

### **Executive Summary**





RTD bus journeys can be made faster with safer and easier transfer experiences in Downtown via a series of inexpensive and highly-marketable routing adjustments to form transit 'Trunks'

'Trunks' combine routes together to create ultra-high frequency service over a common stretch of street

24 RTD bus routes outlined in RTD's System
Optimization Plan should have their Downtown "last
miles" aligned between DUS and Civic Center

The high frequency 'Trunks' can be further enhanced by investment in block-long bus stops to make transfers safer, easier and quicker

## **Community Outreach**



GDT's Downtown Bus Plan has been shared with a robust swath of Denver's advocacy and civic communities who have provided essential feedback to shape our proposal:



**Colorado Cross-Disability Coalition** 



**Downtown Denver Partnership** 



**CoPIRG** 



Denver Inter-Neighborhood Cooperation



**CU Denver's Urban Planning Department** 



Denver University's Urban Planning Department



**Denver Streets Partnership** 



**RTD Board of Directors** 



**Denver Bicycle Lobby** 



**YIMBY Denver** 

## Framing: Transfers, Ridership, and Growth



Transit journeys often require a transfer, but ridership plummets on journeys that require 2 or more transfers

No difference in rider satisfaction on trips with 0 vs. 1 convenient transfer, but satisfaction declines by 32% with 2+ transfers

Adding a transfer reduces demand for transit between 10% - 40% depending on the quality of the transfer itself

Growing ridership requires modernizing the RTD network with 2-leg journeys (single transfers) wherever possible

#### **Problem #1: Excessive Transfers**

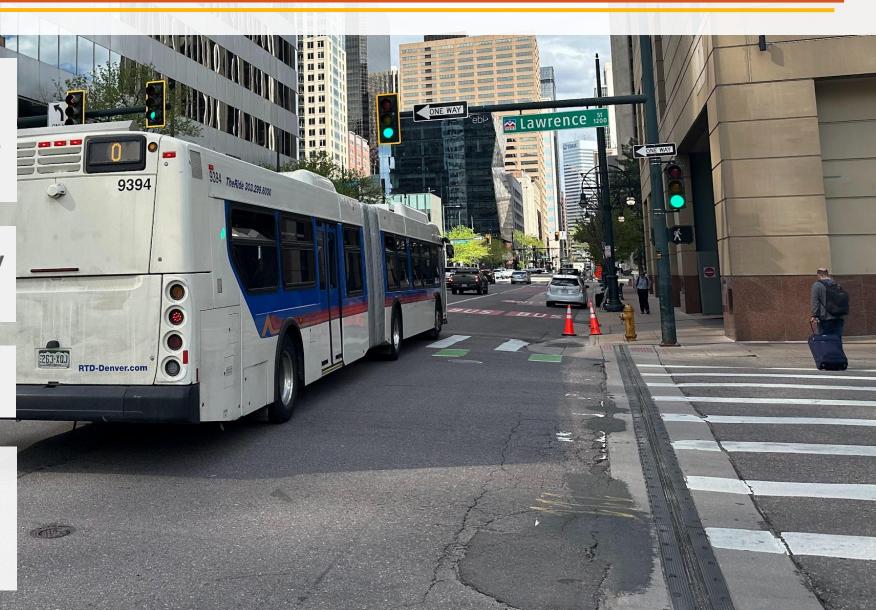


Most hypothetical trips on RTD require a transfer, but Transit App data tells us RTD riders are not confident transferring

Only 16% of RTD journeys today involve 1+ transfers

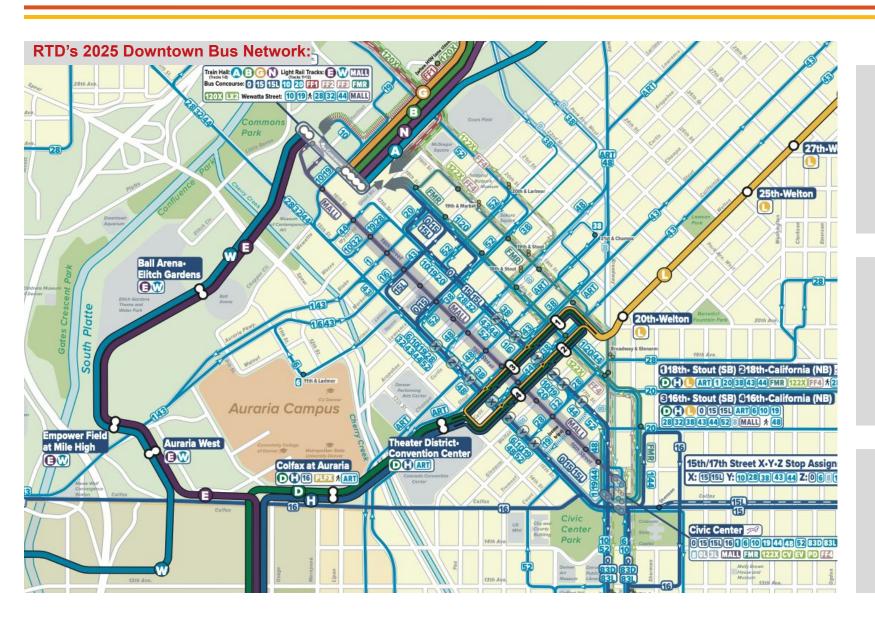
Only 3% of RTD journeys today involve 2+ transfers

Removing double transfers in Downtown Denver should be adopted as a first step towards higher ridership



## **Problem #2: Network Complexity / Literacy**





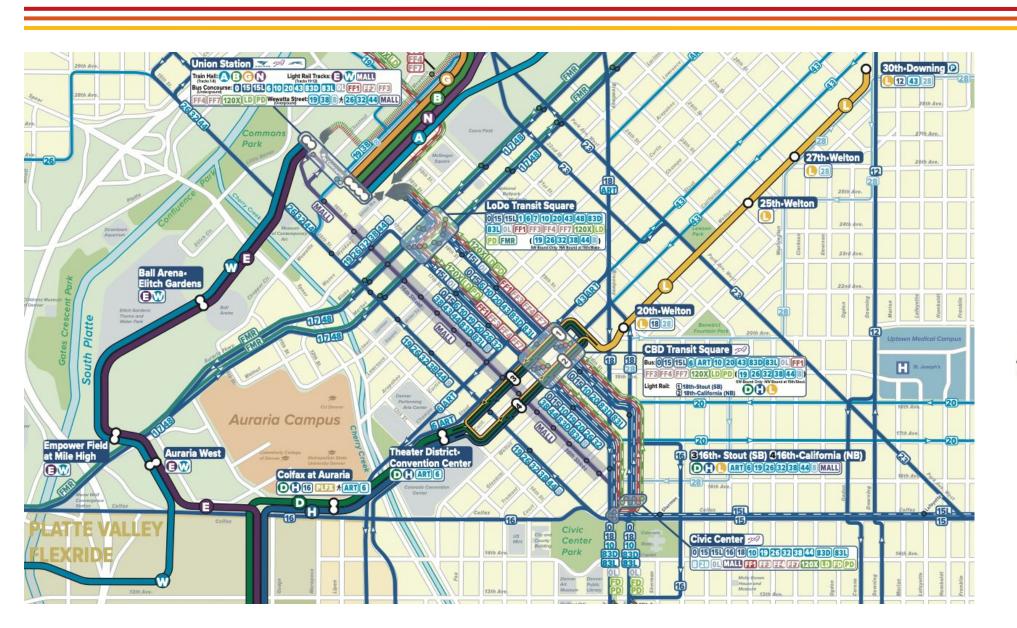
A serious social equity problem: Poor rider literacy as a result of an overly-complex bus network

Lack of understanding of the bus network creates an additional barrier for transit-dependent riders to get where they need to go

For new/potential riders, excessively complex journeys suppresses demand to try RTD's bus network

## **Proposed Solution: Downtown Bus Plan Map**





#### Local Routes: Every 15 min or More 18 Or 1020 Every 16-30 min (10) Or (7A)7B Every 31-60 min • Less Than Hourly, • Part-Time, or Peak Only Flatiron Flyer: Every 15 min or More FF1 Or FF2 FF3 Part Time, or Peak Only FF5 **Regional Routes:** All Day, Freq. Varies 120X Or LDPD Part Time/Peak Only FlexRide Zone: Free Downtown Shuttles: Every 15 min or More METRO





#### Current Downtown Bus Network





With 20 all-day bus routes and 5 train lines serving the area, **Downtown Denver is the hub** of RTD's network

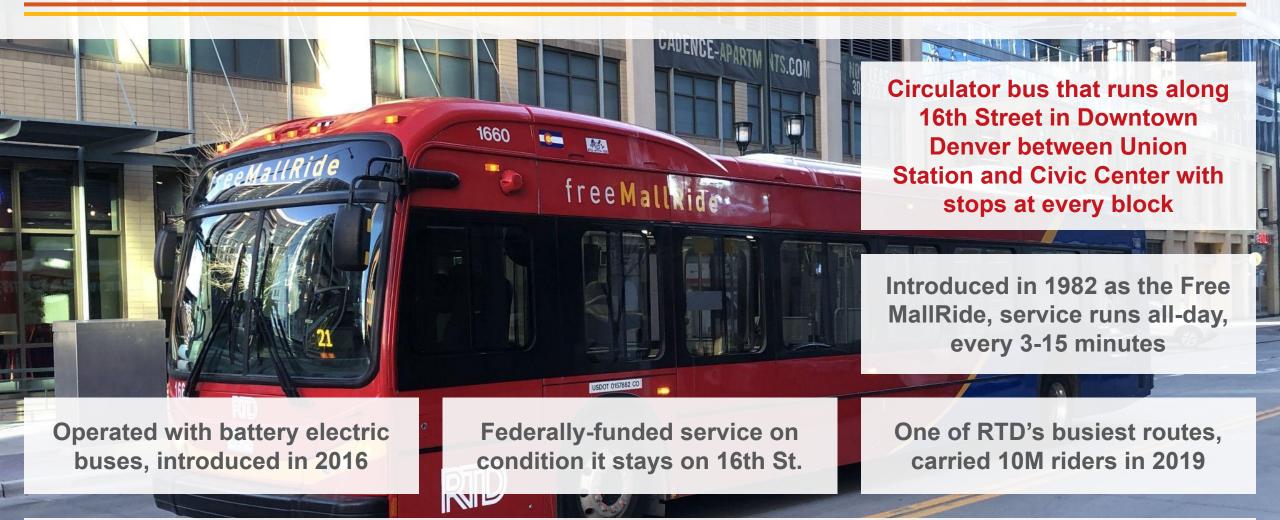
RTD operates 5 bus routes between the hubs at Civic **Center Station and Union** Station, with several others that overlap most of the route

Last major changes were in 2014 when Union Station became the bus hub as services transferred from **Market Street Bus Station** 



#### 16th Street FreeRide Overview





Used by large numbers of fare paying riders going to Downtown locations



#### Free MetroRide Overview



Circulator bus that runs along 18th / 19th Streets in Downtown Denver between Union Station and Civic Center during weekday peaks Introduced in 2014 due to projections that the 16th Street FreeRide would be unable to cope with levels of commuter ridership from DUS



14 stops (7 each way) along 18th & 19th Streets, infrastructure project to upgrade 18th St. stops completed in 2022

Dedicated fleet of 60 ft articulated buses with 3 doors - mostly idle with only limited use on temporary service replacement routes

Aimed at riders who've already paid a fare

Could better information and education about existing bus routes fill the gap for these riders?

#### **Current Downtown Bus Network Issues**



Bus routes between Civic
Center and Union Station use
various routings which
creates an complicated and
hard to understand system

None of the local routes between Civic Center and Union Station operate using the most efficient routing possible via 18th Street

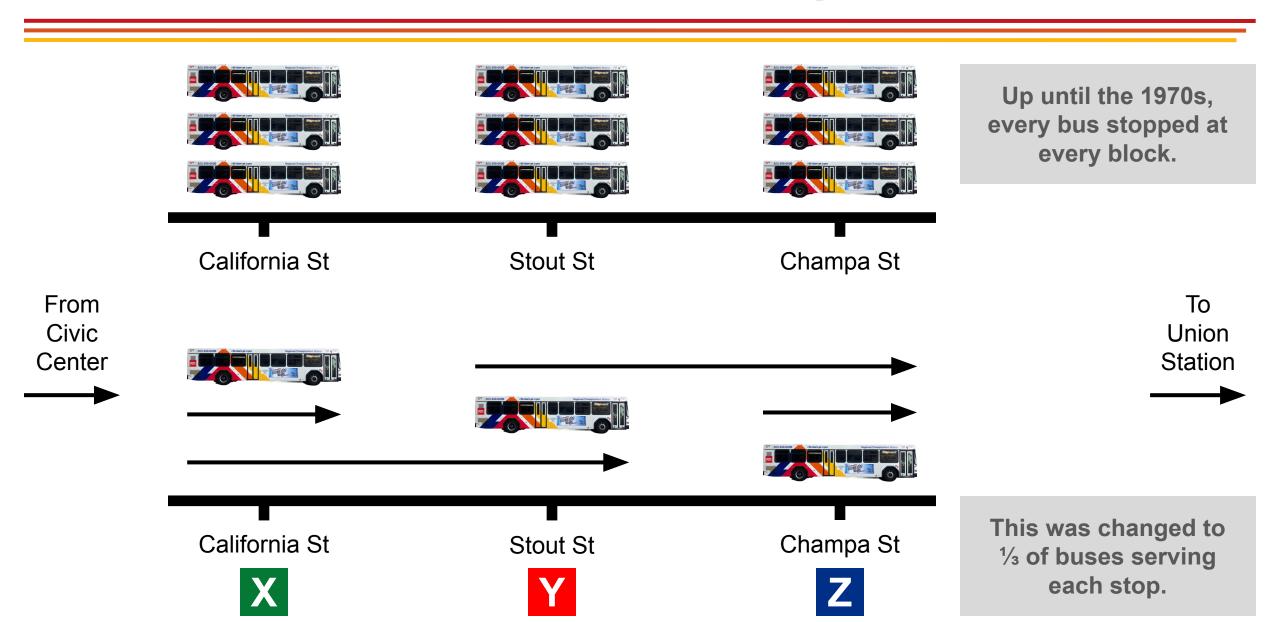
Customer understanding about how Downtown bus service works is low, meaning that ridership is impacted



Downtown buses are slow, inefficient, and underused compared to what they could be

## The Current X, Y and Z Bus Stops





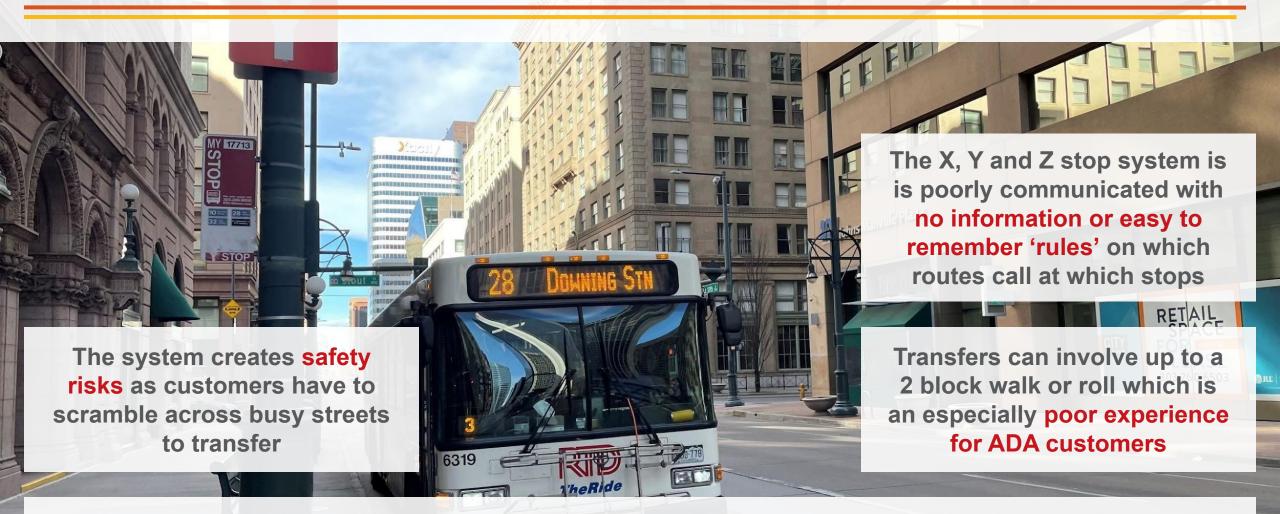
#### RTD Bus Stops on 15th Street





#### Problems with the X, Y and Z Stops

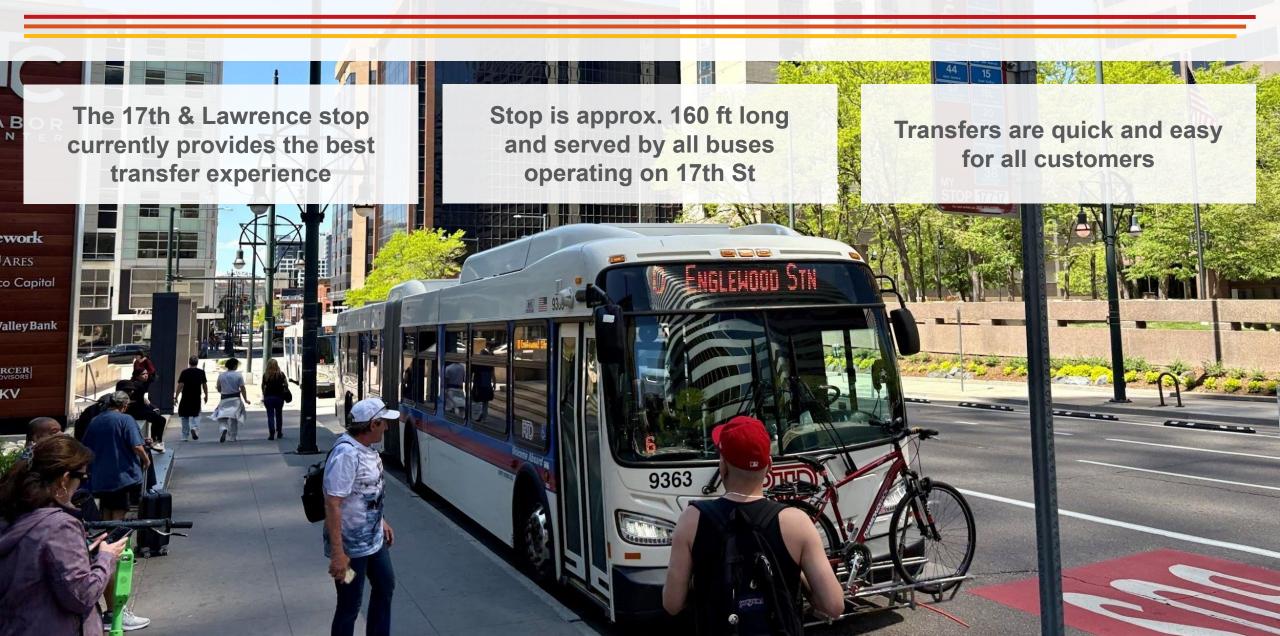




Result is that many customers avoid Downtown's regular bus network and opt to use the better marketed and easier to use 16th Street FreeRide and Free MetroRide services instead

## 17th & Lawrence Bus Stop







#### What is a Bus 'Trunk' Line?



A "trunk" line is a transit right-of-way where multiple lines merge together to create a common stretch of high-frequency service

Trunks do not always require new services, and can instead redesign and incorporate existing routes to create higher frequency

Trunks improve transfer opportunities due to having more lines over the same stretch of stations



#### **Union Station to Civic Center Trunks**





The Union Station (DUS) to Civic Center (CCS)
Trunks will consolidate 24 Downtown bus routes.

Most FF routes, the LD and 120X are extended from DUS to CCS via 17th & 18th streets

The PD, 0L, and 83D/83L are extended from CCS to DUS via 17th & 18th streets

Routes 0, 10, and 15 aligned via 17th & 18th streets

Routes 8, 19 and 38 will serve the 'DUS Overground' stops at 17th & Wewatta St via 15th & 17th streets

Routes 26, 32 and 44 will stop at 15th / Wynkoop, two blocks from DUS via 15th & 17th streets

#### **Blake / Market Trunk**

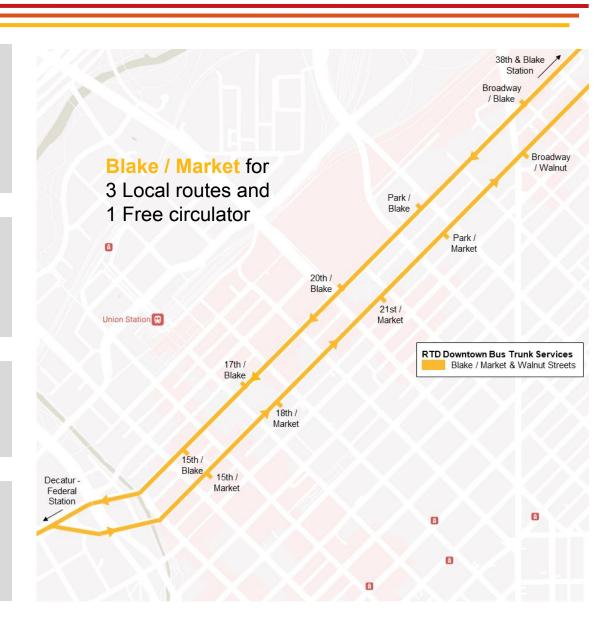


The Blake / Market Trunk, running along the 'sports mile' from Decatur - Federal Station to 38th & Blake Station, fills in one of the largest gaps in Downtown Denver transit service

Despite relentless recent and planned growth in the area, the Ball Arena, Coors Field, the Ballpark Neighborhood and RiNo are poorly served

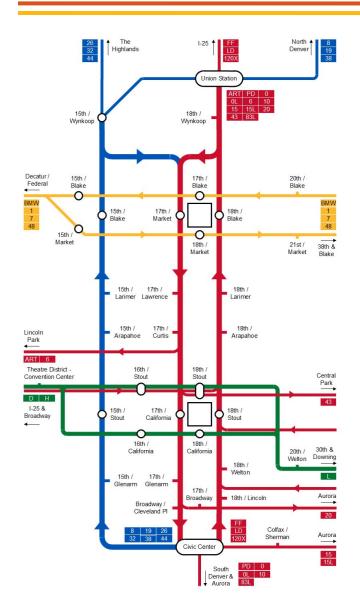
The current Free MetroRide bus fleet could be redeployed to provide a very useful high-frequency service on this trunk

Route 1 is rerouted to 38th & Blake Station, routes 7 and 48 are extended and rerouted to Decatur - Federal Station via Blake & Market streets



### Other Downtown Bus Route Changes





Routes 6, 15L, and 43 are rerouted to DUS via 17th & 18th streets

Route 28 is rerouted to and split at Civic Center, western half is replaced by new route 26

Routes 120X and 122X are merged, serving DUS and CCS via 17th & 18th streets

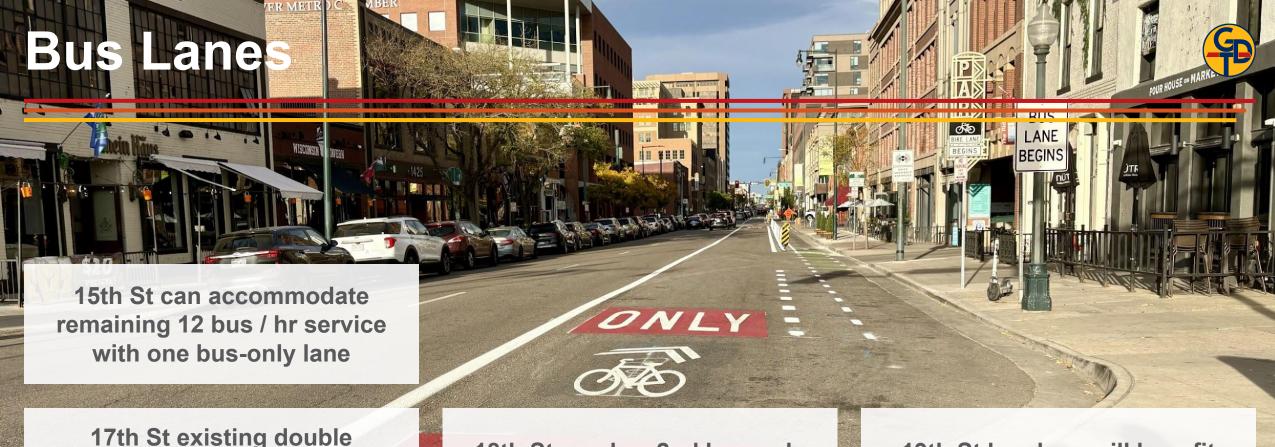
The SB ART District Connector is rerouted to serve 18th & Stout

Routes 3L, 34, and 52 are rerouted to terminate at other rail hubs outside of Downtown.

Route 38 (38W per SOP) is rerouted to Civic Center via DUS

Routes FF4 and FF6 are merged, serving DUS and CCS via 17th & 18th streets

Routes 19 and 20 are unchanged, already using the 15th/17th and 17th/18th trunks respectively



17th St existing double bus-only lanes must be preserved to accommodate express and passing buses

18th St needs a 2nd bus-only lane to accommodate express and passing buses

19th St bus lane will benefit express services of Bustang and private operators

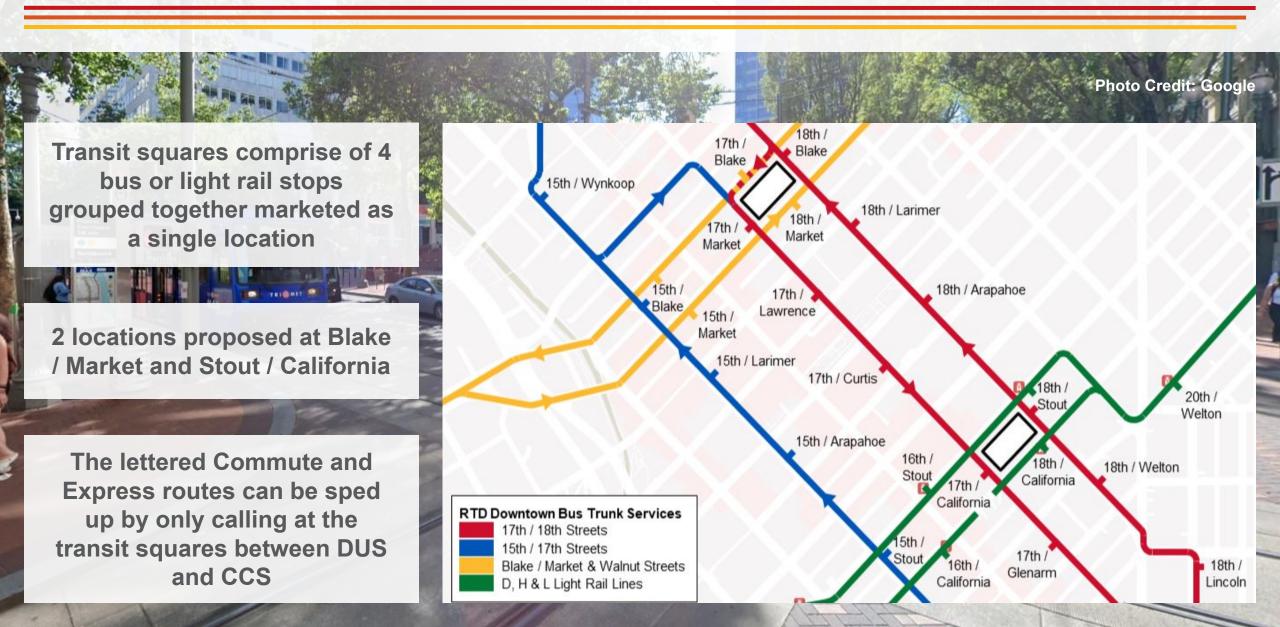
Blake St needs a dedicated bus lane for the full corridor

Market St needs a dedicated bus lane for the full corridor

Bus Lane enforcement needs to be supported by cameras on buses

#### **Transit Squares**





#### **Express Routes: Faster Downtown Buses**





Revenue bus routes can provide a faster crosstown express than the pre-COVID peak-only Free MetroRide.

The 5 to 7 stops of the Free MetroRide between DUS and CCS can be reduced to only 2 stops at the Transit Squares.

FF routes, LD, PD, 0L, 15L, 83L, and 120X are well-positioned to offer this enhanced express service.

# Bus 'Super Stops'





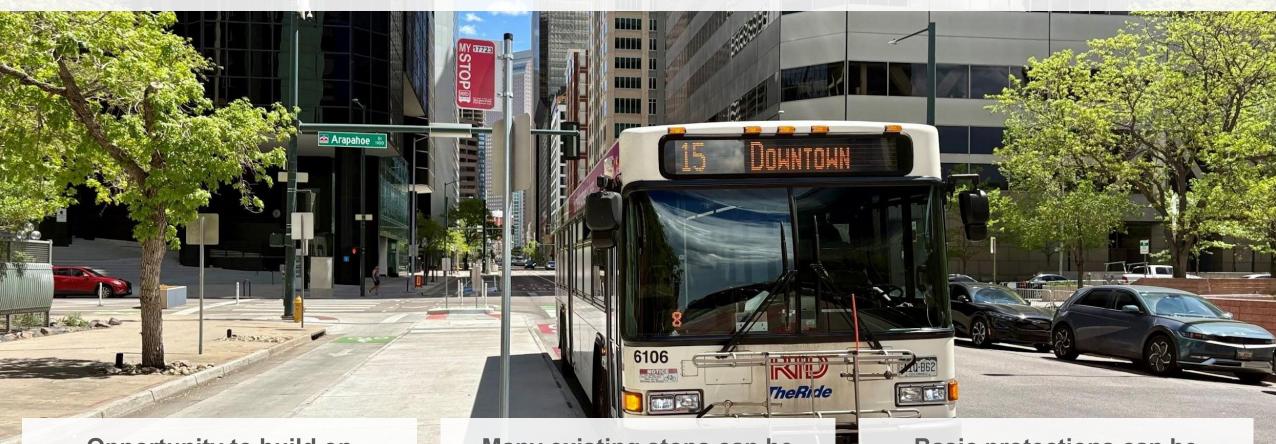
Triplets of X, Y and Z stops on 15th and 17th should be replaced by block-long 'Super Stops' every 2 or 3 blocks

Existing curbside stops on Blake and Market can be lengthened very economically

Result of planned consolidation will be fewer stops for DOTI and RTD to maintain in Downtown Denver

### Adapting 18th Streets' Bus Infrastructure





Opportunity to build on existing dedicated bus lane and stop infrastructure on 18th St

Many existing stops can be lengthened and enhanced with seating, ticket machines and electronic displays

Basic protections can be added to 18th St stops to further deconflict bus riders and bikes

## **Benefits by Each Route**



Downtown Denver Bus Trunk Summary		
Bus Routes	Change vs. System Optimization Plan (SOP) w/ Trunk Adoption	Key Rider Benefit
FF1	Extend to CC via 17th/18th Trunk	Higher frequency AND operational savings
FF3	Extend to CC via 17th/18th Trunk	Higher frequency AND operational savings
FF4	Extend to DUS via 17th/18th Trunk	Higher frequency AND operational savings
FF7	Extend to CC via 17th/18th Trunk	Higher frequency AND operational savings
LD/LX	Extend to CC via 17th/18th Trunk	Civic Ctr. access - connections multiplied
PD	Extend to DUS via 17th/18th Trunk	DUS access - connections multiplied
0	17th / 18th Trunk	Nearly 3 minutes saved
0L	Extend to DUS via 17th/18th Trunk	DUS access - connections multiplied
ART	SB serves 18th & Stout	Connections multiplied
6	Extend to DUS via 17th/18th Trunk	DUS access - connections multiplied
8	15th / 17th Trunk	DUS access - connections multiplied
10	17th / 18th Trunk	Nearly 4 minutes saved
15	17th / 18th Trunk	Over 2 minutes saved
15L	17th / 18th Trunk	Over 2 minutes saved
19	Unchanged	Downtown-area route frequency increases
20	Unchanged	Downtown-area route frequency increases
26/28W (26)	Split up - 15th / 17th Trunk	Split for efficiency, enhanced transfers via Trunk
32	Extend to CC via 15th/17th Trunk	Civic Ctr. access - connections multiplied
38W	15th / 17th Trunk	DUS + Civic Ctr. access - connections multiplied
43	Extend to DUS via 17th/18th Trunk	DUS access - connections multiplied
44W (44)	15th / 17th Trunk	Split for efficiency, enhanced transfers via Trunk
83D/83L	Extend to DUS via 17th/18th Trunk	DUS access - connections multiplied
120X/122X	Merge 120X and 122X via 17th/18th Trunk	Higher frequency AND operational savings

The consolidated "Trunks" offer benefits to every bus route in the form of increased speeds and transfers that are easier and safer

## **Previous & Current City Plans**



The Blake / Market Trunk delivers transit improvements between Auraria and RiNo that have been laid out in several recent Denver transportation plans.

The Denver Downtown Area
Plan (2007) proposes
'streetcar-style transit'
connecting the Auraria
campus to the Ballpark
neighborhood

Denver Moves: Downtown (2020) proposes a 'Larimer Street Transitway' running from Speer Blvd to Broadway

Denver Moves Everyone 2050
(2023) proposes a 'Bus
Priority Corridor' on Larimer
Street, running from Speer
Blvd to Broadway

The Northeast Neighborhoods
Plan (2011) proposes a new
transit route running along
Blake & Larimer Streets in
RiNo

Larimer Street is currently being considered as a candidate for the permanent version of Denver's Shared Streets Program



## Bus Only 18th Street between Blake & DUS



Buses traveling southbound on 18th St between DUS and Blake St can be delayed by several minutes due to vehicle traffic

Prohibiting southbound
vehicle traffic on this section
of 18th St will reduce delays
and enhance on-time
performance

Vehicle access to garages and alleyways will still be available by northbound vehicle lane



### **Arapahoe Square Service**





The Arapahoe Square Urban Redevelopment Area is an area of Downtown Denver roughly bordered by California, Larimer, 20th and 24th streets with Broadway running the the middle of the area

Currently the 8, 38, 48, 52 and ART District Connector serve the area (in gray)

Routes are infrequent, and depart from many different locations

Result is buses in the area are confusing and difficult to use

Hi-frequency service along all sides and through the middle of Arapahoe Square would mean all addresses are within 2 blocks of a bus stop

## **Enhanced Safety of Bike Lanes**





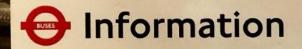
The rebalancing of buses in Downtown also opens up the opportunity to upgrade bike infrastructure for safety and comfort

Conflicts between large volumes of bus riders and bike lane users should be minimized in the Downtown area

Left side bikes lanes are preferred and existing right side lanes on 18th, Blake & Market streets should be considered for upgrades

#### Information and Customer Education













To inform existing customers and attract new ones, an information campaign should be launched to explain the changes to Downtown buses

Maps should show how the trunk system connects
Downtown and how bus routes combine to provide high frequency service

Schedules should be summarized for periods of the day where service repeats (e.g. 10, 25, 40 and 55 minutes past the hour)

## Downtown Bus Hub Gate Optimization

in the Downtown Bus Plan is made possible by re-assigning bus gates at Denver Union Station (DUS) and Civic Center Station (CCS)

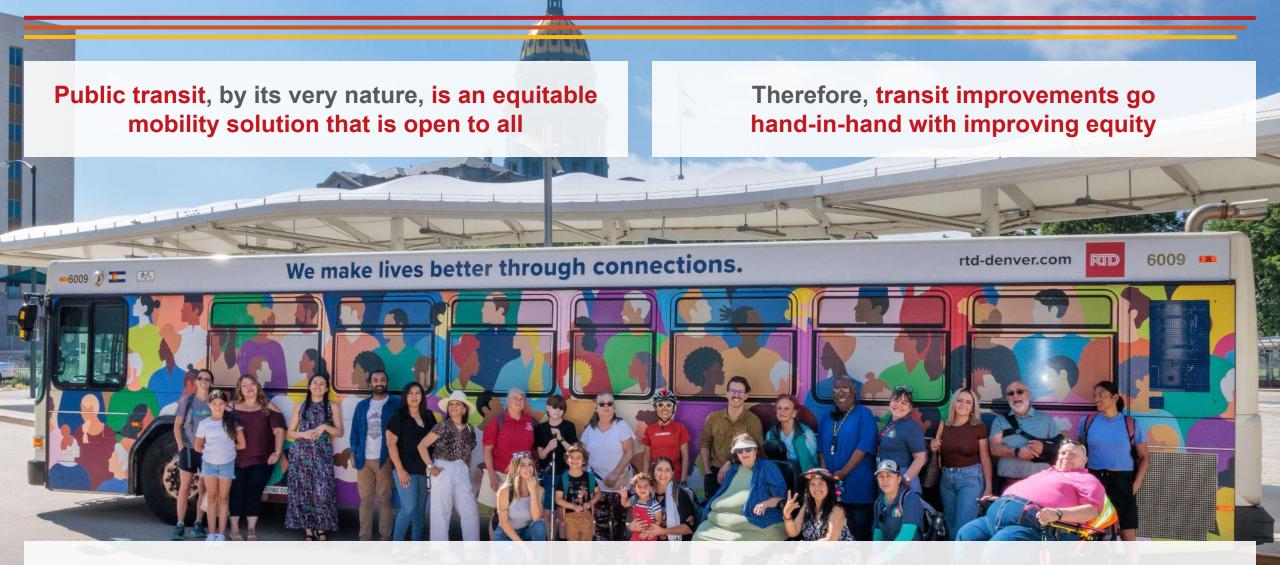
Bus travel times can be cut down by re-assigning bus gates at both DUS and CCS to cut out excessive run-around bus movements currently stretching journeys

See <u>separate GDT</u> <u>presentation</u> on this subject



## Transit Improvements Increase Equity





Low-income, disabled and BIPOC customers are more likely to benefit from improved transit



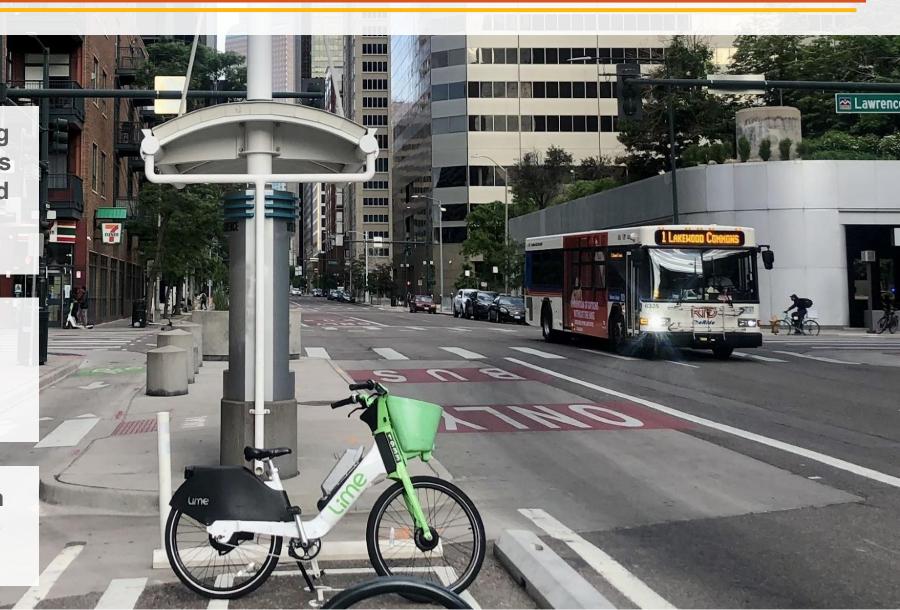
#### **Asks For DOTI**



Invest in extended block-long bus stops and transit squares which are ADA compliant and feature amenities similar to light rail platforms

Add a 2nd bus-only lane on 18th St, make southbound direction between Wynkoop St and Blake St bus-only

Reinforce protection on 18th street between the bike lane and bus bulbs



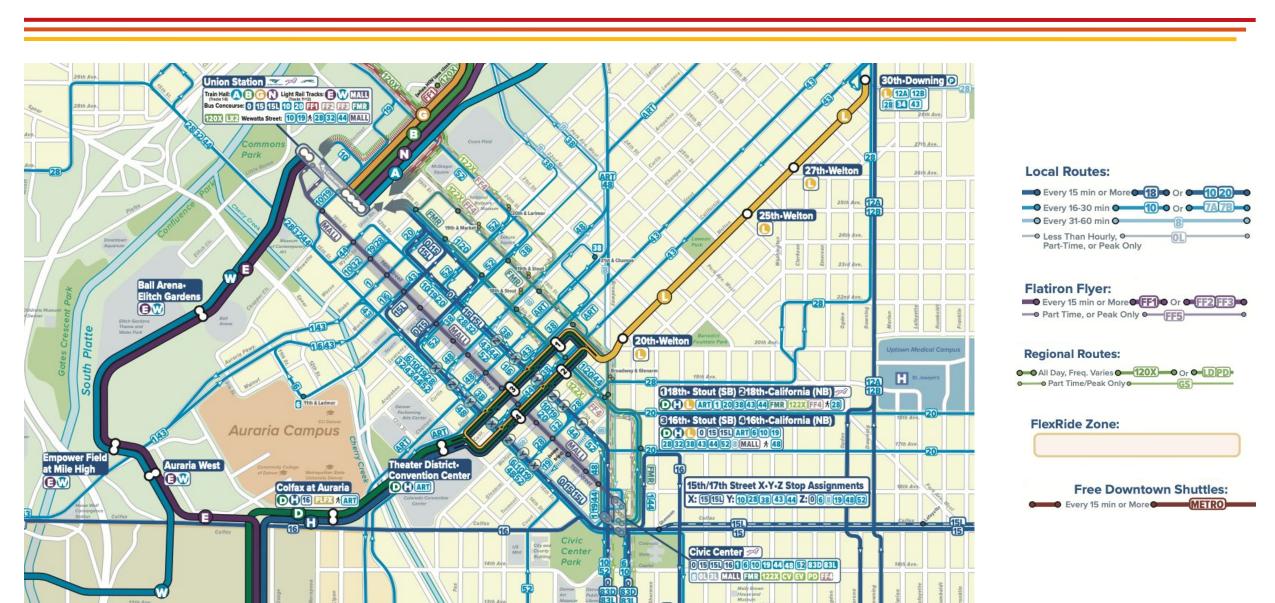
## **Funding Sources**





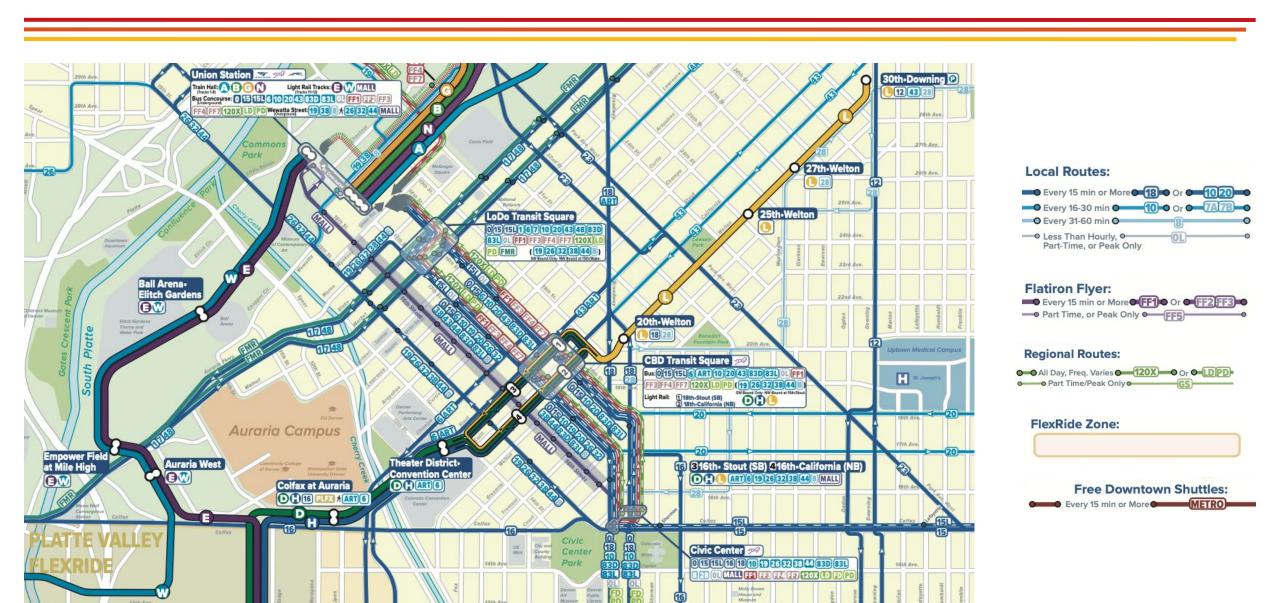
## **Before: Today's Downtown Denver Transit**





#### **After: Downtown Bus Plan**





#### Conclusions





By adopting this plan, RTD and DOTI will greatly enhance journeys that pass through and connect in Downtown Denver

Ridership on Downtown bus routes will grow as every line gets accelerated journey times, is better-connected, and easier to use

Instead of having 3 legs and 2 transfers, more journeys in the District will only have 2 legs and 1 transfer

