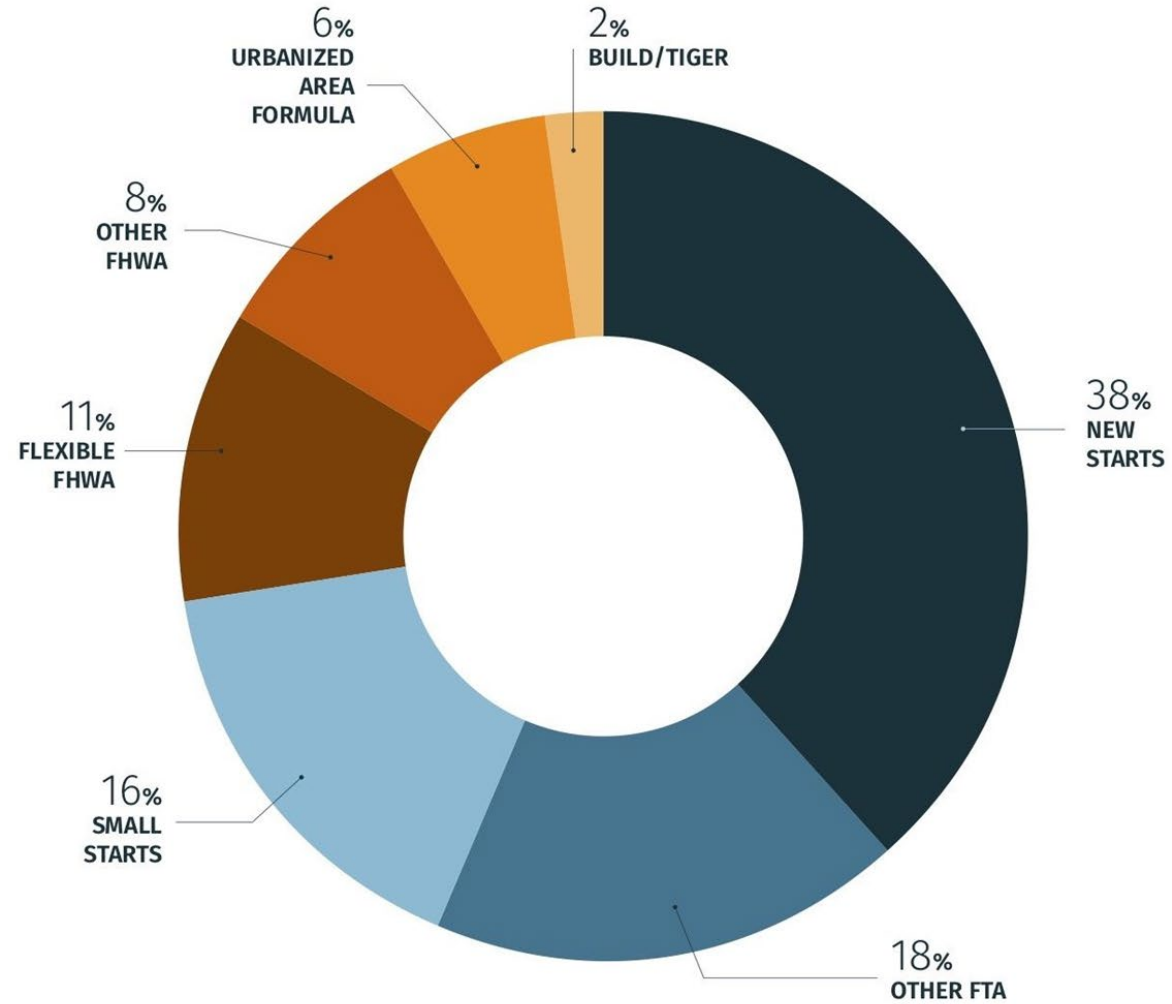
South-Miami Dade Busway funding data unavailable.



2. Arrange funding

5 - New Starts
 3 - Small Starts
 1 - BUILD / TIGER

South-Miami Dade Busway
 funding data unavailable.



Notes: Funding data for South-Miami Dade Busway unavailable. Sources: Albuquerque (FTA 2019a); Cleveland (Callaghan 2007b, GCRTA 2018); Eugene-Springfield (Callaghan 2007b, Thole et al. 2009); Fort Collins (Pohl 2014); Hartford (Callaghan 2007b, FTA 2015); Las Vegas (Callaghan 2007b); Los Angeles (Callaghan 2007b, Flynn et al. 2011); Pittsburgh (Callaghan 2007b, National Academies of Sciences, Engineering, and Medicine 2003a.); Richmond (GRTC 2015); San Bernardino (Nisperos 2014, Omnitrans 2018, Perry 2017, Starcic 2015).

3. Cultivate support

Anticipate
common
concerns:

Stop
consolidation

Parking changes

Construction
impacts



Source: GRTC

3. Cultivate support

Walk the
corridor

Engage diverse
stakeholders

Lean on
advocates

Emphasize uses
for the BRT



Source: RVATransit via Twitter

Projects to watch



*We're going to improve
your commute on Van Ness*

SFMTA.com/VanNess

Source: Aileen Carrigan

Bus corridor
projects in
development

Albuquerque launch
Indianapolis' Red Line
San Francisco's Van Ness Blvd
East Bay's International Blvd
Denver's East Colfax Avenue

Thank you!

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