

Equity in Transit: 2021

Transit for Living



**LINK
HOUSTON**

Thank you, community co-researchers & volunteers!

LINK Houston gratefully acknowledges the important leadership and contribution of each of the following community researchers in the Community Research Team (in alphabetical order).

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Dr. Rosalyn Francis	J. Allen Provost
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Michelle Johnson	Lupita Talley
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LINK Houston also thanks the following volunteers who joined our staff interviewing bus riders in the August heat or assisted in other ways:

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Robin Holzer	Alejandra Valdez
Steven Kochvar	Kenneth Williams
James Llamas	

** Willing to volunteer but weather and/or COVID surge forced cancellation*

Thank you to each and every bus rider. Most of you accepted the invitation to share your experience and opinions. LINK Houston and the Community Research Team deeply appreciate your candid responses and hope the report spurs and supports pursuing the bus service improvements you seek.

Anonymous Bus Rider Quotes

The report contains many anonymous quotes to emphasize the opinions and experiences of bus riders. The personal quotes originate from survey interviews of bus riders in 6 case study communities in northeast Houston.

Use of Terms

This report avoids the use of technical terminology as much as possible. Figures and tables enhance concise narrative. Direct questions to LINK Houston: linkhouston.org.

LINK HOUSTON

LINK Houston is a 501(c) (3) nonprofit organization that advocates for a robust and equitable transportation network so that all people can reach opportunity. We envision a world in which all people in Houston can easily access not only jobs but also educational experiences, medical appointments, grocery stores, greenspace, and other important destinations, regardless of their income or mode of transportation. To make that vision a reality, we support transformative and inclusive policies, systems, initiatives, and infrastructure development that connect people to opportunity by transit, walking, rolling (i.e., for people with a disability affecting mobility), and biking. We move ideas into action through community engagement, research, and shaping public policy.

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DISCLAIMER

LINK Houston is responsible for the facts and accuracy of Equity in Transit: 2021. The contents rely on current information; sources are cited. Hyperlinks connect readers to key sources, including the Equity in Transit reports from [2018](#) and [2020](#).



Executive Summary

Public transit plays a central role in connecting people to jobs, education, health care and many other opportunities. *Equity in Transit: 2021* combines data analysis and riders' experiences collected through the 2021 Houston Bus Rider Survey. The report explores how transit has, and should, connect people to opportunity in Houston, with a particular focus on 6 communities of color in northeast Houston. The report aims to build on previous editions of LINK Houston's Equity in Transit studies by influencing both infrastructure improvements and bus service quality improvements for the Metropolitan Transit Authority of Harris County, TX (METRO). Drawing on this analysis, transit riders and advocates can continue to hold transit decision-makers accountable.

Nearly 4.6 million people live in the METRO service area, of which 3.2 million are people of color. The 2021 Transportation Equity Demand Index (TEDI) found 891,000 people live in high-demand areas with inordinately high rates of:

- Poverty (23% of households vs. 11% in all other areas)
- Households with no vehicle (11% of households vs. 4% in all other areas)
- People using primarily transit to access work (5% of employed people vs. 2% in all other areas)

The 3 areas combine for a year-on-year increase of 24,000 people and 4-square miles, demonstrating many Houstonians need affordable transportation to safely and reliably reach opportunity with dignity.

The COVID-19 pandemic continues to pose economic, social, and health challenges on individuals and families across the Houston region. The report analysis indicates ridership on local bus and rail never dipped below 43% of normal ridership during the pandemic and was back up to 58% in August 2021. Per the 2021 Houston Bus Rider Survey, bus riders in northeast Houston expressed clear expectations for bus service to return in full force and be further improved in a variety of ways. LINK Houston and the northeast Houston community research team make recommendations for infrastructure and physical improvement (improving people's opportunity to reach stops and wait, see Table ES-1) as well as service quality improvement (improving people's opportunity to reach destinations, see Table ES-2 on the next page).

The process to implement recommendations is as important as the outcome. Full and consistent inclusion of active riders and community residents in decision-making is imperative for specific equitable improvements to occur and systemic change to result. LINK Houston urges METRO and stakeholders to continue to prioritize investments in TEDI high-demand areas (see Figure ES-1) and seeks continued opportunities to support communities through education and collaborative action.

"The bus gets me to where I need to be, otherwise I would be walking or biking too far. I am glad for METRO; I depend on it."

"We need buses. This is our livelihood."

"I ride the bus every day. I don't have to drive! That's a key factor. In these times, no one wants to drive. Those people are crazy."

Houston Bus Riders

Table ES-1. Summary of Recommendations for Infrastructure and Physical Improvement.

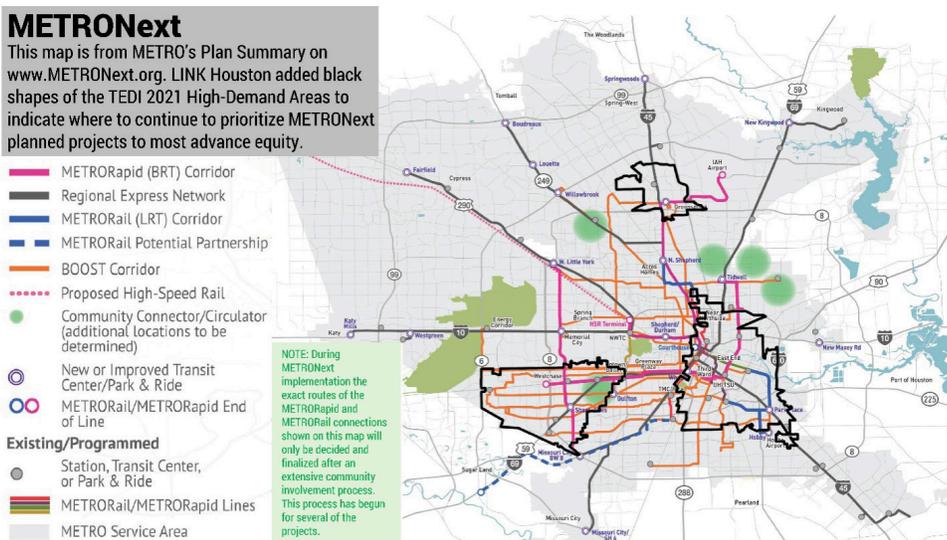
METRO Wide Recommendation	Northeast Houston Highlights
<p>Further Universally Accessible Transit METRO must continue the universal accessibility effort.</p>	<p>Bus operators should consistently kneel the bus (i.e., lower the bus) for riders and graciously wait for people to get in their seat. Fellow riders should promptly clear disability seats if asked.</p>
<p>Enhance Practical Access to Transit Stops METRO and governments must coordinate efforts to improve and enhance safe access to transit stops.</p>	<p>Local governments must take the lead to create more and better sidewalks and bikeways and opportunities to safely cross at street intersections. METRO must take the lead to create more or closer transit stops to reduce the distance and time required to ride transit.</p>
<p>Create Comfortable and Green Transit Stops METRO should reevaluate the process for how bus stops qualify for necessities and make more stops comfortable, functional, and green to improve bus rider experience.</p>	<p>METRO must take the lead to create more shade at stops, provide seating, install trash bins, and maintain all elements. Local governments must maintain stormwater drainage to prevent standing water next to bus stops and install sufficient street lighting.</p>

Table ES-2. Summary of Recommendations for Service Quality Improvement.

METRO Wide Recommendation	Northeast Houston Context
<p>Restore and Add Frequency METRO should fully restore the frequency of transit and prioritize METRONext implementation of projects involving the local bus network.</p>	<p>METRO should return all routes to pre-COVID frequency and convert all 60-minute frequency routes to 30-minute routes. The agency should study how to expand frequency within northeast Houston. Residents and active bus riders should direct and inform the agency's work.</p>
<p>Extend Span of Service METRO should study and plan to strategically extend service hours on routes connecting essential workers to extended-hour activity centers.</p>	<p>METRO should build on their implementation of the Kashmere Late-Night Connector by creating some level of 24-hour service, such as on routes 6, 26, and 36—and then market the new services to riders.</p>
<p>Improve Reliability METRO should focus on making real-time information consistently available and accurate.</p>	<p>METRO should place real-time information at many more bus stops, including at all transit center bus pull-ups, and update all posted information at stops.</p>
<p>Enhance Customer Service and Safety METRO should improve customer service and enhance mechanisms for safety at transit stops.</p>	<p>METRO should review 2021 Houston Bus Rider Survey findings to identify concerns to address, such as: expanding charging; improving customer service; and providing for safer waiting through better lighting and coordinating a response to crime, stray dogs, and non-riders hanging around stops with local government partners.</p>
<p>Expand Transit Network Coverage METRO should explore opportunities to expand public transit service in northeast Houston.</p>	<p>METRO should study how to expand access to, from, and within northeast Houston. (This could be part of a frequency study.)</p>

Note: LINK Houston invites anyone to share ideas and concerns about transit improvements. Perhaps opportunities exist to partner or to study a recommendation in a future year.

Figure ES-1. METRONext and 2021 TEDI High-Demand Areas.



Note: www.METRONext.org contains a complete summary of each METRONext plan element listed in the legend in Figure ES-1. This report and related information are available on LINKHouston.org by searching for "Equity in Transit: 2021." The webpage also includes an interactive 2021 StoryMap summary, the 2021 Executive Summary in Spanish, and links to access Transportation Equity Demand Index (TEDI) data and how-to in both Excel spreadsheet and ArcGIS geodatabase formats.

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Introduction

Equity in Transit: 2021 examines how to improve the Metropolitan Transit Authority of Harris County, TX (METRO) services, especially for people who ride local bus routes. Feedback from the 2021 Houston Bus Riders Survey complements quantitative data in the updated Transportation Equity Demand Index (TEDI), a metric developed by LINK Houston in [2018](#). This report documents findings and makes general recommendations for METRO and partners and specific recommendations for 6 case study neighborhoods in northeast Houston.

In summer 2021, LINK Houston partnered with leaders, residents, and bus riders in 6 northeast Houston neighborhoods on a community-based participatory research process. The 6 communities are predominately home to African American or Black (Black), Hispanic or Latinx (Latin American), or other people of color who seek higher quality infrastructure and bus services, in part to address inequities due to past and present structural racism and economic marginalization. Staff convened a team of community researchers to develop and implement the 2021 Houston Bus Rider Survey. Staff and volunteers canvassed bus riders to understand how to improve their experience reaching their bus stops, how to improve the bus stop itself, and how to make bus service better.

The [2020](#) report documented how METRO incorporated LINK Houston's 2018 recommendations into the agency's METRONext long-range plan that received 68% voter support in November 2019. The 2021 edition aims to build on those reports by influencing both infrastructure improvements and bus service quality improvements. Drawing on this analysis, transit riders and advocates can continue to hold transit decision-makers accountable.

Centering Equity and Climate Justice

According to the City of Houston's Climate Action Plan, released in April of 2020, transportation accounts for 47% of the city's greenhouse gas emissions. The plan proposes a shift to electric vehicles and a reduction of vehicle miles traveled to reduce greenhouse gas emissions by 2050. The strong emphasis toward the adoption of electric vehicles fails to address significant barriers for communities of color and low-income communities to gain access to electric vehicles, from the costly purchase price for a new vehicle to the challenge of charging a vehicle (such as charging at rental properties and at jobs held by low-to-moderate wage workers). Reducing vehicle miles traveled per capita will be necessary to address climate change and requires behavior change: a reduction of miles driven in single-occupancy vehicles, increased access to low- or no-emissions transportation options, and better alignment of affordable housing with walk, roll, bike, and transit travel options.

Centering equity and climate justice to advance resilience and prosperity requires transportation decision-makers and advocates to listen to current bus riders about their experiences, ideas, and aspirations—and then to work together to develop solutions. Some level of demand for equitable mobility exists everywhere. Transit advances equity and climate justice when it exists in strategic places and provides a quality travel option.

Nearly 4.6 million people live in the METRO service area, of which 3.2 million are people of color. Many people need deeply affordable transportation to practically, safely, and reliably reach opportunity with dignity:

- 217,000 households live in poverty
- 310,000 households have one or more persons with a disability
- 92,000 households have no vehicle access
- 57,000 people commute primarily by transit
- 431,000 jobs pay less than \$15,000 annually.

Equity in transit is fair and just distribution of benefits and burdens of transit services and infrastructure across communities.

Climate justice addresses disproportionate political and socio-economic impacts of climate change on communities of color and low-income communities.

2021 Highlights

FEB 2021

East End District Adopts Resolution Supporting Equity in Transit

In February 2021, the East End District hosted a virtual meeting with their peer business management districts and tax increment reinvestment zones (TIRZs) to discuss equity in transit. Staff and board members from many organizations participated. LINK Houston presented and helped to facilitate discussion. East End District staff, led by Veronica Chapa Gorczynski, followed up the meeting by working with their Board of Directors on a formal resolution supporting Equity in Transit: 2020. The East End District's Board unanimously adopted the resolution in May 2021:

"The District expresses its support for LINK Houston's recommendations in Equity in Transit: 2020 report: namely, to strategically increase transit frequency, expand evening service hours, and invest in infrastructure that improves transit service reliability and universal accessibility. The District further expresses a renewed commitment to include equity as a pillar underlying our work, including our planning and infrastructure investments to spur and support economic development in our jurisdiction."

LINK Houston appreciates the East End District's support in furthering equity in and through better walking, rolling, biking, and transit.

[East End District's May 2021 Meeting Minutes](#)

[Resolution Text](#)



SPRING 2021



Inner Katy Bus Rapid Transit (BRT)

In Spring 2021, METRO held virtual public meetings for the Inner Katy BRT line. The service will connect downtown Houston to the Northwest Transit Center as well as existing light rail lines and the Uptown BRT for a more complete network.

[Learn More](#)

"I can't complain; even during pandemic things were great; things are manageable; can manage time with the app."

"I appreciate METRO's efforts on sanitation during the pandemic."

"They give free PPE. METRO is top for me in the U.S. I've been to many cities."

Rider's Remarks about Transit During the Continuing Pandemic



AUG 2021

NEW! METRO Route 309 Gulfton Circulator

In August 2021, METRO launched the Route 309 Gulfton Circulator. The 309 is a new bus route connecting residents to key destinations in the area, as well as offering transfer opportunities at transit centers, other bus routes, and the METRORapid Silver Line. LINK Houston spent several years advocating alongside Gulfton residents, who themselves identified a need for such a service, helping to bring community members and decision-makers to the same table.

- See the [route and schedule information](#) (English and Spanish).
- See a [video](#) interview with Sandra Rodriguez, Gulfton Super Neighborhood President.
- [Hear](#) or [read](#) METRO's The Next Stop podcast, episode 38, "Introducing the Gulfton Circulator," featuring Sandra Rodriguez and Jim Archer.



"I am extremely excited to have this Gulfton Circulator finally become a reality. We really started off back in 2017 when...selected as a pilot neighborhood for [Mayor Turner's] Complete Communities Initiative. ... I remember growing up when we had a special route that went around Gulfton. ... Gulfton has grown tremendously... This particular route will...provide connections to opportunity. ... A lot of our families don't have a vehicle, or there is only one vehicle in the household. We have more than one family that resides in one unit, and so, we...travel by foot...we ride our bicycles, and we utilize public transit. ... Having this connector will connect us. Just riding it right now, I saw that it can connect me to a variety of grocery stores, where before I had to take maybe two bus routes—a longer time, you know, traveling, when I could be spending time on other things with my family instead of, you know, spending time traveling. This one bus route will get me to where I need to get to. ...

We want to create a welcoming neighborhood for our community members, especially for newcomers who are fleeing countries where there's war. There's violence. There's poverty, and they're dealing with trauma. ... We can create environments where, you know, you are welcome here, and here are the opportunities for you to advance and to build a thriving community and a successful life for your family."

(Source: Episode 38, The Next Stop podcast by METRO, [listen](#) or [read](#) the full piece)

Sandra Rodriguez
Gulfton Super Neighborhood President

"It's been a collaborative effort. And one of the neat things about it is this is something that has involved not only the Gulfton Super Neighborhood but stakeholders in the area and METRO staff. And we have been meeting together and discussing options basically over the past two years, which has given both sides a new understanding of what is needed. The Gulfton residents have had a better understanding of transit and what we can do. And we've had a better understanding as Service Planners of what the options are and how they can help the community. ...

The community has been very helpful and working with us on this particular project. They have done yeoman's work in terms of allowing us the opportunity to explain options, to develop options, and then to come back and have some real good opportunity for discussion."

(Source: Episode 38, The Next Stop podcast by METRO, [listen](#) or [read](#) the full piece)

Jim Archer
METRO Director of Service Planning



METRO Electric Bus and Climate Action Plan Commitments

In August 2021, METRO adopted the agency’s first Sustainability Vision Statement and committed to developing an agency Climate Action Plan, including transitioning its fleet to electric vehicles by 2030.

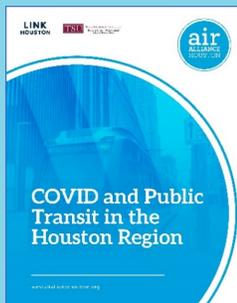
[Learn More](#)

Report Released: COVID and Public Transit in the Houston Region

By Air Alliance Houston, Texas Southern University, and LINK Houston

Focus group conversations with residents and transit riders in three communities of color in Houston revealed many people continued to rely on public transit to access jobs and essential services throughout the pandemic, while other riders “stopped using public transportation during the pandemic out of fear of exposure to the virus.” The report highlights respondents’ positive view of public transit in general and demonstrates the need for additional investments and improvement. In 2021, as in 2020, METRO continued to find ways to safely sustain services, especially local bus, and light rail, while gradually moving more routes nearer pre-pandemic service frequency.

[Get the Report](#)



EPA Funded Emerging Mobility Plan in Southwest Houston

The Environmental Protection Agency selected the Five Corners Improvement District, and the district’s partners, as one of only six grant recipients in 2021, resulting in the federal agency’s assistance to develop an emerging mobility plan. The District, and their partners, invited LINK Houston to be one of a select few non-profit organizations to partner with the communities. The complete plan was released publicly on November 18, 2021. Five Corners Improvement District’s Business and Economic Development Committee Chair noted in the Houston Chronicle that the District, “went into it just wanting to bring good to our community. The process allowed us to think through some of the key issues that we face here in the community, and we are again very pleased that we were one of six selected throughout the country.” LINK Houston looks forward to continuing to help the community partners pursue their ambitions for their communities – especially for improving education and infrastructure for people walking, rolling, biking, and riding transit.



Persistent Demand for Equity

This section briefly overviews transit service and ridership in Houston and presents findings about where demand for equity and climate justice in transit remains high.

Transit in Houston

Equity in Transit: 2021 focuses on local bus routes operated by METRO. Harris County Transit also operates several fixed routes, a few of which have transfers to/from METRO routes but are not included in this report. Local bus service is the backbone of the region’s affordable transportation network (Figure 1). Most transit riders walk, roll, or bike to and from transit. The quality of the sidewalk and bikeway networks is critical for safe, practical, and dignified access to opportunity via transit—more than 90% of all transit trips begin or end with a walk.

At the height of the COVID-19 lockdowns in May 2020, about 35% of people reported working from home, which means 65% of workers continued to physically travel to employment. People of color disproportionately continued working in-person, and 87% of workers with a high school diploma or less continued working in-person.¹ Ridership on local bus and light rail never dipped below 43% of normal ridership during the height of the three significant COVID-19 spikes in 2020 and 2021. Ridership in September 2021 increased back to 58% of the pre-pandemic level from September 2019, a clear indicator of the significant role local transit plays in connecting essential workers to jobs and the vital nature of many other trips (Figure 2).

At the time of report, service frequency remains below pre-COVID levels. As METRO continues to implement further service changes, the agency must consider expanding service during both peak hours and nontraditional work hours.

Figure 1. METRO’s Fixed Route Transit Network.

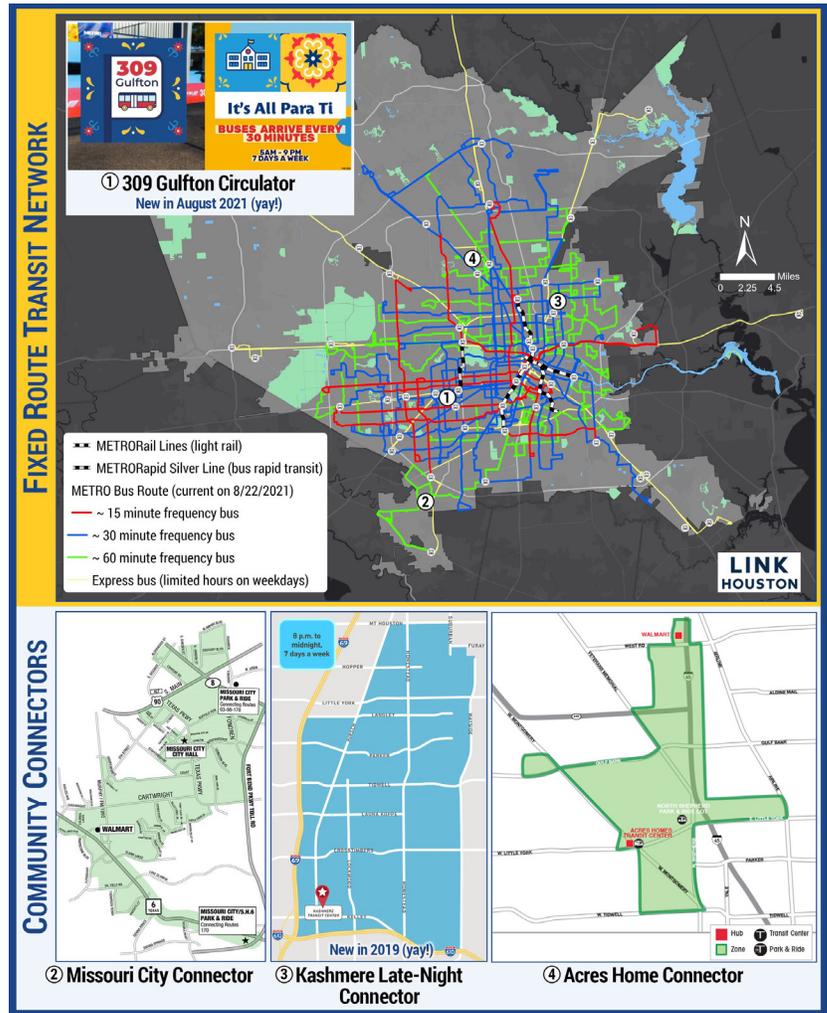
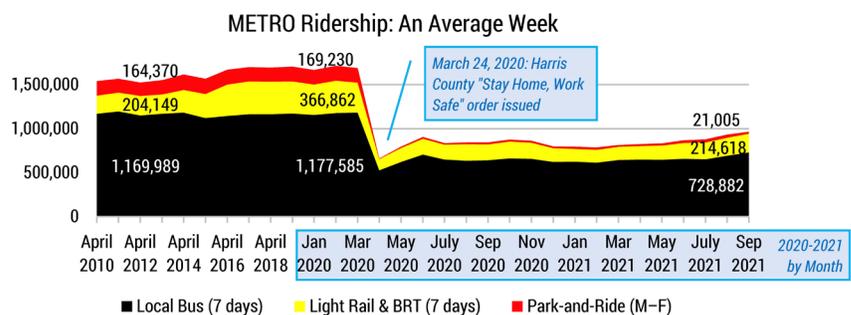


Figure 2. Transit Ridership, 2010 to Present.

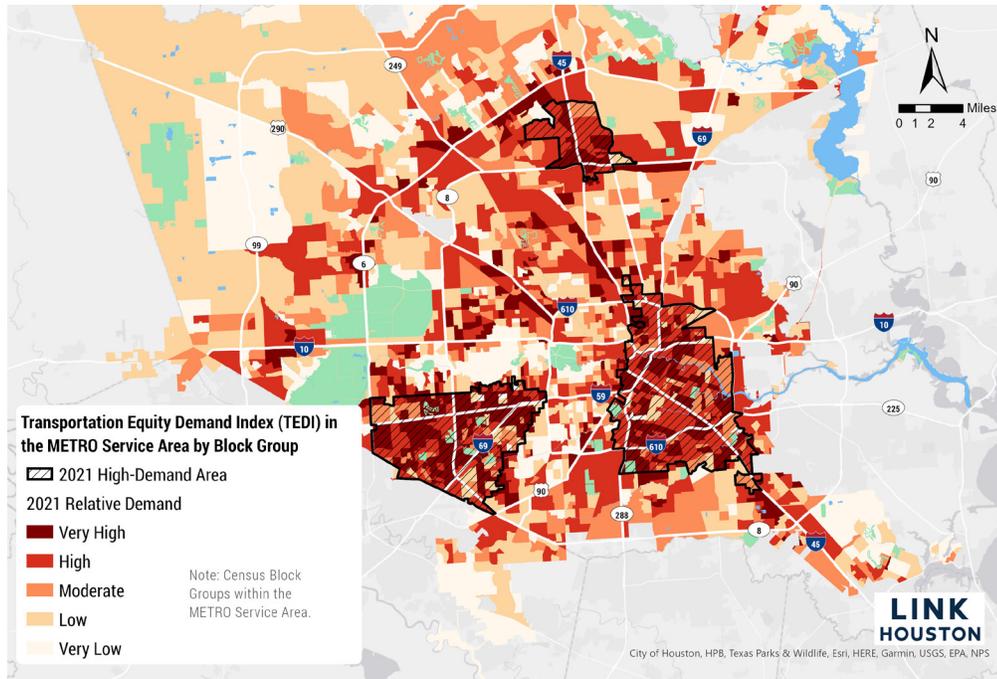


1 Table 1. Employed persons who teleworked or worked at home for pay at any time in the last 4 weeks because of the coronavirus pandemic by selected characteristics (May 2020). U.S. Bureau of Labor Statistics. www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm.

Transportation Equity Demand Index 2021

Transportation Equity Demand Index (TEDI), comprised of 15 indicators, covers aspects of both personal and community equity. LINK Houston created the index in 2018 to identify locations for more equitable transit investments by measuring fundamental demographic demand, likely high-transit use, and human- and built-environment feasibility (i.e., people density, jobs density, and walkable street network).

Figure 3. TEDI 2021, Result and Updated High-Demand Areas.



The three 2021 high-demand areas cover 143 square miles and are home to 891,000 people, an increase of four-square miles and 24,000 people from 2020.

- Eastern and southeastern area of Houston
- Southwest area of Houston
- Greater Greenspoint in north area of Houston

The Transportation Equity Demand Index (TEDI), composed of fifteen indicators, covers aspects of both personal and community equity. LINK Houston created the index in 2018 to identify locations for more equitable transit investments by measuring fundamental demographic demand, likely high-transit use, and human and built environment feasibility (i.e., people density, jobs density, and walkable street network).

LINK Houston updates the TEDI each year using the same methodology as before but utilizing the most current data sources. The TEDI in Figure 3 shows where people most seek affordable transportation options offering safe, efficient, and dignified access to and from Houston’s opportunities – three high-demand areas persist.

Three high-demand areas include inordinately high rates of:

- Poverty (23% of households vs. 11% in all other areas)
- Households with no vehicle (11% of households vs. 4% in all other areas)
- People using primarily transit to access work (5% of employed people vs. 2% in all other areas)

Importantly, high-demand areas represent environments conducive to operating quality transit due to higher population density and more walkable street networks. In 2021, 88% of residents inside high-demand areas are people of color (eastern and southeastern area of Houston: 89%, southwest area of Houston: 87%, greater Greenspoint: 94%), whereas 65% of all other parts of METRO’s service are people of color.

The [appendix](#) contains more information about TEDI methodology and results by Houston Super Neighborhood.

Northeast Houston – A Case Study

LINK Houston worked alongside community members to conduct a survey of active bus riders in 6 northeast Houston neighborhoods (Figure 4). The neighborhoods are the most northeastern area of Houston with local bus fixed route service and are home to predominately Black or African American (Black) and Hispanic or Latinx (Latin American) populations. Portions of each community have pronounced demand for equity based on TEDI analysis; the southwestern extent of the case study area was inside the 2020 TEDI high-demand area, and a slightly larger portion is inside the 2021 high-demand area. Compared to METRO-at-large, bus riders in northeast Houston persisted traveling on the bus during COVID-19 at higher rates: ridership in April 2020 was 50% of April 2019 (compared to 43% on bus system-wide).

“Travelers originating in the northeast portion of the METRO service area appear to fare worst after the 2015 service change. Side-by-side comparisons of the before and after service maps reveal that frequencies were likely reduced in those locations, both during the weekday peak and on the weekend.”

Dr. Alex Karner

The University of Texas at Austin, recently studied METRO’s 2015 System Reimagining (Provided via email)

Figure 4. Six Focus Communities for 2021.

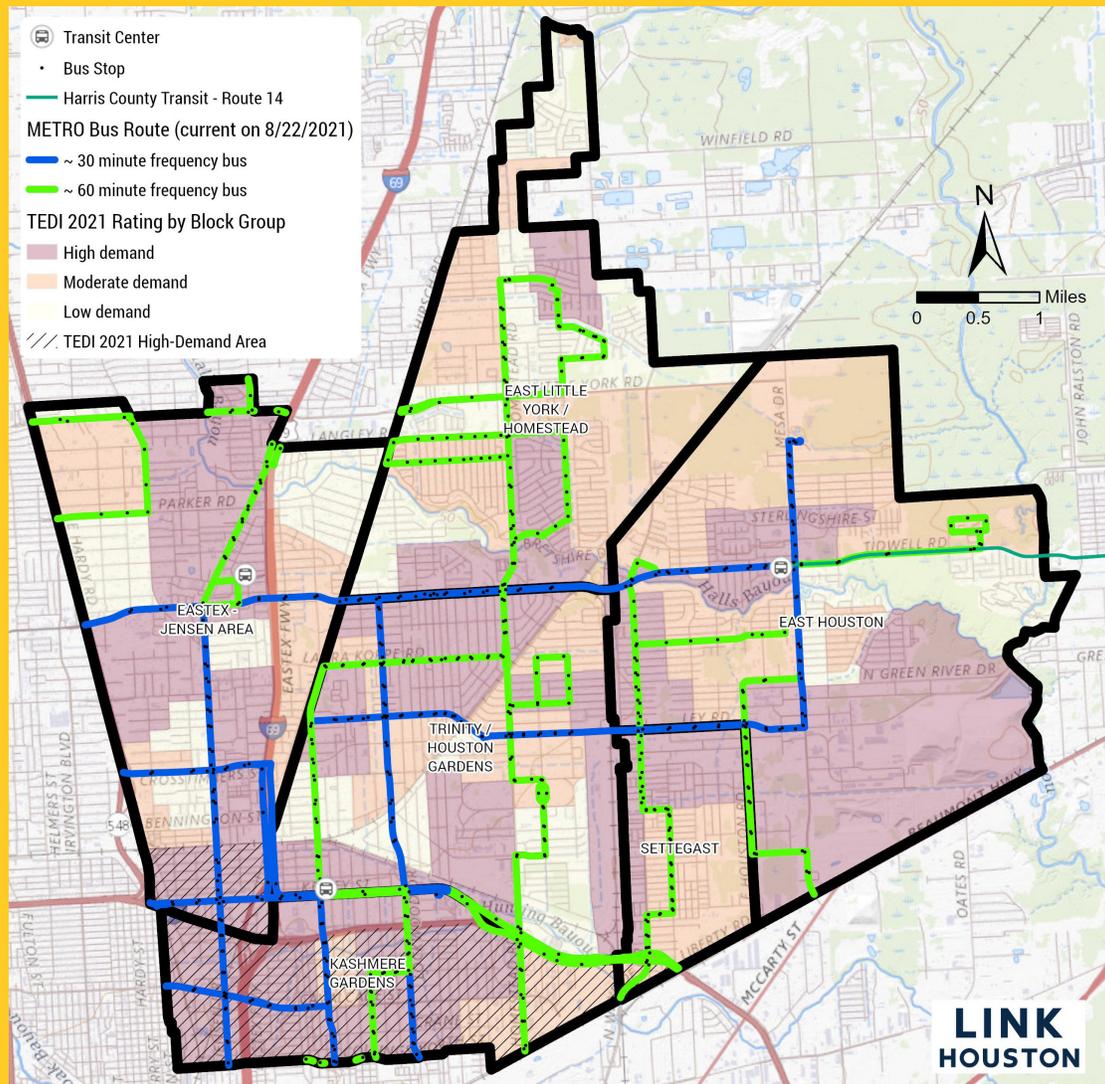
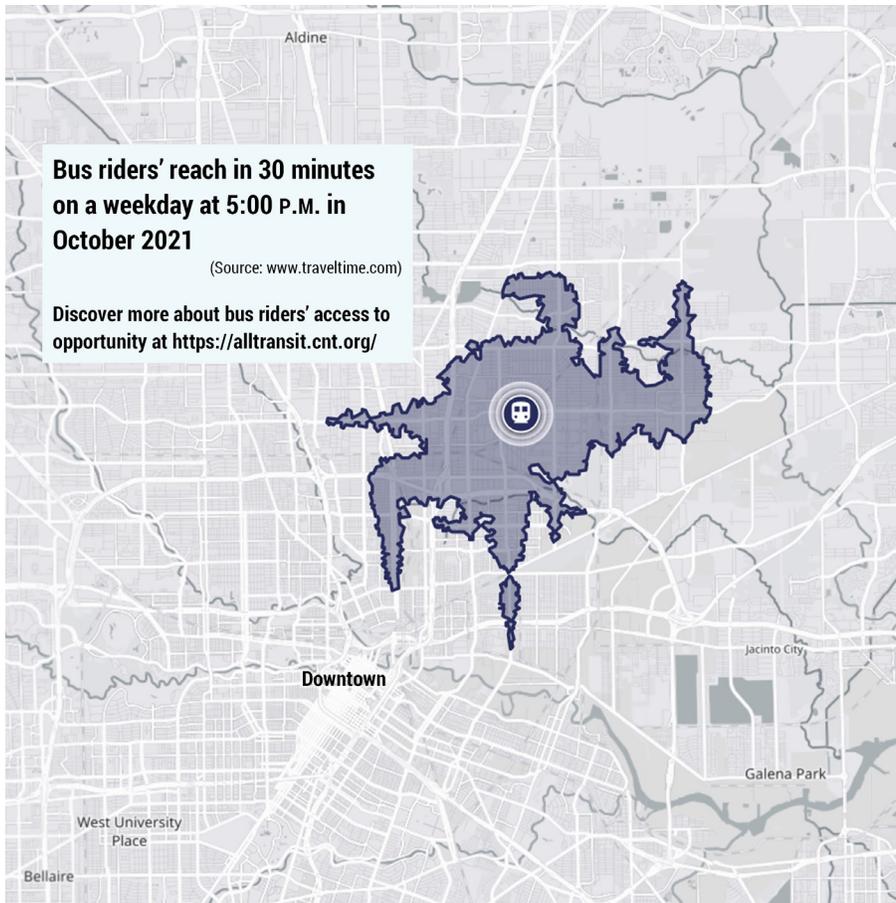


Figure 5. Destinations Reachable by Bus in 30 minutes.



A diverse group of riders participated and shared a wide range of remarks about what works now and how transit should be better in their community and in Houston.

- 77% of riders were age 18 to 64 and 23% were 65+
- 5% of riders participated in Spanish
- 4% of riders were using a bike and 3% were using a wheelchair or other type of mobility aid
- 89% of riders were people of color: 75% Black, 10% Latin-American, 4% Asian, another race, or two or more races/ethnicities
- 64% of riders were male, 36% were female, and <1% were non-binary or another gender

Residents in the study area have been organizing for many years to address issues related to Hurricane Harvey recovery, food insecurity, healthcare, access to jobs, and infrastructure. When METRO “Reimagined” the bus network in 2015, northeast Houston communities lost vital bus service. The new bus routes covered a similar area of the communities, and a few routes went from 60- to 30-minute frequency, but the communities lost the two 15-minute frequency routes connecting beyond the Kashmere Transit Center. The changes in bus routes may have contributed to the 25% decline in ridership in the communities from 2013 (two years before the redesign) to 2019 (before the pandemic). Since then, residents have advocated for improvements to address connectivity and access to opportunity. Figure 5 illustrates bus riders’ access to opportunity in 30 minutes at peak evening hours. Throughout 2019, LINK Houston partnered with residents for ride-alongs to better understand existing public transit needs and support community members as they pushed for improvements. The advocacy efforts resulted in the Kashmere Late-Night Connector, extension of the Route 3, and service improvements for better access to Patrick Henry Middle School.

While some services improved over the last 3 years, a need for affordable transportation persists, and residents actively continue to advocate for improvements. The Kashmere Late-Night Connector, for example, currently has low ridership. Residents noted that while the pandemic plays a role in the ridership level, METRO should better market the service to the community to raise awareness. Additionally, residents look forward to new Bus Rapid Transit (BRT) in the communities and expect to engage with METRO and stakeholders

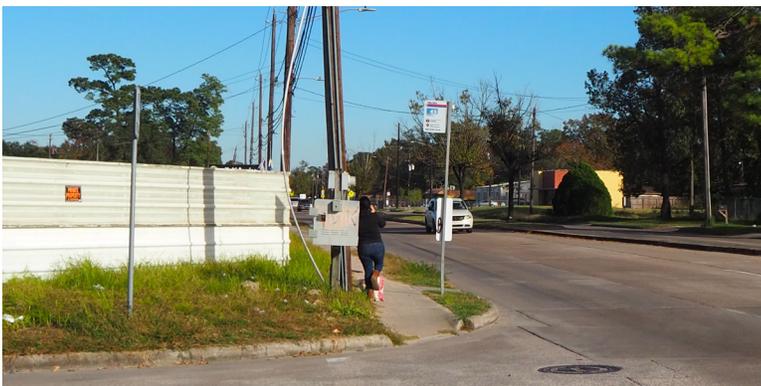
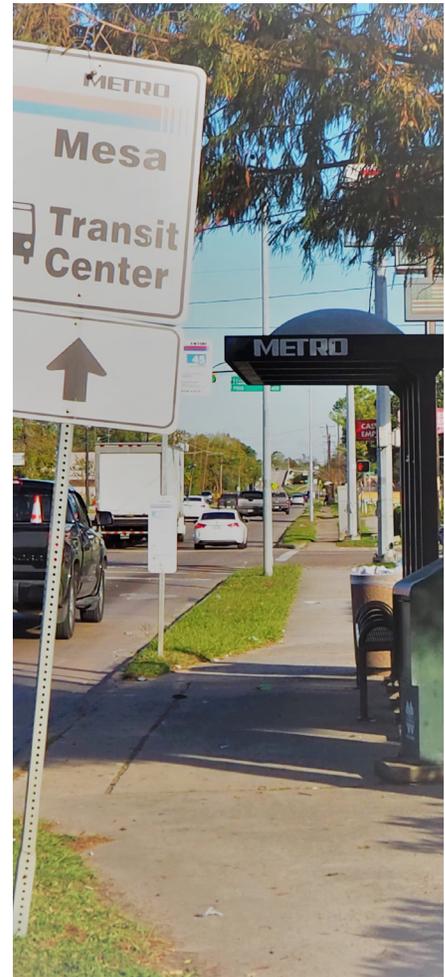
in the overall planning process to ensure any new or improved services truly work for people's needs.

The team of 11 community members collaborated to develop the 2021 Houston Bus Rider Survey. The group worked from a blank slate to develop the complete interview form containing 10 core questions and 3 "about you" questions. Open-ended questions included:

- What would make your experience getting to your bus stops better?
- How would you like your bus stops to be better?
- How could the bus service be better?

LINK Houston staff and volunteers interviewed riders across all 6 neighborhoods at transit centers and bus stops served by the 14 bus routes operating in the communities. Participation was entirely voluntary, and most riders were glad to share their experiences and opinions. The LINK Houston team and volunteers conducted the interviews in Spanish and English, and all survey materials were available in English and Spanish per community team direction. LINK Houston staff also developed a postcard in English and Spanish as a leave-behind for riders with too little time to participate in-person. Residents were also welcome to complete the survey online, which was also available in both languages as well as screen-reader accessible for people with a disability. The appendix contains the survey materials.

Twelve people responded online and 136 people participated in an interview—148 total responses. Interviews began on August 5, 2021, and wrapped up sooner than planned on August 19, 2021, due to the increasing health risks from the Delta variant of COVID-19. Seventy riders shared contact information so LINK Houston can continue to be a resource.



History and Experience on the Bus

How Often Riders Use the Bus

Most riders use the bus 5+ days a week. Riders in Eastex Jensen rode most frequently and riders in East Houston rode least frequently—but still generally frequent. Latin American riders use the bus most frequently, followed by Black, and then White riders. Frequent riders tend to also have a longer history of using the bus. How often a rider rides is not closely related to satisfaction with the service.



67% 5+ days per week
18% 2-4 days per week
15% 1 day per week or less

Riders' History Using the Bus

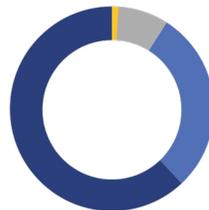
Most riders have been riding for 5+ years in all 6 neighborhoods. Older riders age 65+ also have longer history using the bus. People of color riders, especially Black riders, have a longer history of bus ridership than White riders. Long-time riders utilize the bus more frequently.



66% More than 5 years
17% 1-5 years
14% Less than 1 year
15% Today is my 1st trip

Importance of Bus Service for Riders Reaching Places They Need to Go

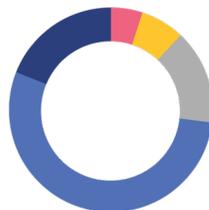
Bus service is important or absolutely essential to most riders, most especially so in Settegast. Bus service is especially essential for riders aged 18 to 64. Bus service is especially essential for frequent riders, and doubly so for frequent riders with a long history using METRO.



62% Absolutely Essential
29% High Importance
8% Average Importance
15% Low importance

Satisfaction with the Bus

On average and regardless of neighborhood, riders were generally satisfied with the quality of bus service. Satisfaction with current services varied little by age, race/ethnicity, or length of history using METRO. Generally, female riders were less satisfied than male riders; riders' comments noted the reasons why.



19% Very satisfied
54% Satisfied
15% Neutral
7% Dissatisfied
5% Very Dissatisfied



What Riders Liked about Using the Bus; What Works Well

Many riders remarked on what they like about riding the bus or commented about what works well. The following quotes illustrate opinions about METRO and bus service:



I have ridden the bus all my life. Without the bus you are stuck.



The bus is my car, it gets me where I want to go, on time.

The bus is convenient, and you learn about the city, about Houston.



I do not speak English, but I have never felt racism on the bus in Houston. I have always been treated with respect. [rider mentioned this was not their experience in other cities]



I am satisfied with the weekday service, but not satisfied with weekend service. I have used the bus all my life. I'm a rider. I ride for all kinds of my trips. I like the bus because I have independence, to/from work, and can get the schedule on my phone. I love it.



The bus saves me having to drive. I like the bus. I like meeting new people [while riding the bus], it is nice.

Note: Quotes are associated with a generic depiction of a person and do not correlate strictly to the personal characteristics of the rider who made the comment.

Transit for Better Living

What would make your experience getting to your bus stops better?

When asked the above open-ended question, 83 riders shared one or several comments. The top 3 ways to improve riders' experience reaching their stops:



1. More or better sidewalks and intersections, including accessibility



Black riders preferred more or better sidewalks and intersections

"We need universally accessible and complete sidewalks - and more shade."

"[We need] sidewalks - I have to walk on the street."

2. More or closer stops to reduce the distance and time



Latin American riders preferred more or closer stops. In general, people of color riders were more likely than White riders to desire more or closer bus stops. Infrequent riders also preferred more or closer stops.

"I would like to see some bus stops closer to me. I use Harris County Transit to connect to METRO."

"I have to walk about a mile when I get off the bus."

3. More lighting along the route



Female riders expressed strong preference for more lighting along their routes to bus stops, as did long-time riders.

"Adjusting light at certain stops and ensure street crossing lights are working [i.e., pedestrian signals and overhead lighting at intersections]"

"[I would like] more lights along the route I walk to get to the bus."

A handful of riders using bikes in concert with the bus service specifically appreciated bike lanes and racks on all buses.

"I am able-bodied and can easily reach my stops, so not much of a problem. Bike lanes are helpful."

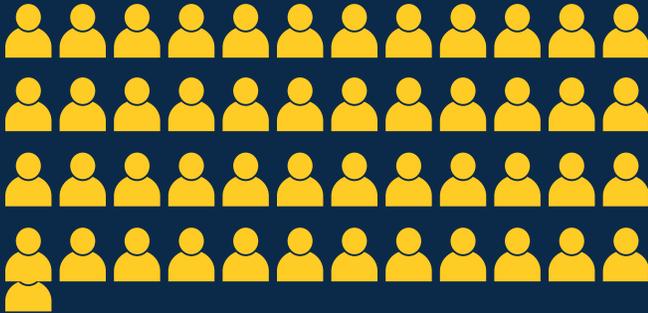
"The bike racks on the bus work great for me."

How would you like your bus stops to be better?

When asked the above open-ended question, 115 riders shared one or several comments. The top 3 ways to physically improve bus stops:



1. More shade, such as through shelters or trees



"All bus stops should have shelters, cement to stand on, and seating - it is just too hot and too cold otherwise."

"I need more shade, cover and seating; overhead cover is a priority. Seating is appreciated but sometimes it seems like seating interferes with someone in a wheelchair being able to wait too."

"I have noticed METRO taking some shelters away from bus stops, especially in northeast Houston along Tidwell. We need more shelters. I also think stops could be cleaner."

2. More seating



"I have children I pick-up at daycare, I would like there to be more seating."

"More shelters - and benches. I got a bad leg and can't stand too long."

"Shelters and seating where you can see the bus coming. Drivers don't always stop. You don't know."

3. Better maintenance, stop cleanliness



Young riders, people of color riders, female riders, and longtime riders all strongly preferred better stop maintenance.

"My bus stops are pretty good but could use an occasional pressure washing - especially the seats."

"It would be good if the trash bins were regularly serviced and there was better lighting at bus stops."

"Water sets in the gutter by some of my stops and cars splash it up on me, such is the case by the Walgreens on Lyons Ave."

Another frequently noted way to improve bus stops was providing for safer conditions (i.e., addressing crime and stray dogs).

A higher proportion of female riders requested better safety at stops.

"I would like more shelters and better lighting - sometimes it's too dark to wait at a stop after dark."

"I sometimes worry about stray dogs."

"I would like to see more METRO Police presence."

"I am often disgusted by other riders."

"It can be hard to trust other riders, especially at night."

Several riders also mentioned another important way to improve stops is better managing the presence of non-riders occupying shelters and seating (i.e., people sleeping or hanging out).

Riders in East Houston and East Little York / Homestead clearly preferred better managing the presence of non-riders at transit centers or stops with shelters.

"Sometimes there are people asleep on the bus stop benches and they stay all night and day. People are scared and don't sit down."

"I would like for stops to be safer; people tend to loiter at the stops."

Infrequent or new riders remarked on better information in the way of real-time signs, updated posters, etc.

"I like that METRO tells you where you are [while you are riding the bus]; the announcements of the upcoming stops. I only started riding 3 days ago because my car needs a new radiator."

"I like being able to now plan trips by using the bus stop number and getting by text when the bus will arrive."

"The wait information from the text number about real-time is not accurate."

Several riders expressed interest in restroom access.

"I would appreciate restrooms at transit centers. What do you mean there are no bathrooms?! It seems obvious people here need a bathroom. [Kashmere Transit Center]"

"We also need RESTROOMS at the transit centers where lots of people have to wait to transfer from one bus to another. Trips that need two buses can get long, especially if you're riding with your kids. Offering well-lit, well-designed, easy to maintain restrooms would enhance the dignity of traveling by bus."

How could the bus service be better?

The single highest priority of riders in each neighborhood:

- East Houston: more frequent service (~15 minutes)
- Settegast: more frequent service (~30 minutes)
- Kashmere Gardens: more on time, reliable service
- Trinity/Houston Gardens: more on time, reliable service
- East Little York/Homestead: more frequent service (~30 minutes)
- Eastex Jensen: tie between more frequent service (~30 minutes) and more on time, reliable service



When asked the above open-ended question, 123 riders shared one or several comments. The overall top ways to improve bus service schedules and service locations:

1. More frequency, 15-minute or at least 30-minute frequency



"Buses need to be more frequent; 60-minute off-peak frequency is ridiculous."

"The 97 bus is every hour; it should come at least every 30 minutes. Lots of guys trying to get to jobs. If the bus is early passed your stop, you have to wait. The 6 bus should be every 15 minutes."

"The 3 and 77 should be more frequent because an hour is too long; 30 minutes is good – if I had a magic wand. The 52 is my bus and it coming every 15-minutes is good."

2. More on time, reliable service



"I have a complaint with just one bus: the 40 going south. It's always late, and I always miss the next bus. The one between 5:20 and 6:00 pm is never there. They skip a whole cycle, and I miss my next bus. Every other bus is always on-time."

"Sometimes the bus is not on-time, perhaps a small circulator bus would help."

3. Better transfer experience



"Transfer timing between bus routes could be better; more frequent service would help."

"I have to leave an hour early, transferring between infrequent routes. Shopping at Walmart, sometimes the bus leaves early."

Many riders also mentioned later and/or earlier hours of operation, especially riders in four of the neighborhoods (e.g., East Houston, Settegast, Kashmere Gardens, Trinity / Houston Gardens, and East Little York / Homestead).

"Operations need to start earlier, sometimes I work earlier than the bus can get me to my job."

"We need more bus service on weekends. Lots of people work late on weekends, like midnight to 1 am. The 45 bus especially should run later. The 59 bus needs to come every 30 minutes, 60 minutes is too slow."

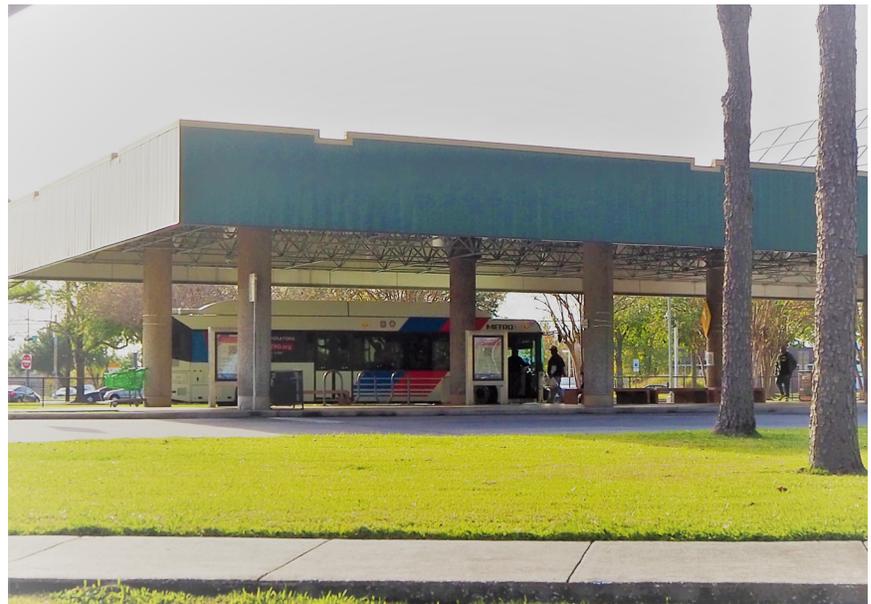
"METRO stops service too early. Some routes need to be 24-hour. Some riders get stuck, such as on the 3 and 77 buses, and wait overnight at their stop or walk a long ways."

Some riders identified ways to improve the experience of people with a disability.

"God, dawg! Let the thing down [bus kneel] so it will be easier for me to get on the bus."

"Some of the operators let the thing down [bus kneeling] to let you step on the bus and some don't. But they don't know who's handicapped! I have a disability card. The bus trip is fine."

"There should be permanently designated places for folks in wheelchairs to use on the bus - so people don't have to be asked to move and the person in the wheelchair does not feel like they are inconveniencing other riders."



Additional Ways to Improve Bus Service

Some riders noted locations where transit routes should extend (8 riders).

"I would really like METRO service to reach my neighborhood near Beltway 8 and US 90."

"I transfer between the 6, 45, and 78 bus routes. I would appreciate a more direct connection from Wayside to the 6 bus. The 45 bus should come earlier so I can meet the 78 bus because it is hourly."

"[I would like to see] a Bush Intercontinental Airport express bus beginning at the Kashmere Transit Center."

A few riders' comments remarked on specific ways to improve the onboard experience, such as by expanding the availability of WiFi, charging ports, and better enforcement of mask wearing due to COVID-19.

"We need more chargers (for devices) on the buses; seems like they put more of those on "nice" neighborhood buses."

"I appreciate the upgrades to some buses, like charging ports, WiFi, etc. We need that on more buses."

"Service animals are sometimes an issue so better training would be good."

"The Lost & Found system needs to be better. METRO should communicate with bus drivers about it too."

Many riders remarked on how bus operators treated them, noting both polite driver (13 riders) and rude driver (17 riders) interactions. Riders in three neighborhoods noted more pronounced negative rider-driver interactions (e.g., Kashmere Gardens, Trinity / Houston Gardens, and East Little York / Homestead). Riders reporting negative customer service experiences tended to be Black, frequent riders, and/or female riders.

"Some drivers have a bad attitude, like they are having a bad day: if you do not want to be serving the public...have a good vibe."

"Bus drivers can be rude and even flirty with customers."

"I have a disability...a non-obvious mental disability. Some drivers are not helpful and do not give me time to think and clearly express myself."

"When you [the driver] get on the bus, you got to be professional. Leave it at home. Take care of your personal business, be professional."

Several riders, primarily Black riders, described being passed by the bus while waiting at their stop (10 riders) – riders passed up by the bus were also likely to be dissatisfied with METRO bus service.

"At Lyons & Lockwood I am getting off work at 12:20 am and waiting for the bus and I am consistently passed by. I stand by the post. I am waving. The driver just passes by. I don't understand. Is this because sometimes there are homeless people around and they presume I am one? Why?"

"I am often left waiting at my bus stop as the bus passes; I don't understand why: this happens routinely to me on the 29 bus at my stop near I-45 North & Airline. I stand by the sign like I am supposed to."

"Bus drivers sometimes don't stop, they see you and don't stop."

A few riders mentioned the fare, with some riders saying the fare was a good amount as-is and other riders saying the fare should be lower or METRO should offer the occasional free ride. Two Latin-American riders (both longtime, frequent riders) expressed concern that some other riders are allowed to ride free and suggested METRO should enforce the fare for all riders.

"Should treat riders equally – everyone should pay."

"Take immediate action to consider fare exemptions for income-constrained people...It takes 2 weeks to get paid. Exemption for kids."

"There should be sliding scale fares based upon income and the federal poverty level. For some, such as the working poor, fares can be a burden."

"We need a true 24-hour day pass, one that is good until the same time the next day."

Among riders with an opinion about taking items onto the bus (e.g., bags, strollers, etc.), about two thirds expressed no concern and the other third noted room for improvement.

"We bring two carts; and most cases it works okay. It's alright with grandkids and groceries."

"You have to make sacrifices; the bus is not equipped to hold grocery sacks for you. It's only made for people in seats."

"There should be a space to store walkers and other similar equipment."

"It's very cumbersome for those who have groceries and need to take two or three buses to get to the grocery store."

"Need to have a limit so people don't bring too much."

Recommendations

Transit riders rely on METRO to provide a high-quality network of services with exceptional customer service. METRO relies on state and local government partners to improve and maintain the street network (including sidewalks and bikeways) and operate traffic signals (for people and vehicles)—both vital to timely, comfortable, and safe transit trips. Transportation improvement projects happen at state, regional, and community levels, but all create burdens or benefits in effected communities and must leverage opportunities to improve outcomes locally—especially for people relying on the affordable walk, roll, bike, and transit network.

The following sections summarize the status of recommendations in *Equity in Transit 2018* and *2020* and put forward additional recommendations specifically to improve transit in the case study northeast Houston neighborhoods. A simple 3 classification rating system summarizes each recommendation’s status (Figure 6).

Two Types of Recommendations

- **Recommendations for Infrastructure & Physical Improvement**
(i.e., improving people’s opportunity to reach stops and wait)
- **Recommendations for Service Quality Improvement**
(i.e., improving people’s opportunity to reach destinations)

The process to implement recommendations is important as the outcome. Full and consistent inclusion of active riders and community residents in decision making is imperative for specific equitable improvements to occur and systemic change to result. LINK Houston seeks continued opportunities to support communities through education and collaborative action.



Figure 6. Simple Rating System for Recommendations.



Headed the right way?
Yes, on route



Headed the right way?
Could be better



Headed the right way?
No, change route

RECAP: Why Improve Bus Service?

Many Houstonians need affordable transportation to safely, reliably, and with dignity reach opportunity. The most affordable forms of transportation include walking, rolling, biking, and riding transit. The local bus network is the backbone of the affordable travel network.

About 891,000 people in Houston live in 2021 TEDI high-demand areas.

Ridership on local bus and rail never dipped below 43% of normal ridership during the pandemic and was back up to 58% in September 2021.

Riders in northeast Houston expressed clear expectations for bus service to return in full force and be further improved in a variety of ways.

Transit systems need to retain existing riders and attract new riders. Proactive, equitable improvements focused on local bus service will enable people to continue using transit after a move or job change and will enable more people to choose not to buy a vehicle. Reducing vehicle miles traveled per capita is necessary to address climate change.

Recommendations for Infrastructure & Physical Improvement

A complete transit trip involves riders' reaching their stops by walking, rolling (i.e., for people with a disability effecting mobility), or biking (or using a car for some riders) and safely waiting to board. Improving the availability and quality of pedestrian and bicycle infrastructure is fundamental to advancing equity in and through transit—especially local bus service. METRO, as well as other stakeholders like the city, county, and special districts share responsibility for such improvements and must coordinate efforts.





Further Universally Accessible Transit

2021 Status: Improvements to Universal Accessibility of Transit Stops Are Generally “On Route”

METRO must continue improving every transit stop and station to ensure universal accessibility and reevaluate the process and metrics governing how bus stops qualify for necessities (e.g., shelter, seating, lighting, trash bins) with special consideration of transfer points and stops with off-peak service frequency of 30 minutes or longer.

As of August 31 (with one month remaining in METRO’s 2021 fiscal year), the agency had designed needed improvements at 1,200 bus stops (100% of the agency’s goal) and constructed improvements at 647 stops (about 83% of the agency’s goal and a rate of about 3 stops per day). METRO’s 2022 fiscal year budget continues investment in universal access, to the tune of \$17 million (including a portion from funds previously awarded by the Houston-Galveston Area Council: Transportation Policy Council).

Case Study Northeast Communities

In response to advocacy from northeast community members, METRO extended Route 3-Langley and increased frequency from 60 minutes to 30 minutes on weekdays and 45 minutes on weekends, created a new Route 79-Irvington, and created a unique community connector zone to provide late evening connections (i.e., 8:00 p.m. to 12 a.m.). As another example, METRO met with residents and stakeholders in Gulfton in early 2020 to plan a new route and other route adjustments; COVID-19 delayed the implementation.

Some bus riders shared concerns and ideas regarding accessibility of sidewalks, stops, and the onboard experience for people with a disability. The following highlights summarize key points and suggestions for northeast Houston:

- Transit stops, like sidewalks, should be brought into a state of universal accessibility
- Bus operators should consistently kneel the bus (i.e., lower the bus) as some riders with a non-visually apparent disability or challenge boarding the bus
- METRO buses have seating near the front for people with a disability and bus operators should graciously wait for people to get in their seat and fellow riders should patiently wait and promptly clear seats if asked (so riders with a disability receive respect and are not made to feel they are an inconvenience)

“I have to walk about a mile when I get off the bus.”

NE Houston Bus Rider



Enhance Practical Access to Transit Stops

v2021 Status: Could be better

METRO, the city, county, and special districts must coordinate efforts to improve and enhance access and safety to transit stops for people walking, rolling, and biking.

According to the 2021 Bus Rider Survey, people need sidewalks, functional intersections, and bikeways to better access transit stops. Such improvements are not the sole responsibility of the transit agency and require commitments and coordination with local and state government partners. The City of Houston and Harris County Precinct 1 project to improve street safety and connections along Cavalcade and Homestead is one current example.²

NOTE: LINK Houston invites anyone to share ideas and concerns about access to transit stops. Perhaps opportunities exist to partner or to form a more widely applicable recommendation next year.

Case Study Northeast Communities

Bus riders shared a wide variety of ideas and expectations for improving access to transit stops.

City of Houston, Harris County, and other partners must take the lead to create:

- More and better sidewalks and bikeways
- Opportunities to safely cross at street intersections

METRO must take the lead to create:

- More or closer transit stops to reduce the distance and time required to ride transit.

“We need universally accessible and complete sidewalks - and more shade.”

NE Houston Bus Rider

² <https://www.letstalkhouston.org/cavalcade-homestead-corridor>



Create Comfortable and Green Transit Stops

New for 2021 with initial primary focus on northeast Houston
2021 Status: Could be better

METRO should reevaluate the process for how bus stops qualify for improvements and make more stops comfortable, functional, and green to improve bus rider experience.

People need a comfortable and functional place to wait for the bus. While many transit stops include shelters, seating, trash bins, landscaping, and bike racks, countless others have no such improvements. Transit stops can also play a significant role in contributing to other societal goals, including initiatives to address climate change, reduce urban heat, encourage physical activity, and even increase access to nature and biodiversity. METRO is primarily responsible for improving bus stops, but local governments and special districts should include bus stop infrastructure in all relevant street improvements.

NOTE: LINK Houston plans to begin working alongside community partners in northeast Houston to pursue better bus stops into 2022 and invites anyone to share comments and concerns about stops in their communities. Perhaps opportunities exist to partner or form a more widely applicable recommendation next year.

Case Study Northeast Communities

Bus rider remarks touched on many aspects for physically improving and maintaining bus stops.

METRO is the prime responsible stakeholder regarding bus stops but local governments and special government districts play important partnership roles too.

METRO must take the lead to:

- Create more shade at stops to reduce exposure to heat and precipitation (i.e., through shelters or trees)
- Provide seating (but preserving space for people in a wheelchair to also wait comfortably)
- Provide trash bins (so riders can more easily participate in keeping stops clean)
- Conduct regular maintenance and cleaning of each stop and transit center

City of Houston, Harris County, and other partners must take the lead to create:

- Create and maintain stormwater drainage to prevent standing water next to bus stops (vehicles splash water onto people)
- Install and maintain sufficient street lighting at and around bus stops

Several riders expressed interest in restroom access – especially at transit centers where many people wait and sometimes no other public restroom option exists nearby. METRO should explore providing restrooms at transit centers.

Recommendations for Service Quality Improvement

The opportunity to get onboard and reach a destination is the third and central aspect of a complete trip. High quality transit is frequent, reliably available at hours riders need, operated with excellent customer service, and connects to and from origins and destinations.

METRO is the primary responsible stakeholder. City, county, special district governments, and even other transit operators may be able to assist as partners.





Restore and Add Frequency

2021 Status: Improvements to Frequency Are Generally “On Route”

METRO should fully restore the frequency of transit and prioritize METRONext implementation of projects involving the local bus network (including Bus Operations Optimized System Treatments, or BOOST, improvements on local bus corridors).

As the post-COVID ridership continues to increase, so do opportunities to improve frequency, particularly on the local bus network.³ Creating 7-day frequent bus service must remain a high priority for METRO in 2022 and beyond. The agency must continue implementing [METRONext](#), while balancing fiscal constraints and uncertainty. The Route 54-Scott [BOOST](#) corridor will serve the TEDI eastern and southeastern area of Houston high-demand area. The Route 56-Airline-Montrose BOOST will connect to the Greater Greenspoint high-demand area. Based on TEDI analysis, the next priorities for BOOST improvement continue to be the combined Route 25-Richmond/Route 50-Broadway corridor and the Route 2-Bellaire corridor.

Case Study Northeast Communities

Bus riders’ top priority for better bus service is more frequency.

METRO recently increased the frequency on Route 6 Jensen Greens in response to community requests and LINK Houston recommendation—thank you! Route 26 Long Point Cavalcade is presently at 30-minute frequency due to COVID response: METRO should return the route to 15-minute frequency. In addition, METRO should increase service frequency by (1) converting all 60-minute frequency routes to 30-minute routes and (2) converting one or more 30-minute frequency routes to 15-minute frequency.

METRO should specifically study how to expand frequency within northeast Houston. The study should include community representation and conduct a thorough exploration of how to increase access to opportunity through more frequent service. This study should also address geographic availability of bus service.

“I like that some bus routes have increased frequency, like 8-15 minutes. That is great!”

NE Houston Bus Rider

3 The bus network is not yet back to pre-COVID service frequency: 8 bus routes remain at a lower frequency (Routes 26, 27, 50, 65, 80, 89, 160, and 402). Three bus routes operate more frequently today (Routes 6, 88, and 137). Source: <https://www.ridemetro.org/MetroPDFs/AboutMETRO/COVID-19/METRO-local-bus-route-color-chart.pdf>



Extend Span of Service

2021 Status: Improvements to Span of Service Are “Off Route”

METRO should study and plan to strategically extend service hours on routes connecting essential workers to and from TEDI high-demand areas and extended-hour activity centers.

In recent years, METRO adjusted span of service in late evenings in a few cases where communities and advocates specifically sought such changes (e.g., the Kashmere Late-Night Connector), but system-wide plans do not yet exist for a network of 24-hour routes. Healthcare, retail sales, and accommodation and food services are three largest employment sectors, representing 663,000 total jobs (31% of all jobs) in the METRO service area.⁴ Many jobs in healthcare, grocery stores, restaurants, maintenance, airports, hospitality, and retail sales require employees to work on-site at all hours of the day or night—regardless of the pandemic or bus schedules. People employed in these jobs need affordable transportation options that can get them to and from work on time early in the morning and late in the evening.

The *Equity in Transit: 2018* report identified a set of 12 priority bus routes for a potential 24-hour network that would connect economically marginalized communities to extended-hour activity centers, specifically the Texas Medical Center, Uptown, airports, convention center, universities, and community colleges (i.e., bus routes 2, 6, 9, 11, 14, 26, 33, 36, 40, 50, 73, and 102). Route 33 is now the METRORapid Silver Line. The remaining 11 routes continue to represent a possible beginning for a 24-hour service network. Routes 6, 26, and 36 connect to and from northeast Houston. METRO plans to add some earlier and later trips to routes in January 2022 as part of METRONext implementation. Many major metropolitan areas in North America, and abroad, recognize the value of operating some 24-hour services (i.e., New York, Chicago, Los Angeles, Miami, San Francisco, New Orleans, Las Vegas, Portland, Seattle, Edmonton, Montreal, Vancouver, Toronto, etc.)—METRO must join them.

Case Study Northeast Communities

Many riders desired later and/or earlier hours of operation, especially riders in the surveyed neighborhoods (e.g., East Houston, Settegast, Kashmere Gardens, Trinity/Houston Gardens, and East Little York/Homestead). METRO implemented the Kashmere Late-Night Connector in 2019 in response to community and LINK Houston recommendation. METRO should create some level of 24-hour service on selected routes, including route 6, 26, and 36. METRO must effectively market new services to riders.

“[I] need more late-night service, 24-hours on certain routes. Some jobs begin at 6 am or end later [than the bus runs].”

NE Houston Bus Rider

⁴ Source: 2019 Jobs by NAICS Industry Sector in the METRO Service Area, Longitudinal Employer-Household Dynamics, U.S. Census Bureau



Improve Reliability

2021 Status: Improvements to Reliability “Could be Better”

METRO should focus on making expected and real-time schedule information consistently available to riders, while also working on METRONext projects to improve service reliability long-term.

METRO launched a pilot program to better share schedule information in 2020 and continued the effort into 2021. Real-time information on solar-powered tablets attached to stop signs does not guarantee the bus is on-time, but the information helps riders make informed decisions about their travel. METRONext implementation, including reliability elements, is in the early initial stages and must continue. The BOOST network of 17 much-improved local bus routes designed in part to improve reliability through optimized stop locations and traffic signal priority is especially important. BOOST does not change where the bus goes, but the upgrades should improve how reliably buses come and go. METRO should seek federal grant funds to accelerate BOOST rollout. Additionally, METRO is working now to improve operations in and out of certain transit hubs (e.g., Downtown, Midtown, Northwest, and Texas Medical Center transit centers) to increase reliability.

Case Study Northeast Communities

Infrequent and new riders expressed strong interest in better information, both real-time and on printed materials. METRO should place real-time information at many more bus stops, including at all transit center bus pull-ups. METRO should also update and replace all posted information inside kiosks or on bus stops.

“I really like the real-time signs on the bus stop posts. I found that if it says a bus will come in 5-minutes then it did. I want to see those everywhere.”

NE Houston Bus Rider



Enhance Customer Service & Safety

New for 2021 with initial primary focus on northeast Houston
2021 Status: Could be better

METRO should improve customer service and enhance mechanisms for safety at transit stops.

Based on clear feedback from bus riders and community researchers in northeast Houston, this new recommendation focuses specifically on northeast Houston to avoid presuming similar concerns exist universally.

Personal safety at transit stops and on the bus is essential for all bus riders in any context and in any location. Likewise, riders must be treated with respect and receive excellent customer service. Riders must also treat one another with mutual respect. Bus operators are the frontline transit employees most responsible for riders' experience. METRO's Board of Directors meets monthly and often members of the public make comments regarding a customer service or safety.

Case Study Northeast Communities

Bus riders shared a wide variety of experiences, ideas, and opinions about how to improve safety and customer service. METRO should review 2021 Houston Bus Rider Survey findings to identify specific rider feedback to address, such as the following examples:

- Expand the availability of charging ports on buses
- Monitor and improve bus operator capacity for consistently providing excellent customer service by:
 - Ensuring the lost and found program is well-functioning and understood by staff
 - Empowering and rewarding operators with excellent customer skills
 - Conduct operator and staff re-training, when necessary
 - Eliminating circumstances wherein a bus operator inadvertently passes a waiting rider without stopping.
- Partner with local governments to provide for safer waiting at bus stops by:
 - Improving overhead lighting

"When you [the bus operator] get on the bus, you got to be professional. Leave it at home. Take care of your personal business, be professional."

NE Houston Bus Rider



Expand Transit Network Coverage

New for 2021 with initial primary focus on northeast Houston
2021 Status: Could be better

METRO should explore opportunities to expand public transit service in northeast Houston.

Based on clear feedback from bus riders and community researchers in northeast Houston, this new recommendation calls on METRO to explore service gaps with the community to increase access to opportunity.

Case Study Northeast Communities

Some riders remarked on locations in northeast Houston to expand the transit network.

METRO's formal service area ends adjacent the communities. Harris County Transit operates fixed route and reservation-based (i.e., demand responsive) in the area. METRO, Harris County Transit, and local government partners should work with communities to explore opportunities to close gaps and add new connections in the transit network, some starting points for such collaboration could include:

- Extending services into portions of communities further north and northeast (such as toward Beltway 8 and US 90, beyond Ley Road, or connections to Bush Intercontinental Airport)
- More direct connections between points within the communities (such as from Wayside to the Route 6 bus)

METRO should specifically study how to expand access to, from, and within northeast Houston. The study should also address service frequency and other considerations. Residents and active bus riders should direct and inform the agency's work.

"I would really like METRO service to reach my neighborhood near Beltway 8 and US 90."

NE Houston Bus Rider

Conclusion

The 2021 Transportation Equity Demand Index (TEDI) found 891,000 people in Houston live in areas continuing to warrant strategic and disproportionately high investments in affordable transportation options for people walking, rolling, biking, and riding transit. The high-demand areas have high rates of poverty (23% of households versus 11% in all other areas); households with no vehicle (11% of households versus 4% in all other areas); and people already using primarily transit to access work (5% of employed people versus 2% in all other areas). The 2021 update to TEDI shows an increase of 24,000 people and 4-square miles from the previous year, demonstrating that many Houstonians need affordable transportation to safely and reliably reach opportunity with dignity.

The COVID-19 pandemic continues to pose economic, social, and health challenges on individuals and families across the Houston region. The report analysis indicates that ridership on local bus and rail never dipped below 43% of normal ridership during the pandemic and was back up to 58% in August 2021. Per the 2021 Houston Bus Rider Survey, bus riders in northeast Houston expressed clear expectations for bus service to return in full force and be further improved in a variety of ways. LINK Houston and the northeast Houston community research team provided recommendations for infrastructure and physical improvement as well as service quality improvement:

- **Continuing universal accessibility improvements**
- **Enhancing practical access to transit stops**
- **Creating more comfortable and green transit stops**
- **Restoring and adding frequency**
- **Extending span of service**
- **Improving reliability**
- **Enhancing customer service and safety**
- **Expanding transit network coverage**

METRO and partners must include active riders and community residents in every step of their decision-making, to ensure improvements to affordable transportation and street infrastructure advance equity for thousands of Houstonians.

In addition to specific recommendations provided in this report, the conversations between LINK Houston staff, volunteers, and community researchers identified several ideas for future action, including:

- **Advocating for various surveying organizations to include an open-ended question about transit (i.e., What would it take for you to ride transit?)**
- **Studying how transit agencies can proactively apply solutions working in one community to others with similar demographics or conditions**
- **Educating the public, and reminding officials, about the flexibility of federal and local funds and pursuing state funding support for transit and flexibility in state funds**
- **Exploring how to ensure that a range of public plans and policies, local and regional, promote and prioritize public transit**

Appendix

TEDI 2021: Additional Information

The Transportation Equity Demand Index—TEDI—identifies the areas of highest demand for equitably improving affordable transportation relative to all other parts of the METRO service area. The primary statistical method was to transform each block group’s values for 15 indicators into a percentile rank between 1 and 100 and then find the average of all 15 indicators. The result is a rank order of each block group in comparison to all other block groups. Higher values mean higher relative priority and feasibility for equitable transportation. Table 1 provides details on each of the 15 TEDI indicators. Figure 7 depicts the methodology of overlaying 15 indicators. Figure 8, on the next page, depicts the relative distribution of each indicator.

Note: LINK Houston created a version of the TEDI incorporating the METRO service area and all other areas of Harris County (i.e., including Tomball, Baytown, South Houston, Pasadena, etc.). Harris County Transit (HCT) is part of county government and provides several types of transit in areas not inside the METRO service limits. The TEDI findings for the combined METRO and HCT areas are available by request. LINK Houston intentionally chose to continue to focus the 2021 report on METRO and the deep dive into the 6 northeast Houston neighborhoods.

Table 1. TEDI, Indicator Details.

CATEGORY	INDICATOR	FORMAT	GEOGRAPHY	YEAR	UPDATED	SOURCE
Fundamental Demographic Demand	Households in Poverty	Percent	Block Group	2015-2019	Annual	U.S. Census Bureau, American Community Survey
	Single Parent Female Headed Households with Children Under Age 18	Percent	Block Group	2015-2019	Annual	U.S. Census Bureau, American Community Survey
	Households with One or More Persons with a Disability	Percent	Block Group	2015-2019	Annual	U.S. Census Bureau, American Community Survey
	Homes of Workers with Jobs Paying Less than \$15,000 Annually	Number	Block	2018	Annual	U.S. Census Bureau, Longitudinal Employer-Household Dynamics
	Work Sites of Workers with Jobs Paying Less than \$15,000 Annually	Number	Block	2018	Annual	U.S. Census Bureau, Longitudinal Employer-Household Dynamics
Likely Higher Transit Use (i.e., propensity, latent demand, or induced demand)	People of Color Population	Percent	Block Group	2015-2019	Annual	U.S. Census Bureau, American Community Survey
	Zero Vehicle Available Households	Percent	Block Group	2015-2019	Annual	U.S. Census Bureau, American Community Survey
	Workers Commuting by Transit	Percent	Block Group	2015-2019	Annual	U.S. Census Bureau, American Community Survey
	Homes of Workers with High School Education or Less	Number	Block Group	2015-2019	Annual	U.S. Census Bureau, American Community Survey
	Work Sites of Workers with High School Education or Less	Number	Block Group	2015-2019	Annual	U.S. Census Bureau, American Community Survey
Human and Built Environment Suitability	Population Density	Number	Block	2018	Annual	U.S. Census Bureau, Longitudinal Employer-Household Dynamics
	Household Density	Number	Block	2018	Annual	U.S. Census Bureau, Longitudinal Employer-Household Dynamics
	Street Intersection Density	Number	Block Group	2019	Annual	Center for Neighborhood Technology
	Average Block Perimeter (Feet)	Number	Block Group	2019	Annual	Center for Neighborhood Technology
	Compact Neighborhood Score	Number	Block Group	2019	Annual	Center for Neighborhood Technology

Figure 7. TEDI, Illustration of Methodology.

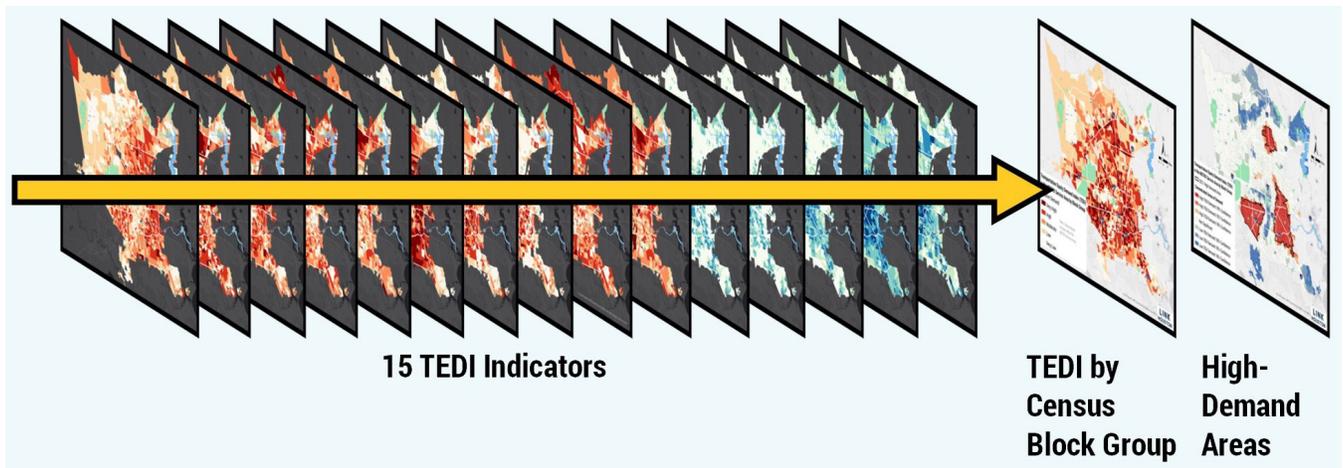


Figure 8. TEDI 2021, Individual Indicator Maps.

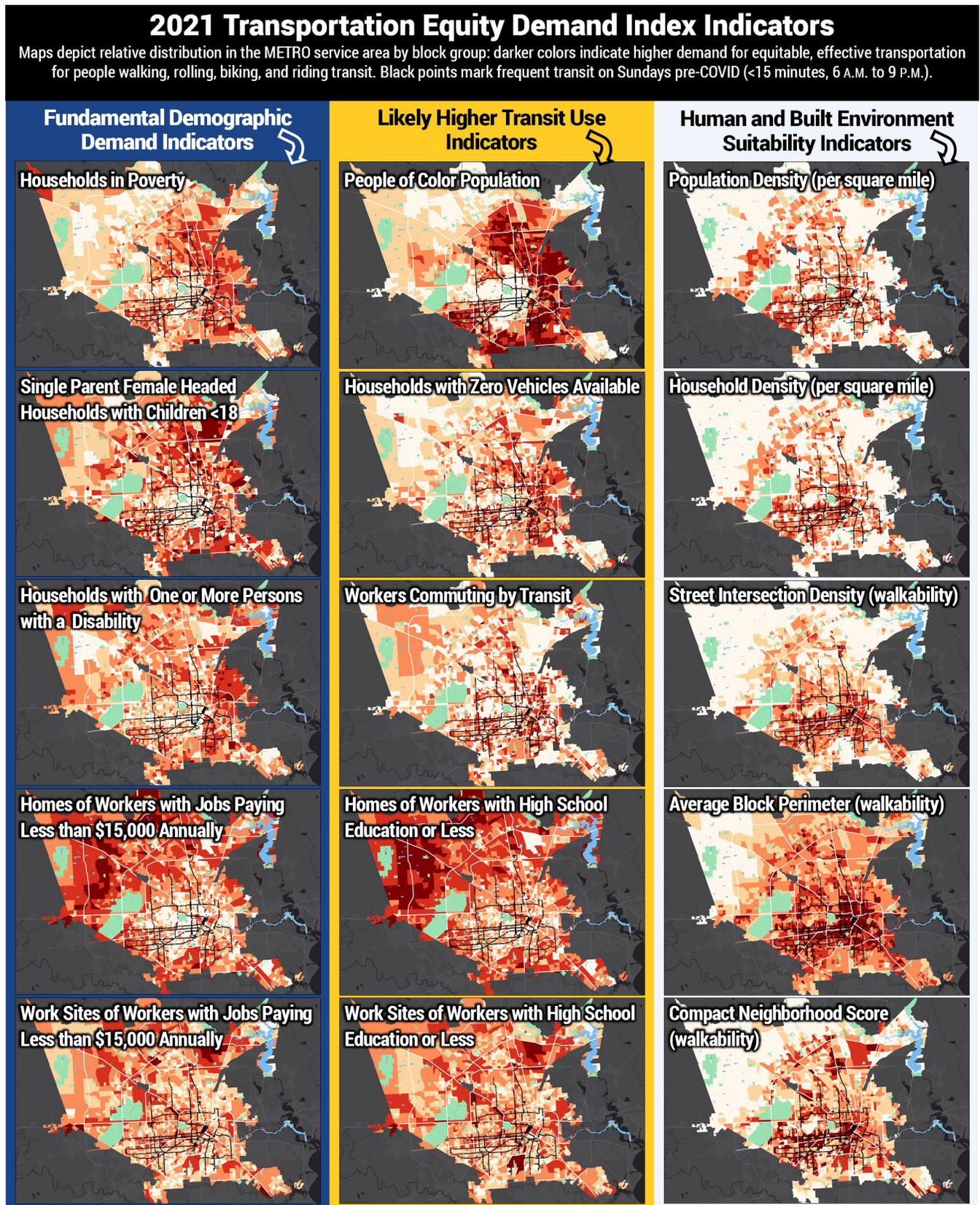


Figure 9. TEDI 2021, Houston METRO Service Area.

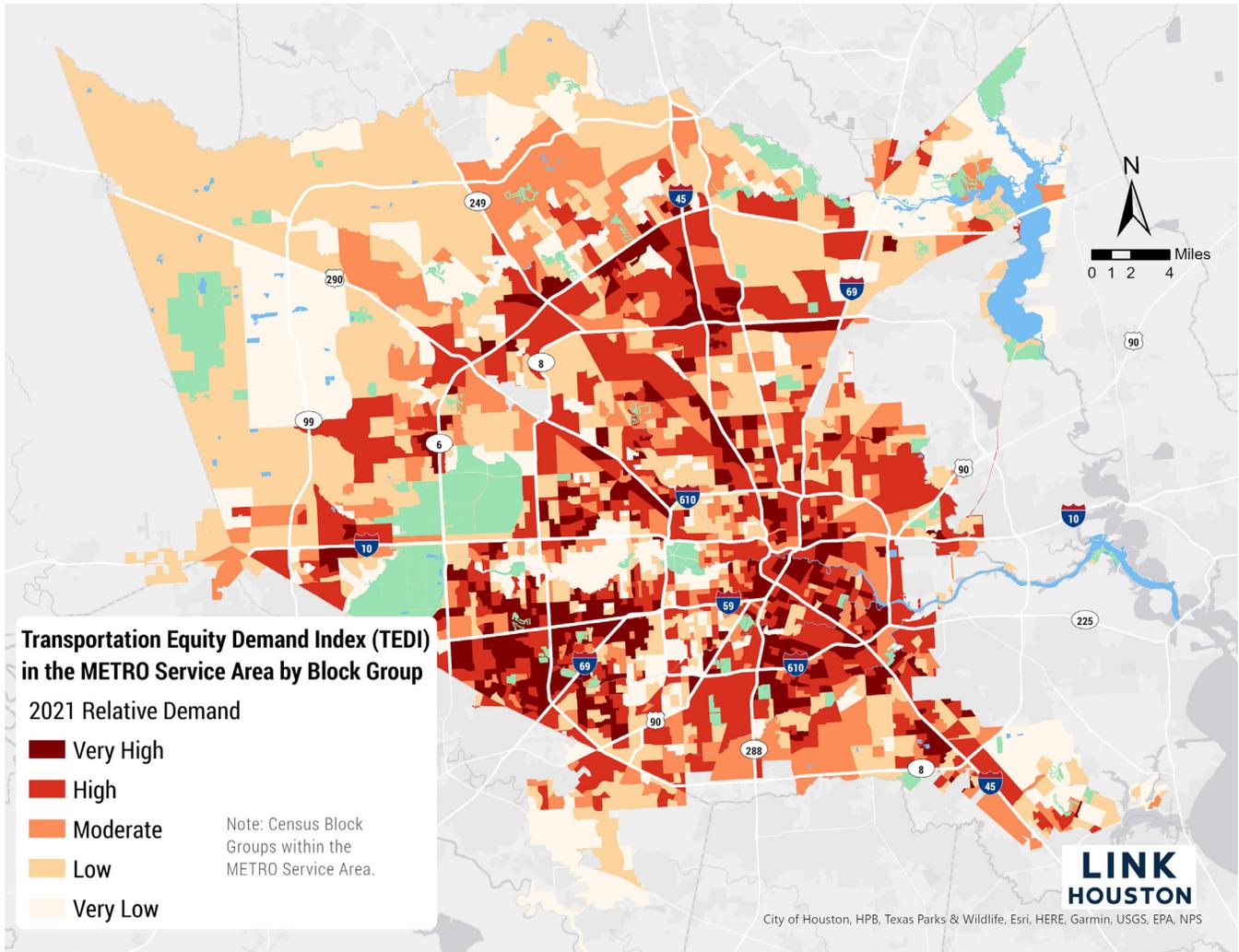
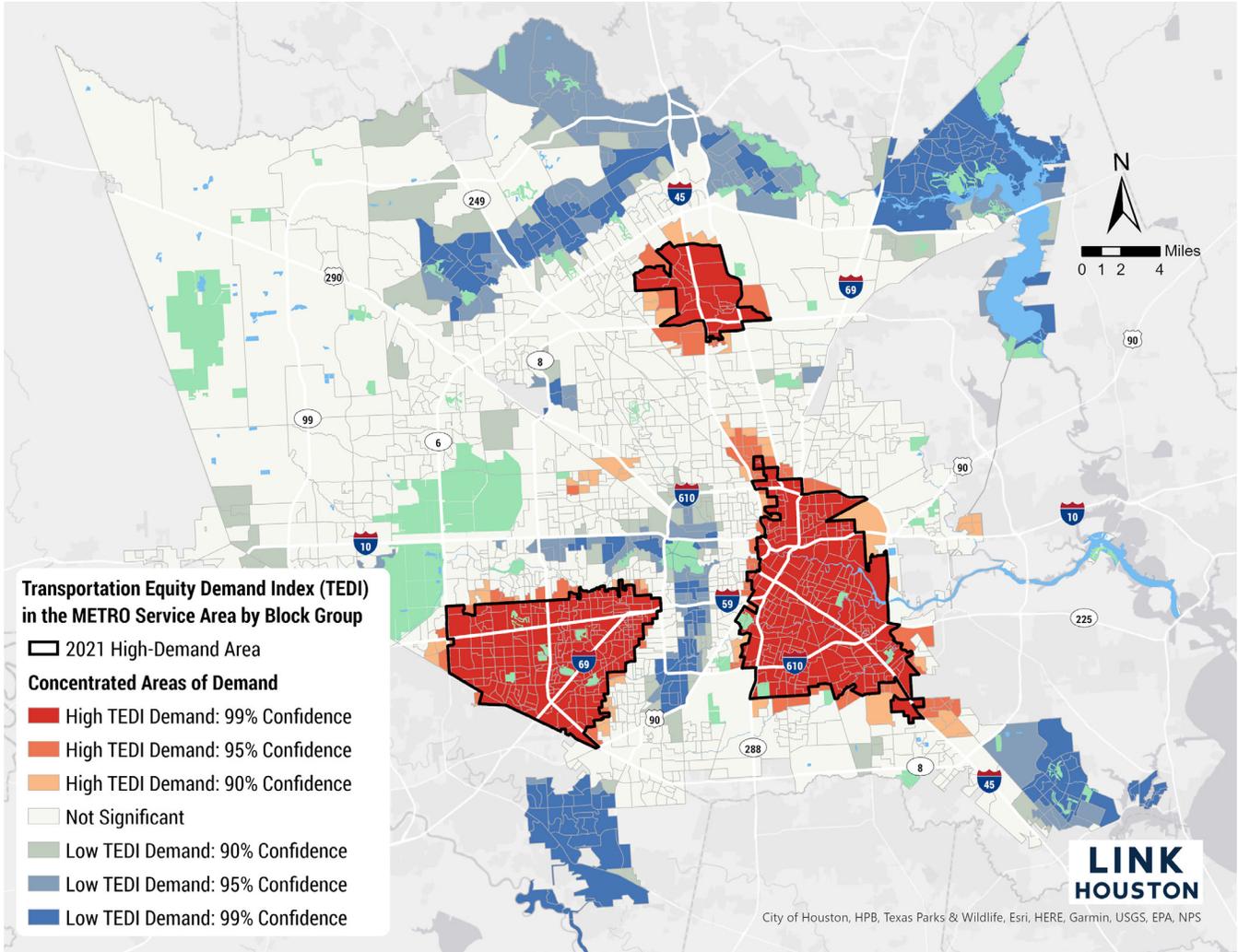


Figure 9 illustrates TEDI results by block group. The darker areas are locations where affordable transportation (i.e., transit, walking, rolling, and biking) is in high demand in Houston.

Figure 10. TEDI 2021, Statistically Concentrated “High TEDI Demand 99% Confidence” Areas.



LINK Houston conducted further analysis to identify the highest-demand areas of the region. ArcGIS Pro software tools were used, specifically the Optimized Hot Spot Analysis tool (which iterates Getis-Ord G_i^* and Moran's I statistics) to identify statistically significant concentrations of demand.

Figure 10 illustrates the results of the spatial statistics. The “High TEDI Demand 99% Confidence” areas are the priority list of high-demand areas for equitable and affordable transportation, whether that be transportation infrastructure (sidewalks, crosswalks, bikeways, and transit stops/stations) or transportation services (i.e., public transit operations).

Figure 11. TEDI 2021, Summary of Indicators by High-Demand Area.

CHARACTERISTIC	East		North		Southwest		2021 HIGH-DEMAND AREAS		ALL OTHER AREAS		METRO SERVICE AREA TOTAL		
	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	
Population	7%	340,895	2%	78,185	10%	471,881	19%	890,961	81%	3,701,797	100%	4,592,758	
Working Population	7%	147,390	2%	34,219	11%	232,938	19%	414,547	81%	1,789,050	100%	2,203,597	
Households	7%	118,213	2%	26,532	11%	170,854	20%	315,599	80%	1,273,290	100%	1,588,889	
Land Area (square miles)	4%	71	1%	17	3%	56	7%	143	93%	1,773	100%	1,916	
CATEGORY	INDICATOR	Percent Rate	Number	Percent Rate	Number	Percent Rate	Number	Percent Rate	Number	Percent Rate	Number	Percent Rate	Number
Fundamental Demographic Demand	Households in Poverty	25%	29,897	24%	6,261	22%	37,350	23%	73,508	11%	143,649	14%	217,157
	Single Parent Female Headed Households with Children < 18	9%	11,183	20%	5,191	11%	19,054	11%	35,428	8%	99,893	9%	135,321
	Households with One or More Persons with a Disability	24%	28,038	20%	5,436	17%	28,272	20%	61,746	19%	248,077	19%	309,823
	Homes of Workers with Jobs Paying Less than \$15,000 Annually	x	32,720	x	7,117	x	41,158	x	80,995	x	298,245	x	379,240
	Work Sites of Workers with Jobs Paying Less than \$15,000 Annually	x	46,173	x	7,044	x	57,484	x	110,701	x	319,878	x	430,579
	Likely Higher Transit Use	People of Color Population	89%	302,699	94%	73,427	87%	408,727	88%	784,853	65%	2,421,270	70%
Zero Vehicle Available Households		14%	16,153	11%	2,937	10%	17,161	11%	36,251	4%	55,275	6%	91,526
Workers Commuting by Transit		5.4%	7,997	4.1%	1,395	5.3%	12,340	5.2%	21,732	2.0%	35,758	2.6%	57,490
Homes of Workers with High School Education or Less		x	53,404	x	10,702	x	61,084	x	125,190	x	529,091	x	654,281
Work Sites of Workers with High School Education or Less		x	103,225	x	17,174	x	73,516	x	193,915	x	554,806	x	748,721
Human and Built Environment Suitability	Population Density	x	4,832	x	4,636	x	8,458	x	6,222	x	2,088	x	2,397
	Household Density	x	1,676	x	1,573	x	3,062	x	2,204	x	718	x	829
	Street Intersection Density	x	309	x	221	x	366	x	331	x	197	x	230
	Average Block Perimeter (feet)	x	2,117	x	2,944	x	2,446	x	2,313	x	3,314	x	3,068
Compact Neighborhood Score	x	7.49	x	8.37	x	8.16	x	7.85	x	5.65	x	6.19	

Figure 11 compares TEDI indicator results by 2021 High-Demand Area and the remaining METRO service area (i.e., High-Demand Areas possess significantly different characteristics than the remaining METRO service area).

Figure 12. TEDI 2021, METRO Frequently Served Stops on Sundays.

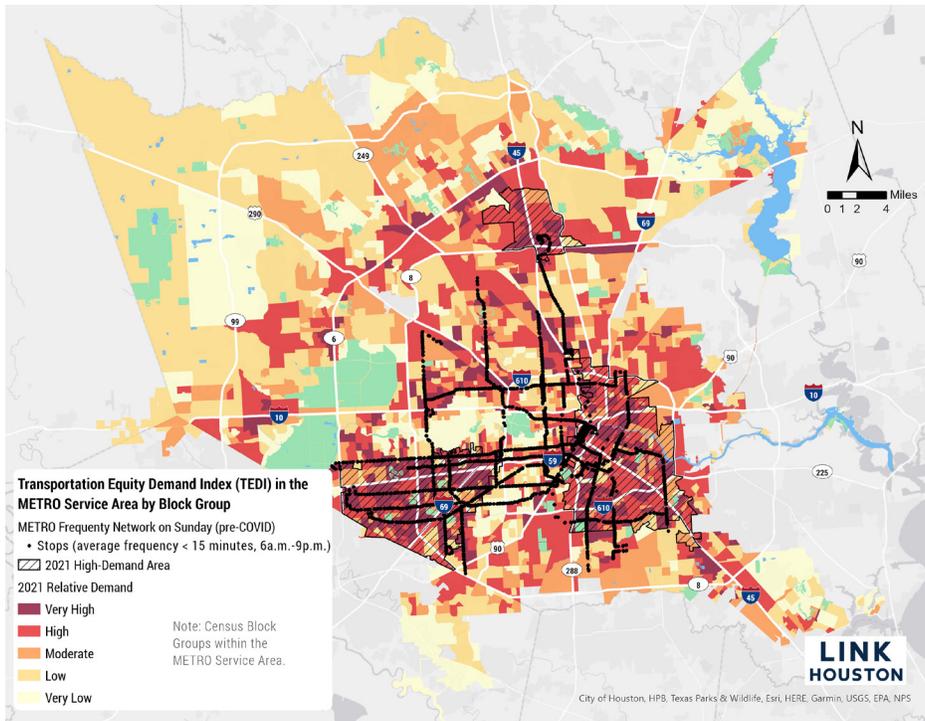


Figure 12 compares TEDI demand to fixed route frequency on Sundays pre-COVID.

Figure 13. Potential Priority Locations for Affordable Transportation based on TEDI and QATi.

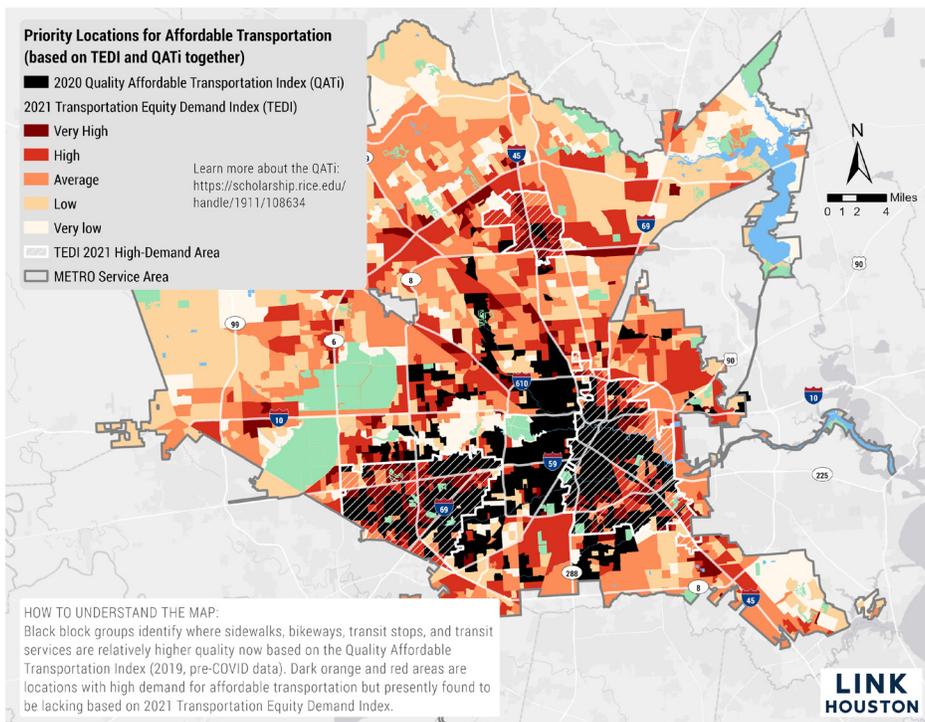


Figure 13 uses the TEDI and Quality Affordable Transportation Index (QATi) to identify some locations to prioritize because demand is high but existing sidewalk, bikeway, and transit quality are low.

Figure 14. TEDI 2021, Summary by City of Houston Super Neighborhood.

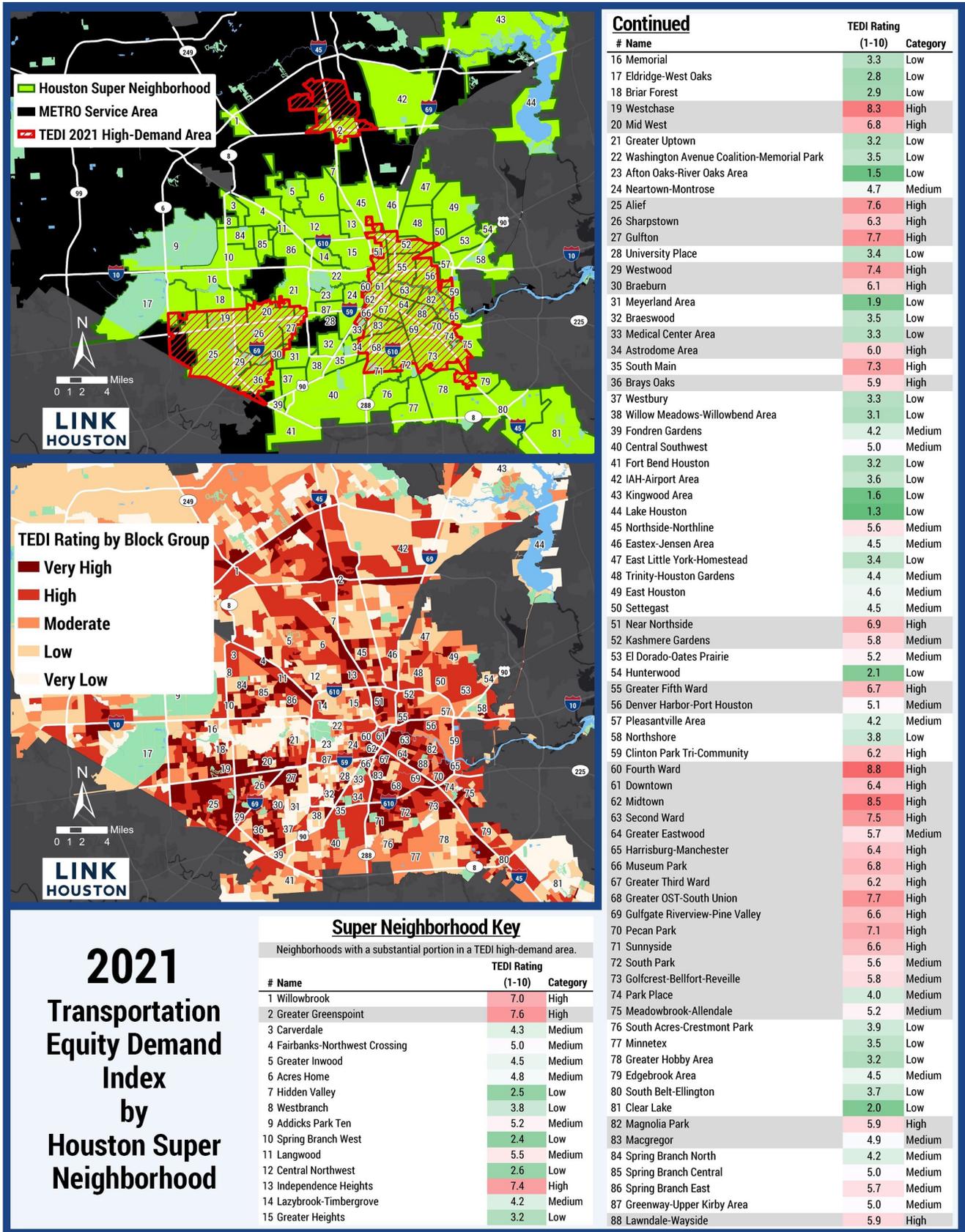


Figure 14 summarizes 2021 TEDI results by Houston super neighborhood.

Figure 15. Survey Training Reference.

Training Reference

Houston Bus Rider Survey 2021

Overall Goal for Our Canvassing

Understand individual and collective priorities for improving local bus service in 6 neighborhoods in northeast Houston – by speaking directly with current, active bus riders at bus stops and transit centers in their communities.

Canvassing Overview

LINK Houston staff and volunteers canvassing bus riders will approach people on public streets at bus stops and transit centers. The canvasser will ask something similar to the following:

“Hello. I am a volunteer with LINK Houston, a nonprofit focused on better, more equitable transportation. May I have about five minutes of your time to ask you a few questions? I want to understand what would improve your experience relying on bus service. Participation is entirely voluntary, and your responses are confidential.”

- If the individual does not agree, then the canvasser will say: ***“Thank you for your time. Have a great day.”***
- If the individual agrees, then the canvasser will promptly proceed to administer the survey: ***“Great ...”***
- If the individual agrees but the interview is cut short (i.e., the bus arrives), then the canvasser may ask about an email address or phone number (i.e., so LINK Houston can follow-up) and/or provide the postcard and say ***“Thank you for your time. Have a great day.”***
- If the individual is interested but has too little time to begin the interview, then the canvasser will provide the postcard and say ***“You can take the survey later on your phone or a computer. Have a great day.”***

Requirements and Tips

All volunteers must complete the volunteer form in advance.

Safety

- Stay in groups; always 2+ persons within sight of one another (i.e., preferably on the same street corner).
- Be aware of surroundings; your personal safety and safety of people around you is always the highest priority.
- At any time, if you feel discomfort or sense risk, please leave the area and head to a different stop.
- If parking, please leave valuables at home or hidden out of sight.
- Obey all traffic laws, including while crossing streets.
- Make all contacts with people in safe locations—never on the street itself or in a driveway.
- Give people time and space if they are getting off a bus or preparing to board a bus.

Demeanor

- Always remain calm and courteous.
- Disengage speaking with anyone who is agitated, or becomes so during the interview.
- Avoid direct eye contact with people who are approaching from a distance, such as while they cross a street, to avoid alarming the person.

Clothing

- Everyone involved will dress in weather appropriate, comfortable clothing.
- Nice casual clothes without distracting logos or words are strongly preferred (solid colors or patterns are best).
- Wear your LINK Houston shirt/button/badge.

Contact Information

Please direct any questions, comments, or concerns to Jonathan Brooks by calling or texting (806) 440-2462 or emailing jonathanbrooks@linkhouston.org.

Figure 16. Survey Flyer—English and Spanish.

HOUSTON BUS RIDER SURVEY 2021

Already took the survey? Great!
Please share the survey link with someone else who rides the bus.



Tell us what you think...
Use the QR code or visit the link to take the survey:
<https://bit.ly/busrider2021>
Participation is voluntary, and your responses are confidential.

Only takes 5 minutes!
Respond by September 1, 2021



Research by **LINK HOUSTON**
LINK Houston is a non-profit focused on advocacy for better, more equitable transportation. We want to understand what would improve your experience riding the bus.

To request disability accommodation or for other questions contact LINK Houston by email to info@linkhouston.org or by calling (713) 353-4604.

PASAJEROS DE AUTOBÚS ENCUESTA 2021

¿Ya llenó la encuesta?
¡Genial!
Por favor comparta la encuesta con alguien más que use el autobús.



Comparta su opinion...
Use el código de QR o visite el enlace para tomar la encuesta:
<https://bit.ly/autobus2021>
Participación es voluntaria y sus respuestas son confidenciales.

¡Solo toma 5 minutos!
Responda antes del 1 de septiembre del 2021



Investigación hecha por **LINK HOUSTON**
LINK Houston es una organización sin fines de lucro enfocada en abogar por un tránsito mejor y más equitativo. Buscamos entender que mejoraría su experiencia al viajar en el autobús.

Para pedir acomodaciones por deshabilidad o para más preguntas mándenlos un correo electrónico a info@linkhouston.org o llámenos a (713) 353-4604.

Figure 17. Survey Form—English.

Houston Bus Rider Survey 2021

Hello. I am a volunteer with LINK Houston, a nonprofit focused on advocacy for better, more equitable transportation. May I have about 5 minutes of your time to ask you a few questions? LINK Houston seeks to understand what would improve your experience riding the bus. Participation is entirely voluntary, and your responses are confidential.

First, I have a few questions about your experience riding the bus.



1. How often do you ride the bus?

1 day a week or less often 2 to 4 days per week 5+ days per week

2. How long have you been riding the bus?

Today is my first trip Less than a year 1 to 5 years More than 5 years

3. In general, how important is bus service to your being able to reach places you need to go?

Low importance Average importance High importance Absolutely essential

4. In general, how satisfied are you with the quality of bus service now?

Very dissatisfied Dissatisfied Neutral Satisfied Very satisfied

5. What do you like about using the bus; what works well?

Now I have a few questions about how things could be better, starting with your experience getting to the bus stops you use.

6. What would make your experience getting to your bus stops better?

You may want to think about...

- Sidewalks, intersections
- Safety (crime, stray dogs)
- Distance, time it takes
- Lighting
- Landscape trimming

7. How would you like your bus stops to be better?

You may want to think about...

- Shelter, seating, trash can
- Maintenance, cleanliness
- Safety (crime, dogs, lighting)
- Location of the stop
- Information, signage

8. How could the bus service be better?

You may want to think about...

- Frequency, transfers
- On-time reliability, wait times
- Hours of operation
- Maintenance, cleanliness
- Information, customer service

9. Do you have any comments about taking things on the bus, such as groceries, a stroller, or a walker?

10. Please share any other final comments: *(such as regarding the location of bus routes in your community, transfers, wait times, times when the bus runs, the fare, or anything else)*

Almost done! I have a few questions about you. This information will help us understand who participated in our survey.

11. What is your age? Prefer not to answer

Under 18 18 to 64 65 or over

12. What gender do you identify with? Prefer not to answer

Female Male Non-binary Another Gender

13. What is your race, ethnicity? Mark all that apply Prefer not to answer

Black or African American Hispanic or Latinx White or Caucasian Asian

American Indian or Alaska Native Native Hawaiian or Other Pacific Islander Another race

Are you willing to share an email address so LINK Houston can stay in contact?

Thank you for your time.
Have a great, safe day!

LINK Houston will not spam you or share your email with other entities.

Date: Location: Neighborhood(s): Follow-up?

Time: Bus route(s): Bike, stroller, walker, or wheelchair?

Figure 18. Survey Form—Spanish.

Encuesta de Pasajeros del Autobús 2021

Hola. LINK Houston es una organización sin fines de lucro enfocada en un tránsito mejor y equitativo. Por favor tome 5 minutos para responder unas preguntas. Buscamos entender que mejoraría su experiencia al viajar en el autobús. Su participación es completamente voluntaria y sus respuestas son confidenciales.

Primero, tenemos unas preguntas sobre su experiencia al viajar en autobús.



1. ¿Con que frecuencia usa el autobús?
 1 día o menos por semana 2 a 4 días por semana 5 días o más por semana

2. ¿Cuánto tiempo lleva usando el autobús?
 Hoy es mi primer viaje Menos de un año 1 a 5 años Mas de 5 años

3. En general, ¿cuanta importancia tiene el servicio de autobús para que pueda llegar a los lugares que necesita ir?
 Baja importancia Media importancia Alta importancia Totalmente esencial

4. En general, ¿cuan satisfecho(a) esta con la calidad del servicio de autobús ahora?
 Muy insatisfecho(a) Insatisfecho(a) Neutral Satisfecho(a) Muy satisfecho(a)

5. ¿Que le gusta de usar el autobús; que funciona bien?

Ahora tenemos unas preguntas sobre como las cosas pueden mejorar, comenzando con su experiencia llegando a las paradas de autobús que usa.

6. ¿Que mejoraría su experiencia para llegar a las paradas de autobús que usa?

Es posible que le guste pensar en...

- aceras/banquetas, intersecciones
- seguridad (crimen, perros callejeros)
- distancia, tiempo que se necesita
- iluminación
- o el paisaje

7. ¿Como le gustaría que las paradas de autobús fueran mejor?

Es posible que le guste pensar en...

- el cobertizo/techo, la banca
- mantenimiento, limpieza
- seguridad (crimen, perros, iluminación)
- ubicación de la parada
- información, o señalización

8. ¿Como podría mejorar el servicio del autobús?

Es posible que le guste pensar en...

- frecuencias, transferencias
- confiabilidad de tiempo, tiempo de espera
- horario de operación
- mantenimiento, limpieza
- información, o servicio al cliente

9. ¿Tiene algún comentario sobre llevar cosas en el autobús como comida, una carriola, o un andador?

10. Por favor comparta cualquier otro comentario final:
(como con respecto a la ubicación de rutas del autobús en su comunidad, transferencias, tiempos de espera, el horario que el autobús opera, la tarifa, o cualquier otra cosa)

¡Ya casi terminamos! Tenemos unas preguntas sobre usted. Esta información nos ayudaría entender quien participo en esta encuesta.

11. ¿Cuantos años tiene? Prefiero no responder
 Menos de 18 18 a 64 65 o más

12. ¿Con que genero se identifica? Prefiero no responder
 Femenino Masculino No binario(a) Otro genero

13. ¿Cual es su raza, etnia? Seleccione todo lo que corresponda Prefiero no responder
 Negro(a) o afroamericano(a) Hispano(a) o Latinx Blanco(a) o Caucásico(a) Asiático(a)
 Indígena de las américas o nativo(a) de Alaska Nativo(a) de Hawái u Otra de las islas del pacifico Alguna otra raza

¿Esta dispuesto(a) a compartir un correo electrónico para que LINK Houston pueda mantener contacto con usted?

LINK Houston no le enviara spam o compartirá su correo electrónico con otros.

Gracias por su tiempo.

Tenga un buen y seguro día!

Fecha: Ubicación:

Vecindario:

¿Podemos darle seguimiento a nuestra conversación?

Hora: Ruta(s) de autobús:

¿Bicicleta, carriola, andador o silla de ruedas?

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