



SYSTEM PLAN INITIAL INVESTMENT

Adopted June 10, 2020

LEGEND

LIGHT RAIL

- Orange Line
- Potential Future Extension
- Blue Line

METRORAIL

- Red Line
- Green Line
- Potential Future Extension

METRORAPID

- Gold Line
- Enhanced MetroRapid Route
- Potential Future Extension

METROBUS

- Current Frequent Local Routes

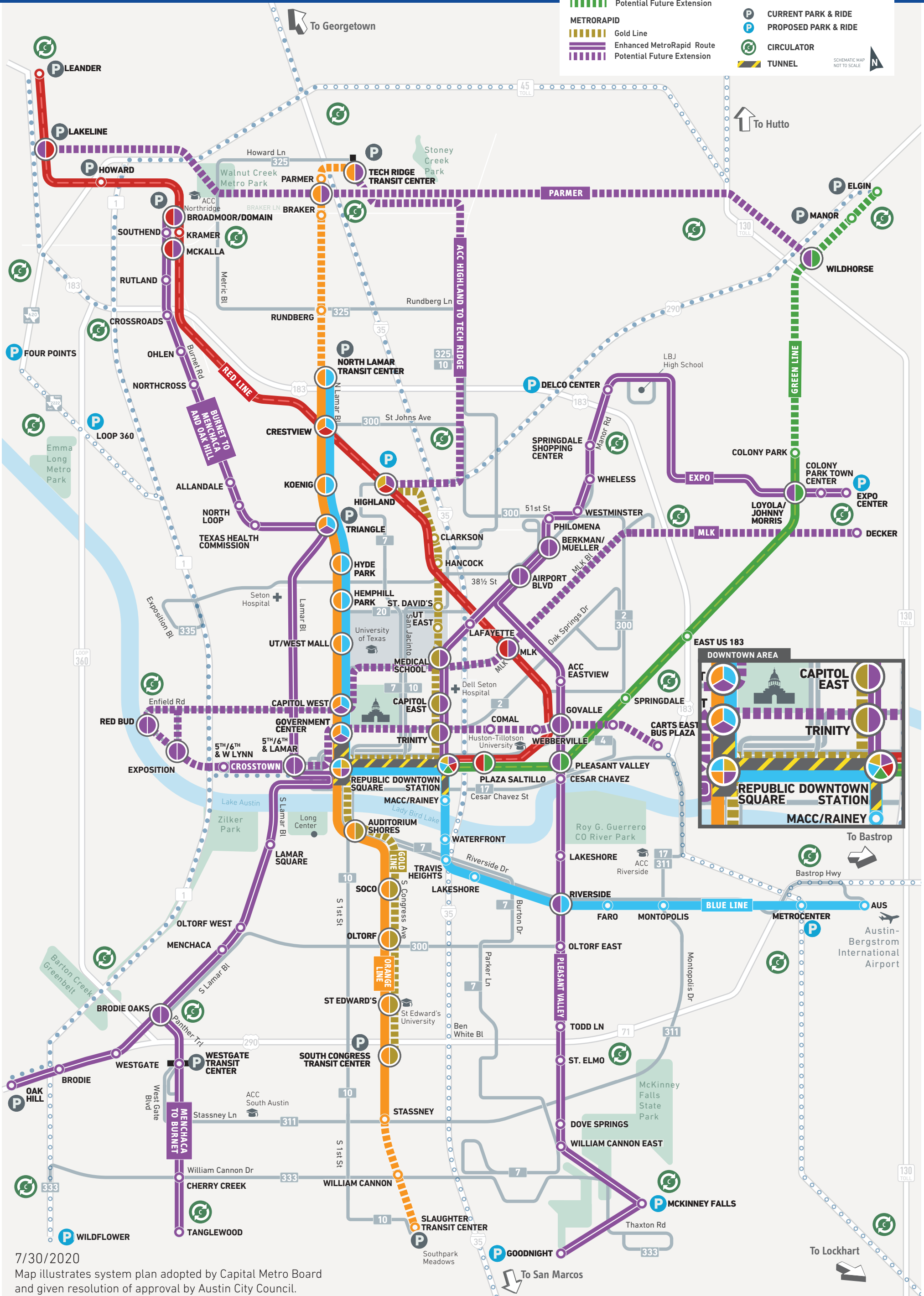
METROEXPRESS

- Current MetroExpress
- Future MetroExpress

ADDITIONAL AVAILABLE SERVICES

- MetroAccess
- MetroBike
- CURRENT PARK & RIDE
- PROPOSED PARK & RIDE
- CIRCULATOR
- TUNNEL

SCHEMATIC MAP NOT TO SCALE



7/30/2020

Map illustrates system plan adopted by Capital Metro Board and given resolution of approval by Austin City Council.





METRO



projectconnect

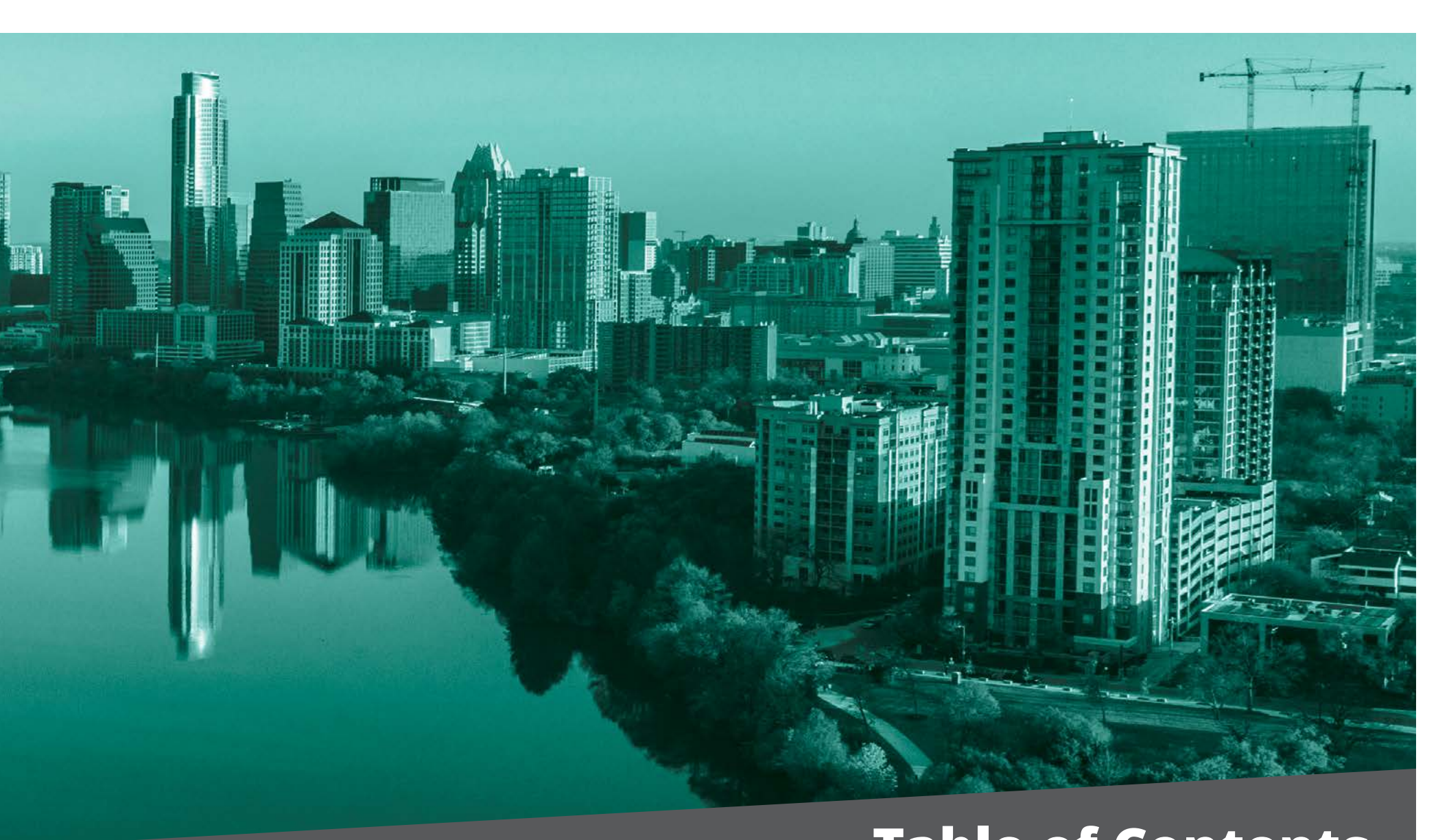
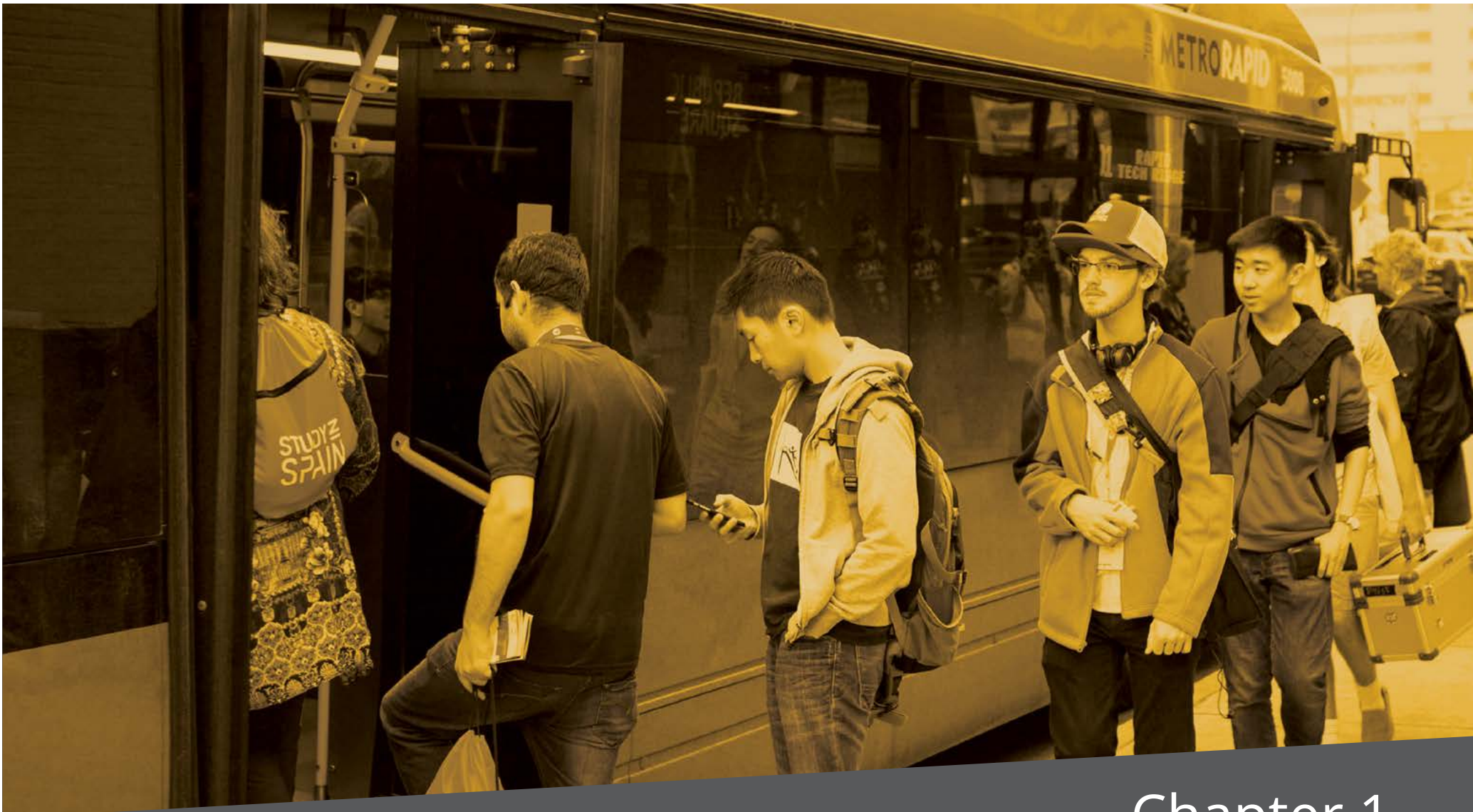


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Chapter 1

Introduction to Project Connect

What is Project Connect?

Project Connect Timeline

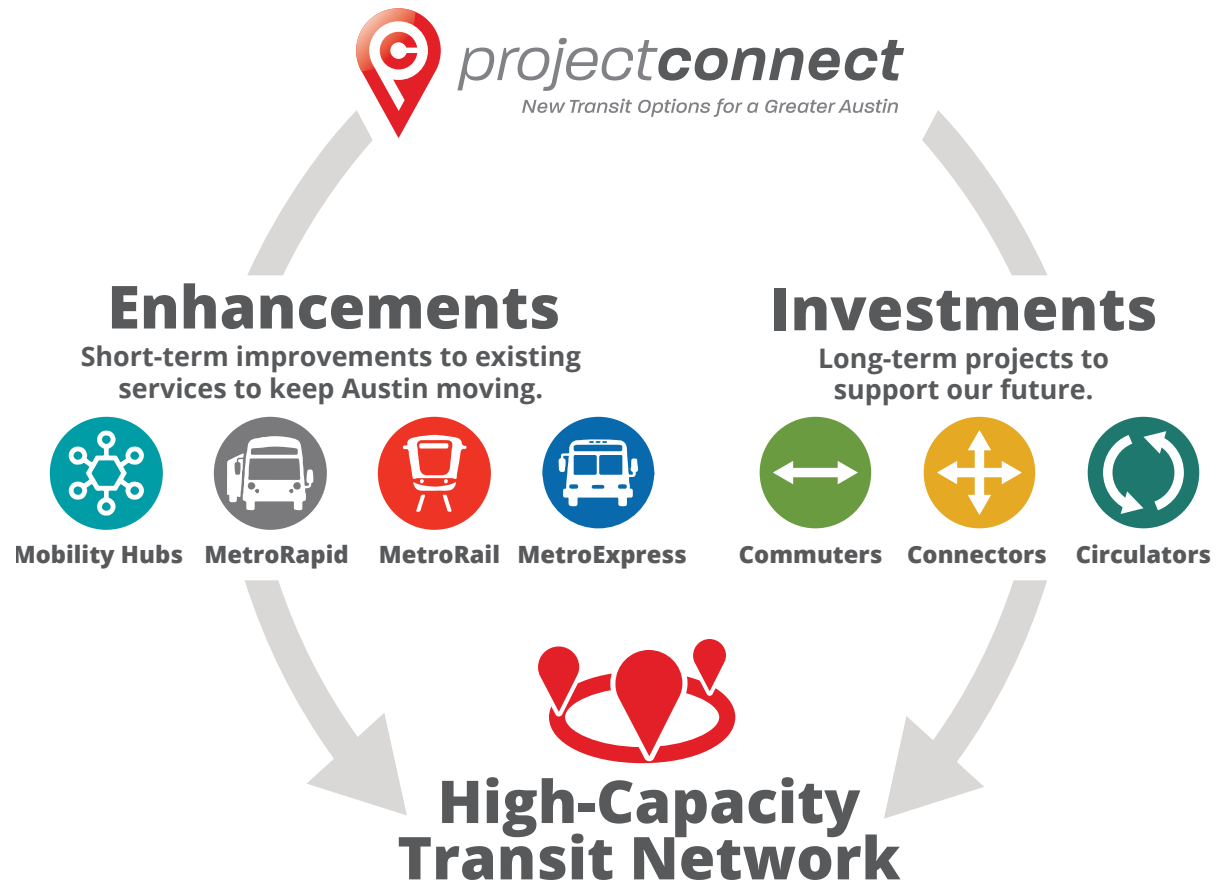
Project Connect Goals and Benefits

What is Project Connect?

Project Connect is a plan designed to create a system of high capacity transit (HCT) options that will connect people, places and opportunities in an affordable, efficient, and sustainable way. Through Project Connect, we have been working closely with residents, workers, and community groups to develop a transportation plan that addresses the region's short- and long-term needs.

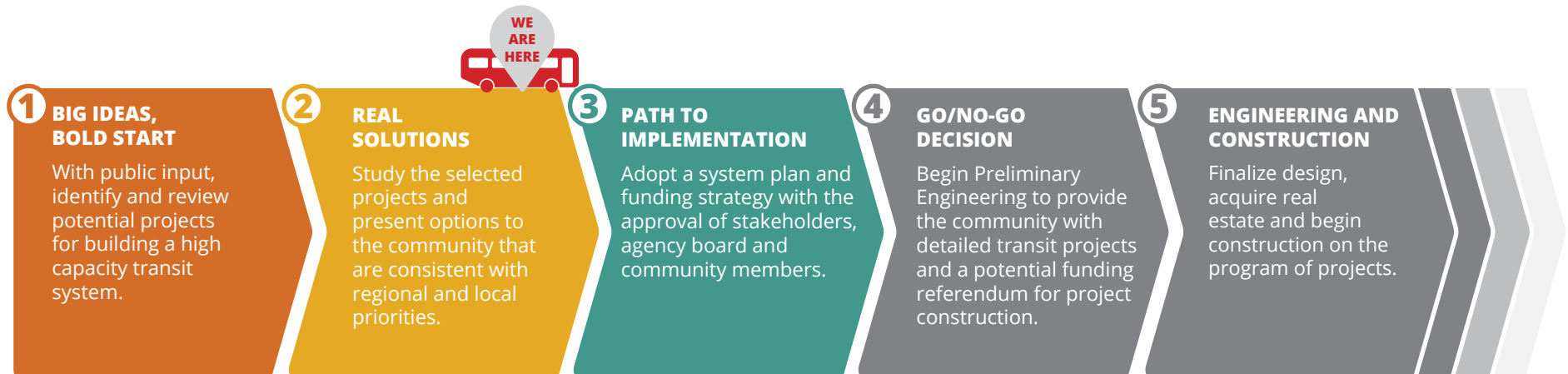
Project Connect's **Enhancements** program is identifying short-term projects that will ensure our existing transit network operates efficiently. The enhancement projects will improve MetroRail, MetroRapid and MetroExpress services, as well as create Mobility Hubs at sites across the region.

Project Connect's **Investments** program is developing plans for a long-term high capacity transit system capable of moving more people in the same amount of road space as cars. These new transit options will provide real ways to avoid traffic and help produce a more balanced transportation system that benefits our diverse population in Centra Texas — including those who do not currently take transit.



For a glossary of terms used in this document, please see page 20.

Project Connect Timeline



What have we done so far?

Austin has been studying high capacity transit options for the past 30 years. All of that analysis and experience has given us a deeper and more comprehensive understanding of the opportunities and challenges facing HCT than ever before. While previous studies and efforts have not yielded real-long term transit solutions for our city, Project Connect aims to change that.

In step 1, we identified and reviewed bold new ideas for improving our transportation system, keeping in mind other ongoing regional transportation plans. In step 2, we developed criteria based on community input to select and study potential projects. This screening process helped us narrow our options to a set of alternatives that are consistent with neighborhood vision, their priorities, and the needs of the region.

What comes next?

In 2018, we will be presenting our draft alternatives through a series of open houses, neighborhood meetings and other public events. The support and concerns we hear at these events will guide our development of final alternatives. The overall system plan will include a funding strategy and schedule for implementation.

With the input of citizens, agency boards, and other stakeholders we will finalize the technical aspects of the system plan and adopt the plan. Next, we will initiate the design and engineering processes. At each step of the way, we will continue to engage and collaborate with the community to ensure that this plan reflects the wide range of needs and concerns felt by Austinites and area commuters.

Project Connect Goals and Benefits



Affordability

High capacity transit (HCT) is a cost-efficient way to get riders to live, work and play destinations. It supports community affordable housing goals by encouraging denser development on key corridors.



Health

The Centers for Disease Control recommends that humans achieve a minimum of 10,000 steps a day to maintain joint and heart health. Walking or biking a few blocks to transit can be the key differentiator in a community's health profile.



Neighborhoods

Complete streets that have good transit and pedestrian amenities create vibrant, walkable neighborhoods. Fewer drivers means a reduction in parking demand.



Economy

HCT helps our city attract and retain businesses looking to ensure that their employees have a world-class transit system to get to work efficiently.



Safety

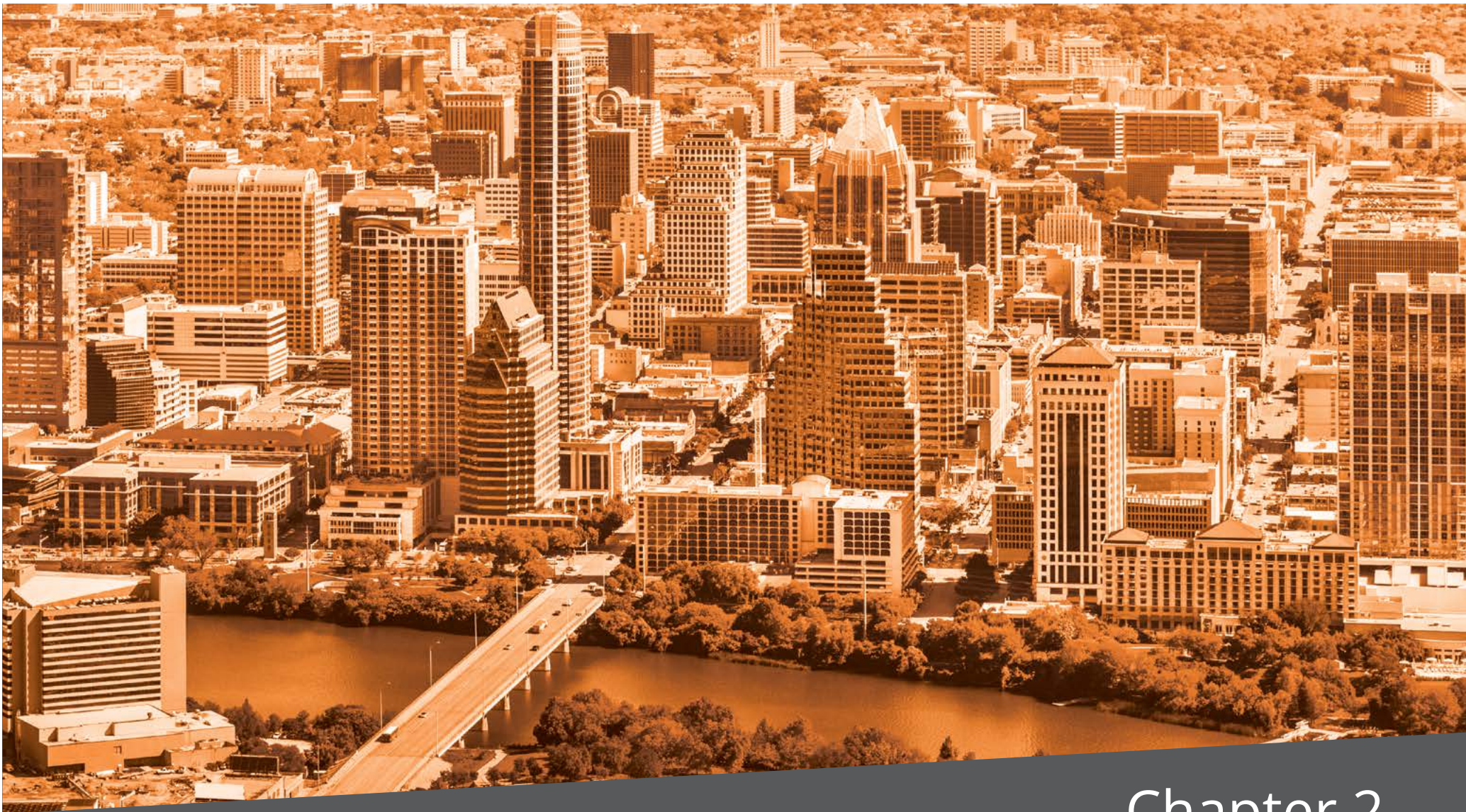
By creating a more balanced transportation network, HCT takes more drivers off the road and creates a safer urban environment.



Environment

A transit vehicle carrying 40 people means 40 fewer cars in traffic. A strong transit network promotes cleaner air and a more sustainable city.





Chapter 2

Addressing Regional Challenges

Unprecedented Growth in Central Texas

Investing in Our Network

Moving More People in the Same Space

Unprecedented Growth in Central Texas

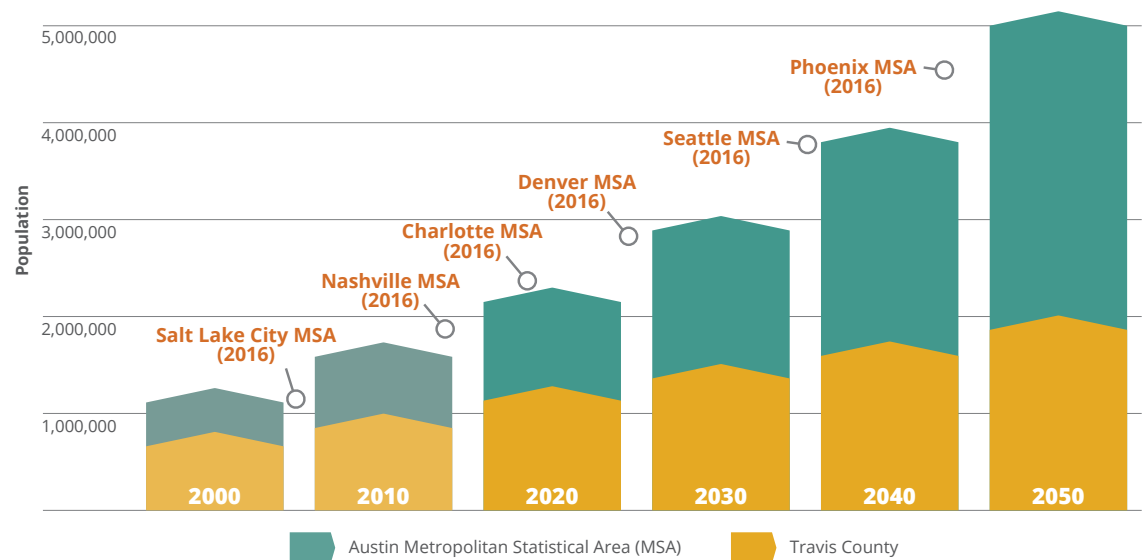
Our Growing City

Austin is growing fast. With over 150 new residents moving to the city every day (and most of those residents bring a car with them!), Our transportation network faces major challenges to keep everyone moving. Agencies across the city and region have been working with the public to address these challenges and find mobility options that make life happier and healthier for everyone. High capacity transit is a key part of building a balanced transportation system that meets our growing needs.

Our current transportation network was designed for a much smaller city than Austin is today. Without any more room to expand our roads or add new car lanes, transit remains a cost-efficient option to move more people in the same amount of space. High capacity transit modes like light rail or BRT can help by using less room on the street to move many more people than cars. Dedicating a lane for transit greatly increases the number of people that a road can carry in the same amount of space.

Population Growth Projections

Travis County and Austin Metropolitan Statistical Area



159 new people moved to Austin every day in 2017.

Based on current trends, that means they are bringing **115** new cars into Austin every day.



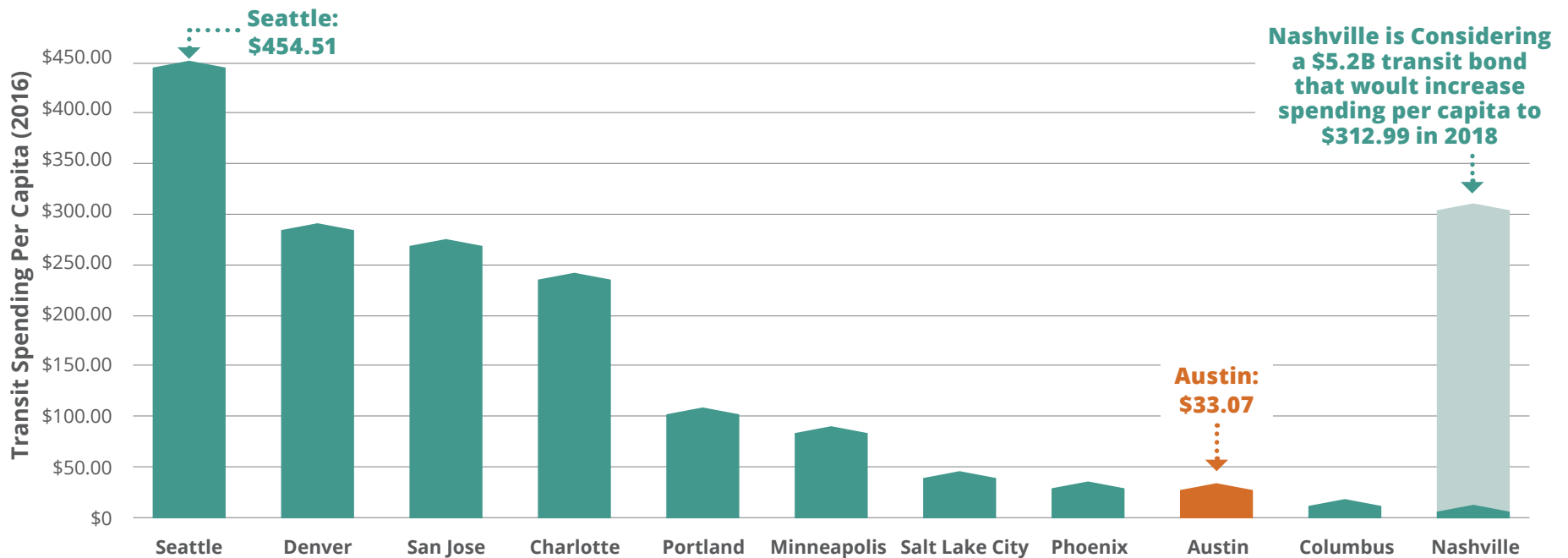
Investing in Our Network

In order to keep up with all of the growth happening in Austin, we need to keep investing in our transit system. In recent years, we haven't committed nearly as much funding to transportation infrastructure and services as many peer cities-- **only \$33.07** was spent per person in Austin in 2016.¹

Not only is transit investment vital for keeping up with our city's growth, but it can also create major economic benefits for everyone in the city — even those who don't take transit. Research suggests that for every \$1 billion put towards sustained investment in public transportation, up to **\$3.7 billion** is created in economic benefits.²

Transit Capital Expenditures Per Capita

Austin and Peer Cities, 2016



Source: National Transit Database, 2016

Moving More People in the Same Space

Transit in Mixed Traffic

When transit vehicles have to share lanes with cars, they travel much slower and move fewer people. Merging in and out of traffic to pick up and drop off passengers means **a longer bus ride and delays for car drivers**. Fewer people choose to ride a bus if it has to sit in traffic, which creates a negative feedback cycle that makes it harder for everyone to get around.

This roadway is carrying 126 people

using six auto lanes with two local buses. Traffic is very congested and moving slowly, even though the road is carrying 100 fewer people than the road with transit-only lanes.



Transit-Only Lanes

Throughput capacity is the number of people that can use a roadway in a given period of time. Creating a dedicated transit lane greatly increases the throughput capacity of a road, because **a dedicated transit lane can move many more people than an auto lane where each car has an average of 1.2 people per vehicle.**³

This roadway is carrying 235 people

using two transit-only BRT lanes and four auto lanes. Even with all those people, traffic is moving freely thanks to the throughput capacity of the transit-only lanes.





Chapter 3

High Capacity Transit Overview

Service Types

Key System Features, Frequency and Stop Spacing

Lane Configuration Options

Service Types

High capacity transit (HCT) is a term for a variety of high-quality transit services including commuter rail, light rail, streetcar, bus rapid transit (BRT) and others. HCT service is fast, frequent and convenient, so Austin residents and workers can depend on it for their daily needs. While each type of HCT has unique advantages and disadvantages, all forms of HCT move lots of people quickly

and efficiently by taking riders out of the automobile congestion slowing down our roads today. Regardless of service type, a successful HCT network often includes coordinated land use planning to help neighborhoods take advantage of transit service, as well as good pedestrian and bicycle connections to help riders get to and from the station.



Commuter Rail

Commuter Rail service uses heavier trains in an exclusive right-of-way to move people over long distances. It works best when stops are spaced farther apart so that trains can maintain their high speed.



Light Rail

Light Rail typically operates in an exclusive right-of-way in areas of higher population and employment densities. High-volume corridors with coordinated land use planning and connections to other travel modes are ideal for light rail HCT service.



Bus Rapid Transit (BRT)

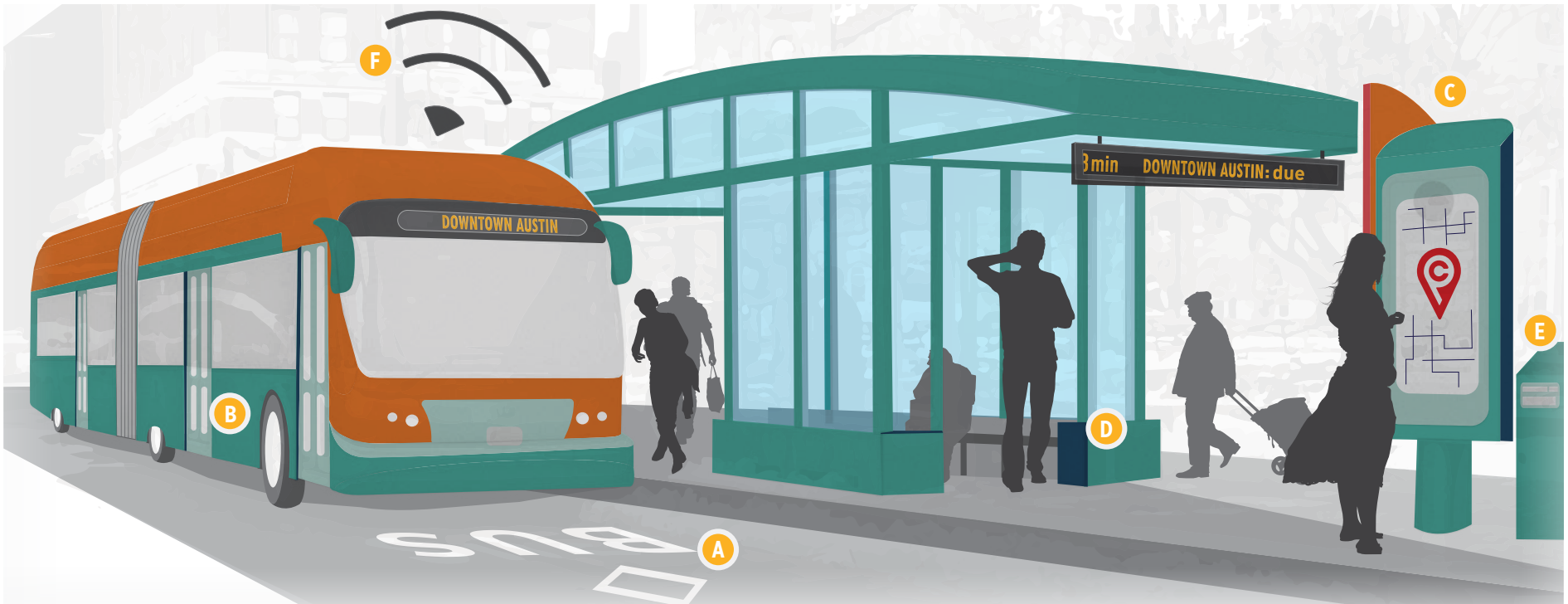
BRT is a fast and frequent bus service that operates in exclusive transit lanes, with high-quality stations and off-board fare collection. BRT is often described as light rail on rubber tires, because it includes many of the same features as rail service.



Rapid Bus

Rapid Bus is very similar to BRT, but does not operate in dedicated transit lanes. Transit-priority features, such as queue jump lanes and signal priority, can help make rapid bus service faster and more reliable than typical local bus service.

Key System Features



A DEDICATED RIGHT-OF-WAY
Transit-only lanes separate transit from traffic and are clearly marked to increase visibility.

B SPECIALIZED VEHICLES
Custom vehicles provide more capacity, more doors, and lower floors for easier loading and unloading.

C HCT BRANDING
Unique designs make transit vehicles and stations more visible, raising awareness of HCT and increasing customer expectations for higher levels of service.

D ENHANCED STATIONS
Stations include raised platforms, off-board fare payment, real-time arrival information, larger shelters and other passenger amenities.

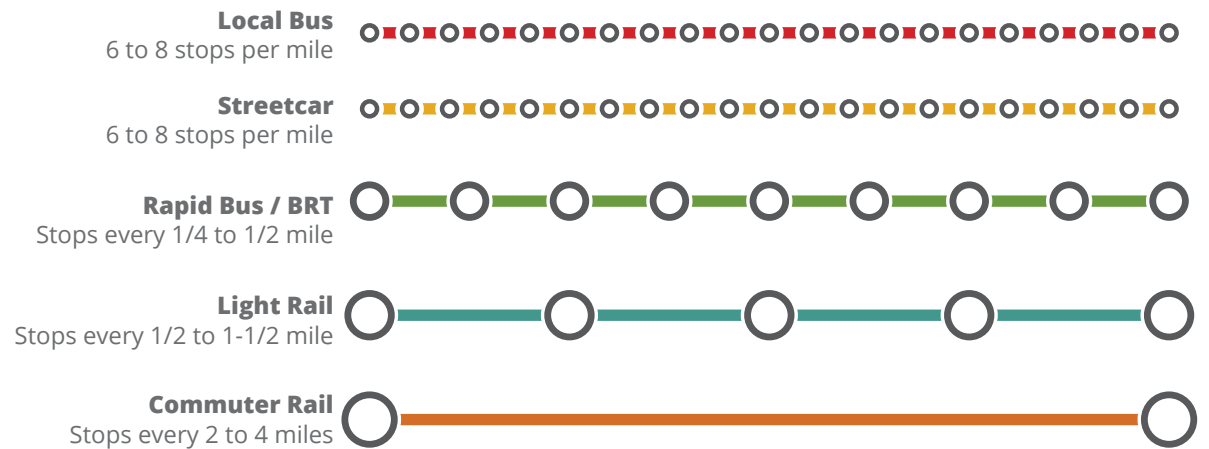
E OFF-BOARD FARE COLLECTION
Off-board fare collection using ticket vending machines, card readers and other tools at stations allow passengers to load without waiting in line to pay their fares.

F TRANSIT SIGNAL PRIORITY
Intersection improvements, including transit signal priority (TSP), allow transit to bypass congestion. TSP gives buses and trains earlier and/or longer green lights.

Frequency and Stop Spacing

Stop Spacing

The ideal distance between stops and stations is different for each transportation mode. Local buses and streetcars stop very frequently, providing convenient service but slower speeds. BRT, light rail, and commuter rail have less frequent stops, but they can move more people over greater distances and at higher speeds.



ARRIVALS EVERY 10 MIN OR LESS



SERVICE 20+ HRS PER DAY

Frequency and Span

Quality HCT service isn't just faster, it's also more frequent and provides more hours of service each day. That means riders can spend less time waiting and more time getting where they need to go.

Lane Configuration Options

Center-Running Transit Lanes

Center-running transit is relatively inexpensive to construct and maintain. It can present some challenges like limiting access from one side of the street to the other, but can usually be built without directly impacting many adjacent properties. The speed and reliability of center-running transit depends on how often transit vehicles have to stop at traffic lights.



COST: Low



SPEED & RELIABILITY: High



CONSTRUCTION CHALLENGES: Low



Side-Running Transit Lanes

Side-running transit lanes are similar to center-running transit lanes in many ways, including cost. Side-running transit lanes create fewer disruptions to turning auto traffic, but present more challenges for maintaining access to adjacent properties. As a result, transit speed and reliability are likely to be lower with a side-running configuration.



COST: Low



SPEED & RELIABILITY: Low



CONSTRUCTION CHALLENGES: Moderate



Lane Configuration Options

Elevated Transit Lanes

Elevated transit lanes are expensive, but they can allow people and cars to pass freely underneath. Elevated structures create visual barriers for adjacent residents and businesses, and are less convenient for pedestrians to access. Transit speed and reliability are high, because elevated transit lanes can bypass traffic lights and road intersections.



COST: High



SPEED & RELIABILITY: High



CONSTRUCTION CHALLENGES: High



Underground Transit Lanes

An underground transit configuration is the most expensive option, but it can provide the highest level of speed and reliability while creating the smallest impact on adjacent businesses and residents. Underground transit systems avoid competing with surface vehicles for space on the road.



COST: High



SPEED & RELIABILITY: High



CONSTRUCTION CHALLENGES: High





Chapter 4

Building a Network for Central Texas

Growing Our Network Over Time

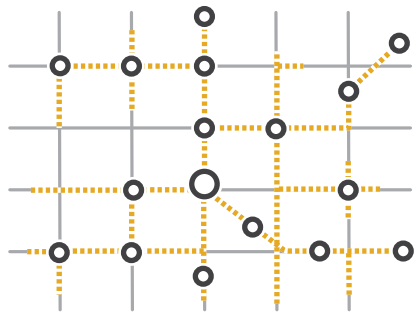
Our Bright Future with HCT, More of the Same without HCT

Frequently Asked Questions and Glossary of Terms

Growing Our Network Over Time

Today: Local Bus Network

A good local bus system — like the one we have today in Austin — is a good baseline for developing a high capacity network. We can use existing ridership to understand travel patterns and identify gaps.



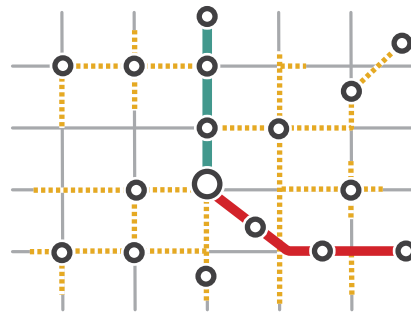
Our Current Network

A budding transit network, like the one we have in Austin today.



2025: Our First High Capacity Corridors

Building high capacity lines on major corridors is the start. It will help move more people through a key area and give us a good foundation for future growth.



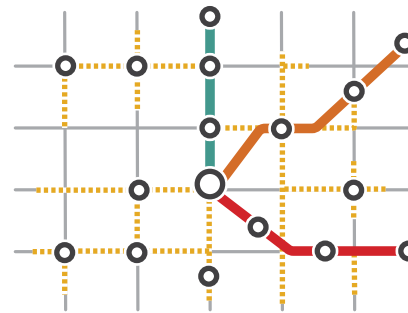
7 to 10 Years from Now

Creating new transit services helps to support the needs of a growing city.



2030: Expanding Our Service

Over time, we can add more corridors to the network. Expanding the network creates more options and improves service for everyone who is already connected, while also benefiting new riders — a win-win for everyone.



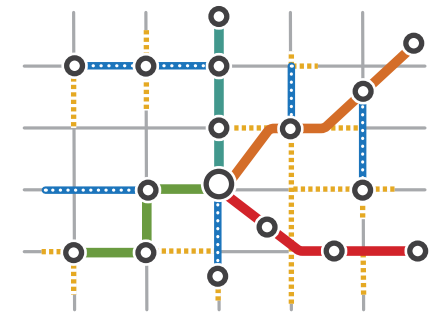
15 to 20 Years

Adding new high capacity corridors helps our whole system mature and improve.



2040: A Network for Central Texas

Eventually, we will have a thriving network that supports the daily lives of all kinds of people from across the region. Local bus routes still play a key role, but now they bring riders to more destinations.



30 Years and Beyond

The fully-grown network will provide great transit service for many years into the future.



A Bright Future: With HCT



More Choices, More Opportunities

A great high capacity transit system doesn't just move people faster, it gives Central Texans more choices for how to get around. More choices means better access to jobs, services and people.



Inclusive Economic Growth

A high capacity transit system creates better connections between neighborhoods allowing more people to share the benefits of our city's growth by accessing good jobs and affordable housing — even if they don't live downtown.



Managing Congestion

Reducing traffic congestion is hard, and we are limited in our ability to expand high-traffic corridors. Even if we could, research indicates that expanding roads actually invites more people to drive. High capacity transit can move more people than cars in the same amount of road space, which can give Central Texans a way to opt out of gridlock.



A More Affordable Region

Keeping Austin affordable for everyone will require a better approach to managing our growth and serving all of our communities. Households that choose to use transit instead of a car could **save 26% to 38%** in transportation costs each year.⁴ Transit also provides better access to health care services and reduces health care costs.



More of the Same: Without HCT

Growing Congestion Challenges

We simply don't have any more room to expand or add lanes to many of our key roads, especially close to downtown. Congestion will continue to take a toll on our city, costing us as much as \$1,159 per person each year in lost time, productivity and resources.⁵



No Alternatives, Missed Opportunities

Without a transportation alternative to cars, it will be harder and harder for everyone to get to the places they need to go. Good jobs, quality healthcare and vital services will remain out of reach for many. Austinites will miss out on new opportunities as employers look to other cities for growth.



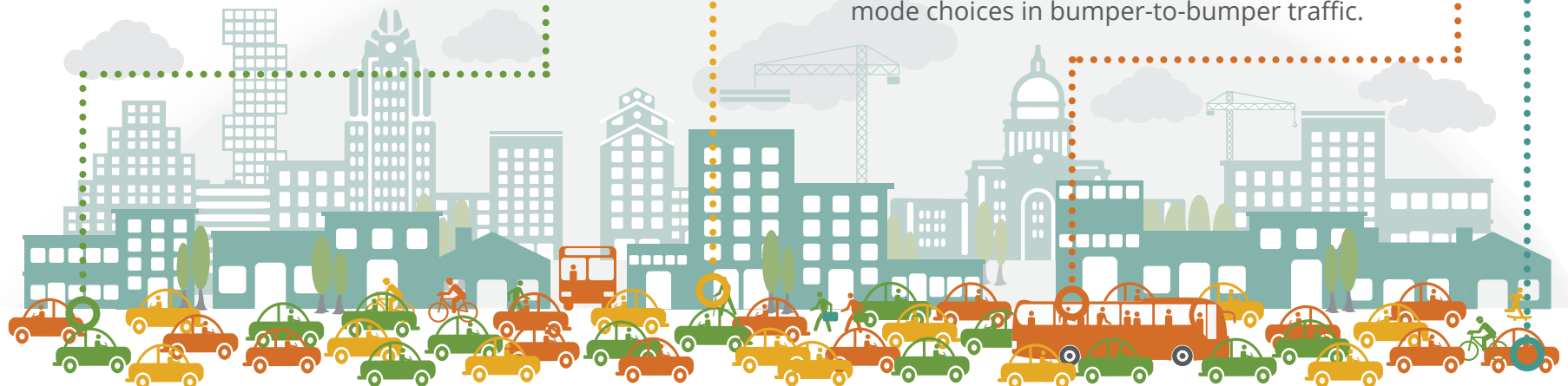
An Unaffordable Region

Cities that provide great high capacity transit see significant cost savings for households. Without more investment in our transit system, the cost of living will continue to rise, forcing many of our neighbors, coworkers and children to move away in search of a more affordable place to live.



Problems for All, Benefits for Few

More people are moving to Austin, with or without good transit options. As growth makes the cost of living higher and our roads continue to fill up with cars, only a small number of Central Texans will get to enjoy the benefits of our economic prosperity while most will feel the impacts of limited transportation mode choices in bumper-to-bumper traffic.



Frequently Asked Questions

Can't we just build more roads?

Yes, but we'd be stuck in traffic ... still. Road construction timelines can't keep pace with urban growth, and the limits of our existing street network are forcing us to look for a way to move the greatest number of people in the least amount of space. Transit is a cost-efficient way to do this, while also offering riders a productive use of time on their way to their destinations.

Where will the new service go?

That is a critical part of Project Connect planning. Step 1 was focused on deciding where transit should go and looked at which roads or corridors were most appropriate. Step 2 will evaluate the modes along each of those routes. Step 3 will determine which alternatives are preferred by the community, supported by technical criteria and competitive for federal funding.

Is urban rail still part of this effort?

The most recent urban rail plan did not receive majority support in the 2014 bond election. However, any and all corridors that were identified in a previous plan or study as candidates for HCT were included in our Step 1 evaluation process.

What will this cost and who will pay?

As part of this planning process, we will identify a funding strategy for the design, construction and operation of the system plan. We will also identify local, county, federal and private sector funding opportunities. The Federal Transit Administration has long-running grant programs that could also be part of our funding strategy.

How will we determine the best options?

We're working with partner agencies and municipalities, community stakeholders and the general public to determine the needs of the area, define the goals of the projects, and refine specific criteria that need to be met. The project team will then use those criteria (including costs, benefits and anticipated ridership) to evaluate HCT alternatives for each corridor.

Didn't Austin just pass a transportation bond?

Yes, but capital improvements for transit were not part of the city of Austin's 2016 bond package. Capital Metro is working very closely with the leaders of the Austin Strategic Mobility Plan (ASMP) to ensure key corridors are transit-ready.

Glossary of Terms

Boarding and Alighting

Boarding is the act of getting on or into a transit vehicle (such as a bus, train or streetcar). Alighting is the act of getting off of a transit vehicle.

Bus Rapid Transit (BRT)

BRT is a high-quality bus service that operates much like light rail and provides frequent, rapid service in dedicated transit lanes.

Frequency

Frequency is how often a bus or train arrives at any given stop or station. HCT aims for a frequency of service of at least every 15 minutes during morning and evening rush and every 20 minutes during other times of the day.

High Capacity Transit (HCT)

HCT refers to faster, higher-volume transit services in busier, denser travel corridors. HCT services typically move more people faster and more efficiently than regular bus services, and operate seven days a week in dedicated transit lanes.

Light Rail Transit (LRT)

LRT provides regional or local rail service that operates with one-to three-car trains in dedicated space for transit called guideways. Guideways may be in roadway medians, alongside a roadway, elevated or underground.

Queue Jump Lanes

Queue jump lanes are special transit-only lanes that allow buses to move to the front of stopped traffic at a stop light. Queue jump lanes help transit vehicles bypass congestion.

Rapid Bus

A high-quality bus service that has some transit priority features, such as queue jump lanes or transit signal priority.

Right-of-way

Right-of-way is the publicly-owned area occupied by a road, sidewalk or transit guideway. The width of the right-of-way limits how we use space for vehicles, bikes and pedestrians.

Transit-Oriented Development (TOD)

TOD is a development pattern that includes a mixture of housing, office space, retail space and/or other amenities. It is integrated into a walkable neighborhood that is well connected with quality public transportation.

Transit Signal Priority (TSP)

TSP is a type of traffic signal technology that gives green light priority to buses, trains and streetcars, which allows public transit to bypass traffic congestion.

Sources and Additional Information

- 1 National Transit Database, U.S. Department of Transportation (2016). *Uses of Capital Time Series Data* [data file]
- 2 American Public Transportation Association (2014). *Economic Impact of Public Transportation Investment: 2014 Update*
- 3 United States Bureau of Labor Statistics (2017)
- 4 Mineta Transportation Institute (2015). *The Benefits of Transit in the United States: A Review and Analysis of Benefit-Cost Studies*
- 5 INRIX and the Texas A&M Research Institute (2015). *2015 Urban Mobility Scorecard* [Available from mobility.tamu.edu]

Want to learn more?

Go to www.projectconnect.com to read more about the work we're doing through Project Connect.

Tell us what you think, take the Step 2 Survey!

<https://www.capmetroengage.org/en/provide-input>

Additional Project Connect briefing books:

Investments program briefing book and project flip books

Enhancement program briefing book and project flip books

Project Connect funding and financing briefing book





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N NELSON
NYGAARD

ALLIANCE



